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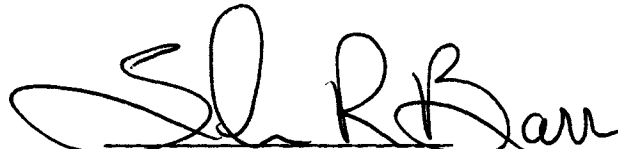
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The general ledger system

by Chung-Chieh Wu

Presented in partial fulfillment of the requirements for
the degree of Master of Science
University of Montana
1984

Approved by:


Chairman


Dean, Graduate School

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The General Ledger System (333 pp.)

Director: Dr. John Barr SB

The general ledger system is the heart of an accounting system. It is a record of the balance of each of the accounts of a business. At the end of an accounting period, the system is used to produce financial statements to show the results of the business activities of that period.

This general ledger system was developed by following all of the phases of development for a large software system. The system design was developed after the requirement and the analysis specification was approved by the thesis committee. The Problem Specification Language / Problem Statement Analysis (PSL/PSA) was used in the analysis phase to produce the specification. This particular system is designed by structural design methodology. The design documentation was produced through the use of Program Design Specification Language (PDSL).

The programs were written by following the design specification. It was decided to use COBOL to implement this project. The programs were tested during the implementation phase.

During the progress of this long and tedious process, many people have contributed toward my thesis. First of all, my thesis committee: Dr. John Barr for helping me utilize the techniques and tools in software development; Professor Gene Schiedermayer for helping me to know more about the general ledger system; Dr. George McRae for his comments on my thesis. Secondly, the following friends encouraged and helped me enormously; Raj, Rama, Philip, Scott, Trish. Finally, Olive, my wife's superior support is unforgettable and appreciated.

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CHAPTER 1

INTRODUCTION

According to Software Engineering Economics by Barry W. Boehm, in the past thirty years the cost of hardware has decreased and the cost of software has increased. The increased requirement for efficient and complex software over the last three decades is mainly responsible for this situation. The progress in the advancement of software technology compared to requirements is very slow, the need for more efficient tools and methods of software technology is difficult to meet. The development and use of new software engineering tools and methods is a logical way of resolving this problem. Experience indicates that efficient software products can be developed by using these methods and tools.

This project is an exercise in software engineering covering the specification, design, and implementation of a model general ledger system. The software technology tools: Problem Specification Language / Problem Statement Analysis (PSL/PSA) and Problem Design Specification Language (PDSL) ; and methods : structured analysis and structured design ; were utilized in this project.

Normally, the products of a software development process include specification, design and implementation. The specification is the product of problem formulation and problem analysis phases. The problem formulation phase describes the problem of the system without detail. Then, the problem definition is refined to supply essential detailed specifications during the problem analysis phase. A set of potential solutions to the problems can be identified through the study of the specifications. The potential solutions are evaluated and compared to the alternatives until the best solution is obtained. The design documentation describes the chosen solution in detail. Referencing the design documentation, the final product is constructed in the implementation phase.

This project will be approached by following the software engineering steps. Acquiring knowledge about accounting system to identify and define the problems in it is the first step. The accounting cycle and functions of general ledger system are known from this step. Interviews with the user help in defining the general ledger system and ensuring that his requirements are incorporated. This newly defined general ledger system will be represented in the data flow diagram. The specification of a model general ledger system will be produced after interviews with user. It is described by using Problem Specification Language / Problem Statement Analysis (PSL/PSA).

Referencing the data flow diagram and specification, the specified system is designed in a structured manner.

Structured design is a method to obtain maintainable, modifiable, and implementable system designs. The Program Design Specification Language (PDSL) will be used to describe the design. The design documentation is used in the implementation phase. The user manual will be written simultaneously when the system is implemented in COBOL. The testing will be done from the beginning of coding until the final integration of whole system.

The following chapter describes what a general ledger system is and what it should do according to user requirements. The analysis, design, and implementation phases will be discussed in succeeding chapters. The problems will be discussed in the last chapter. It also will describe solutions to those problems.

The specifications which are laid out in the Data Flow Diagram and formatted problem statement of the Problem Specification Language / Problem Statement Analysis (PSL/PSA) are in appendix A. The design documentation which contains the structured design chart and the formatted statement of Program Design Specification (PDSL) are in appendix B. Appendix C is the system implementation in COBOL code. The user manual is in appendix D.

CHAPTER 2

General Ledger System (G-L-S)

The task of accounting is to track the financial events in the life of any entity (individual or organization) in a manner that makes it possible for that individual or organization to report on its financial position and activities to anyone who may be interested. Therefore, accounting deals with financial events which are very important information for an entity. Anytime during the life of a business, an accounting system must be prepared to provide many different types of information about the activities of that business.

The transactions of daily business events are entered in an accounting record or journal to provide up-to-date financial information about a business. Because all transactions are written in the journal, it can be treated as a book of original entries. There are several types of journals to accomplish the recording function of accounting process. Ideally, we want a "daily" that gives the chronological history of that business by recording the important accounting events. It also is required to record these transactions in a way that makes it easy to recognize the effect of events on assets, liabilities, owner's equity, revenue, and expenses of the business.

The journal records raw data for the system. It is only the beginning of the accounting cycle. In order to produce useful reports about the business at the end of any accounting period, an accounting system must be able to determine the total effect of all transactions in a period on the accounts of the business. During the second step in the accounting cycle the transactions are posted to a ledger.

The classification function is accomplished by the ledger. The ledger is used to separate components of each transaction and group those components that affect each individual asset, liability, owner's equity, revenue, or expense account. So, the ledger can show the cumulative effect of all transactions that affected a particular account.

Three important characteristics of ledgers are:

1. The ledger focuses on the individual accounts of a business. For example, there may be 50 or more transactions affecting cash, spread throughout the journals. The ledger enables the net change in an account to be determined by accounting for all transactions that affect that account.

2. Posting to the ledger usually takes place at the end of an accounting period. Because it is important to know

the net effect on all assets, liabilities, owner's equity, revenues, and expenses for a series of events. But it is not necessary to know the effect of each individual transaction as it occurs.

3. Posting to the ledger simply reproduces information already recorded in the journal. It does not produce new information. It only shows the cumulative effect of transactions on individual accounts.

The third step in the accounting cycle is called the trial balance. The value of an account shows in the balance. Businesses need to know the dollar value of each account at various times in order to be assured that the basic accounting equation ($\text{Assets} = \text{Liabilities} + \text{Owner's Equity}$) is still in balance. The informal internal statement, called a trial balance, is usually created when these balances are determined. The trial balance is simply a list of all accounts used by the business and the dollar amount in each account. It can give an overview of the accounts, their amounts, and make sure the basic accounting equation still holds.

The above steps may be performed continuously, frequently, or only once during an accounting period. The end-of-period activities occur only at end of each accounting period. Business events can be categorized into two parts: external events and internal events. External

events take place between a business and individuals. When the external events occur, they are usually documented and recorded by either or both parties. As mentioned above, steps one to three of the accounting cycle are concerned only with external events. In step one the external events are recorded and in step two they are posted. The trial balance in step three is produced from those external events.

The internal events are another class of transactions which occur in the life of a business. They are more difficult to grasp than external events. Because they may happen within the firm, and there may not be any individual or other business directly involved in the transaction. Also, these events occur constantly rather than at specific, identifiable points in time, and there is rarely a document to support the changes made through transactions. Because of this, a series of entries called adjusting entries must be recorded at the end of the period to accumulate the effect. Hence, before financial statements are prepared at the end of the accounting cycle, all the events, external and internal, should be properly recorded.

Financial statements are prepared in step four. Most users like to have two basic statements, a balance sheet and an income statement. The balance sheet lists the possessions of the business and the obligations the business faces. It reflects the equality condition of the basic accounting equation. It is a picture of the business depicting its financial position as of any one instance. For conveying information about the nature of individual assets, liabilities, and owner's equity, the balance sheet is prepared according to the above mentioned classifications.

The income statement is another primary statement which is produced by the accounting system. It shows the ultimate effect on the business of its profit-seeking activities during a specific period. The net income, net profit, or net earning is shown on the bottom line of this statement. The balance sheet and income statement are related to each other. The two statements interact together through retained earnings. Net income minus the amount of those assets withdrawn by the owners, represent the net amount by which retained earning is increased for the period.

The last step in accounting cycle is closing entries. Only the revenue and expense accounts and retained earnings account have to be closed. No other accounts are affected by this final step. The revenue and expense accounts are created temporarily to calculate the retained earning which resulted from the profit-seeking activities of a business. In the beginning of a new period, these revenue and expense accounts will have to be set to zero. In general, a computerized general ledger system includes most of the functions mentioned above, except the routine recording job (ie, the journal).

CHAPTER 3

ANALYSIS

The analysis is the most important step in the system development life cycle. A successful analysis can decrease the expenditure to obtain a desired result in the future. A system analyst, having knowledge about the system and the user needs, acts as a bridge between them. Thus he helps in the efficient operation of the system. Detailed documentation is developed during this phase, which subsequent phases can use to evaluate whether the target has been attained. It is the medium of communication between user and developer.

During the analysis phase, I spent most of the time in identifying the user's requirements. In the beginning, I created the physical data flow diagram of the system from general accounting reference [2]. This was presented to the user to make sure it was correct. Through discussions with the user, the requirements were understood by using the data flow diagram. Then, the logical data flow diagram was produced and shown to the user to assure that all his requirements were included in the diagram.

After interviewing the user, the system requirements were identified. According to the requirements of the user, the General Ledger System should collect the entries from the Account Receivable, Account Payable and Payroll accounting subsystems at the end of each period. The collected data will be entered to the system manually using a terminal. Entries will not be accepted if they have any error. The system accepts the valid entry and sends it to the entered account file. After finishing the entries, the user can request a Trial Balance Sheet which can be referenced to determine the adjustment entries. These adjustment entries will be entered to the system. A new Trial Balance sheet will be produced to make sure the accounts are in balance. If the entered accounts are balanced, then the entered entries are posted to update the general ledger account. The current period's Income Statement can be obtained before the revenues expenses accounts of the general ledger file are set to zero for the next period. After printing the Income Statement, the total income of this period will be moved to a capital account. The Balance Sheet can be obtained after the end of period process.

In addition to the above functions, the user would like to have a ledger sheet showing the flow in each account in a period of time. A chart of accounts showing the current accounts in the system is also desired by the user. He also wants to have an audit trail which shows the trail of entered accounts for a certain period. The user desires a list of entered accounts for the current period. This should be produced before the entered account file is posted to the previous entered account file and cleaned.

The system must allow the general ledger accounts to be maintained in terms of addition, deletion or modification. Maintenance must be double checked to make sure it is correct.

In the beginning, the control flow was sometimes shown on the diagrams, which was not correct. Thus, in the data flow diagrams I tried to show the flow of data, not the control. This helped to design a less coupled system in the next phase. It is a major function to produce the useful reports of the general ledger system. Thus, during identification of the data flows, it is important that the data to the system should be sufficient enough to produce the reports. The data of input and output were discussed in detail to make sure the information was available to perform the required functions. Because the detailed input can not be totally decided before knowing the required reports, the report formats were determined before trying

to identify the detailed input. After the interviews, the contents of the data flow were recognized. At the same time, the data flow diagram was refined many times to get the best version.

The Data Flow Diagram and changes made to match the requirements of user is shown in appendix A. There are four major components in a Data Flow Diagram. First, the Data Flow: It portrays some interface among components of the Data Flow Diagram. Most data flows move between processes. Second, the Process: It shows some amount of work performed on data. Third, the File: It is a temporary repository for data. It may be a tape, or an area of disk, or a card data set. Fourth, the Source or Sink: The source and sink show where the net input is coming from and the net output is going to. It may be a person or organization, lying outside the context of a system, acting as a originator or receiver of the system data.

The Data Flow Diagram is easy to read and conceptualize. Instead of showing a very wordy and complex system, the Data Flow Diagram partitions the user requirements down to components. It shows the major divisions of functions, and all the interfaces among the components. Communication with the user is made simple through the compartmentalization of the Data Flow Diagram.

The Problem Statement Language / Problem Statement Analyzer was used to describe the system according to the Data Flow Diagram. PSL/PSA was used after the above steps. The leveled data flow diagram was described from the top of the hierarchy to the bottom. Each time I added only one page's description of the data flow diagram to the PSL/PSA data base. Before integrating another page's description, all the errors caused by the current page's description were corrected. This method only corrected the new errors which were caused by the recently added part and it made the integration easier and more correct.

The PROCESS in the Problem Statement Language is defined by specifying the information upon which it operates and the information which it produces. In the view of Problem Statement Language, every bubble in the Data Flow Diagram is a PROCESS. The top bubble, which is the highest level can be regarded as the total target system. The Data Dictionary can then be described easily through the use of ELEMENT, ENTITY, GROUP, SET, INPUT and OUTPUT in the Problem Specification Language. Besides, in each defined PROCESS, the analyst can describe the procedure for each bottom level of the data flow diagram in structured English (minispec). After the described system is put into the Problem Statement Language data base, the analyst can obtain many analysis reports through the Problem Statement Analyzer. The Formatted Statement

command combined with the parameter TRACE-KEY in Name Selection can produce the partitioned target system Formated Statement reports. The Partitioned report is a representation of a leveled Data Flow Diagram.

The formats of the reports were described in the "layout" of the OUTPUT in the PSL. Because only seventy three columns were accepted by the "IPSL" command of the PSA, every description line of reports which are more than seventy three columns must be separated into two lines to meet the constraint. When trying to get the reports' layout, the width parameter for the "layout" command in PSA had to be more than seventy three columns. Then the layout reports would be created correctly. All the margins of this analysis specification had to be adjusted to match the constraint of this thesis. The consideration of margin was trifling, but it would reduce the trouble when changing it in the future, especially when changing the source code.

From the above brief description of the Problem Statement Language, we can find that it contains three features that help to describe the system. First, it is easy to get a partition documentation which corresponds to the Data Flow Diagram. Second, the minispec is a tool which is used to document the internal details of the Data Flow Diagram in a structured English fashion. Third, the data dictionary is clearly described through the use of Problem Statement Language.

CHAPTER 4

DESIGN

The purpose of system design is to generate a model to reflect the primary functions which the user expects from the system. Usually, to begin the design, the designer reads the system specification which is approved by the analyst to make sure that the design will follow the requirements. But in the specification, only the system inputs, outputs and minispecs are available to make decisions for the system design. Most problems in the system must be identified in this phase, like how many subsystems and modules are needed to accomplish the user's requirements and how those subsystems, modules are interconnected.

The whole system's major characters will determined by this phase. How many subsystems in this system, how many modules are needed to reach the expected functions for each subsystems. After choosing the best allocation of all components for the system, the design documentation (which has precise specifications of individual modules) will be produced and passed to the programmer. Usually, it must include information about inputs, outputs, interfaces with other parts of the system as well as the algorithms.

The "structured design" guidelines are used to help solve the above problems. The collection of guidelines and techniques for structured design have proved that these lead to a better design. For each module, seven subordinate modules proved to be manageable. The smaller the size of each module, the less complicated the functions for each module. The coupling is a measure of the relations between modules. It may be measured by the number of connections, type of connection and type of information contained within those connections. The simpler and fewer the interrelationships between modules, the lower measure of coupling. The cohesion is a measure of the type of relationships that exist between elements in the same module. The stronger cohesion of a module, the more the module can be treated as a single unit. Thus, the higher the cohesion of the module the less the coupling of the module.

According to those guidelines, the less coupling the system, the better. It ideally means that one module can be studied without knowing very much about any other modules in the system. It should be possible to change one module without changing the other modules. Consideration of the type and complexity of interfaces between modules will help to produce a less coupled system. On the other hand, the lower the coupling of the system the stronger the cohesion of individual modules in the system. The Data

Flow Diagram, which is accepted from the analysis phase, is used to figure out the flow of the data through the system. Beginning from the top level, a trivial Data Flow Diagram is then refined by segmenting the whole system down to the bottom. However, this diagram does not show the loops, terminations or decisions.

Second, the trivial diagram is used to try to identify afferent and efferent data. The afferent data elements are those elements of data which are inputs to the system. The process starts by reading from the physical input into the system along the Data Flow Diagram. Beginning at the other end of the system, the outputs are identified. The reason for identifying the efferent data elements from the back, is that the efferent data elements are those farthest removed from the input. Then, the system is separated into three parts: afferent, efferent and transforms. A main module is specified which performs the entire task of the system by calling upon the three sub-ordinates. The main module is the overall control for the process. The controls and coordinates of the efferent, afferent and transform modules are handled by this module. Fig. 4-1 is a simple example of the sectioned data flow diagram. Fig. 4-2 is the resulting structure chart from Fig. 4-1. There may be different ways to separate the data flow diagram. Differently sectioned data flow diagrams will result in the different types of design

structure chart.

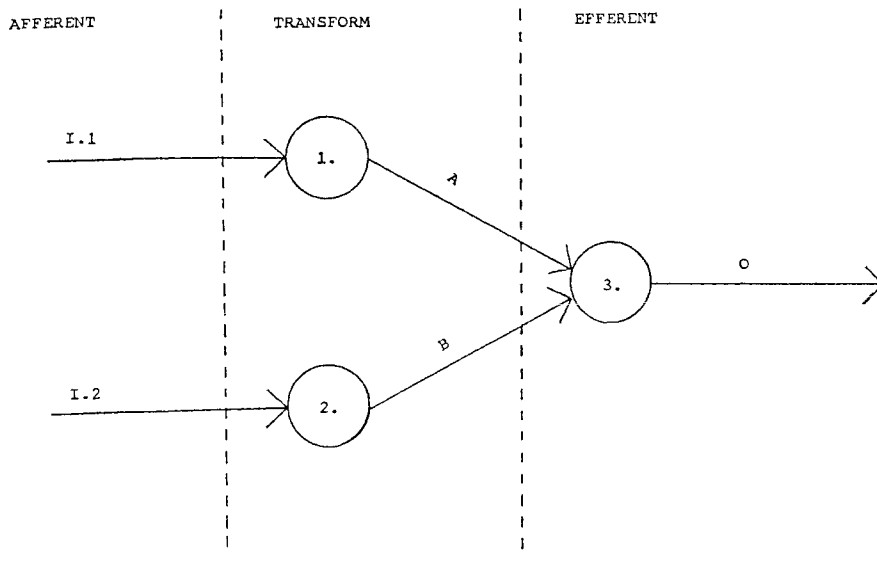


FIGURE. 4-1

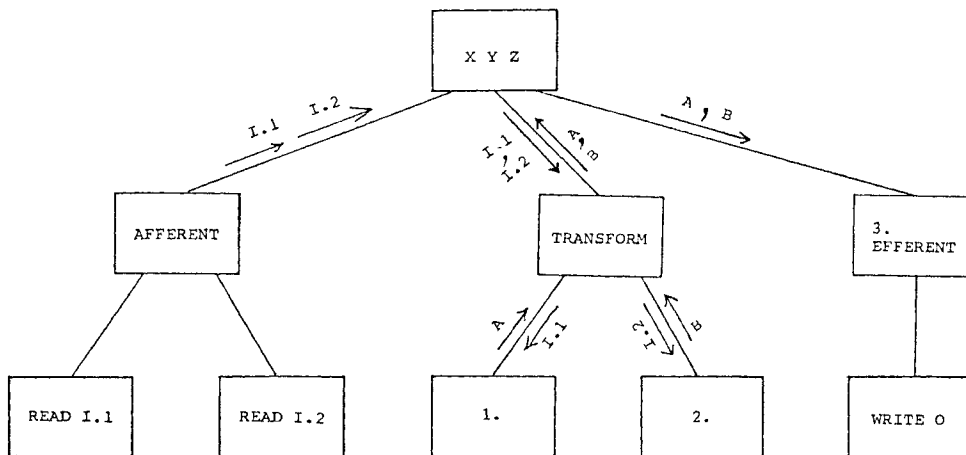


FIGURE. 4-2

Each subordinate module is factored separately. The structure chart will be used to present the factored system. It helps to define and identify subordinate modules. In this step, it is preferable to go too far in an initial factoring, and to have recognized processes that are too small, too fractional, and too specialized to constitute distinct modules. Those very tiny modules can be combined later with a fuller understanding of the design structure; hopefully an optimal choice can be made. If the design process does not go far enough, the opportunity for conscious decision may be lost.

After the final version of the system design is decided, the Program Design Specification Language (PDSL) can be used to describe the properly allocated modules of this system in detail. Through the description of PDSL, the design specification (please reference the appendix B) can be obtained. The design specification will be used for implementation in the next system development life cycle. Thus, it is better to pay more attention to this phase than to find errors in the next phase.

In the beginning, the afferent, transform, and efferent portions of system were decided. The functions to accept the entry, adjust the entry, and the general ledger file maintenance were all included in the afferent portion. The reason was that these process all accept input. Then, the efferent portion was decided. All the report process

were included in this portion. This left processes which update the general ledger file, clean the old entry, clean the revenues and expense accounts, and the end of year process. These all belong to the transaction portion. These processes transform input data which may be used by all the report generators. So, the whole system was separated into three parts.

Working with the afferent, transform and efferent separately, the whole system was factored into modules. The first version of the design chart did not go into enough detail. Therefore, a detailed design was produced by further factoring the first design. Because I am both system designer and programmer, the bottom level modules were designed in too much detail, so some were removed for the final design.

Trying to reduce the number of parameters between modules, especially the control parameters, was considered during the factoring. The number of subordinate modules of this design was manageable. The report generator has eight subordinates which still are not too complicated to handle. Each module's algorithm can be described within one page, which is a reasonable size.

When the design chart was described, the final version design was changed once to match the definition of the PDSL. It was caused by those global variables which defined in DATA-STRUCTURE. Those elements in DATA-STRUCTURE can not be used as parameters which must not be a global variables under the definition of PDSL. The modules which would be described as library routines in PDSL were considered too. The library routines' cohesion were not reduced by changing from a normal routine to a library routine.

There were several error handlings considered during the design. As any illegal data was detected, an error message was shown and reentry requested. When the accounts were not in balance, the update general ledger file module would show the message and the update would not be executed. The module cleaning the entered account file would not be processed until entries were used to update the general ledger file.

Since this was a big design, the design charts contained many pages. It might not be understood clearly by studying only one page. The off page symbol of design chart was used to connect to another page. But when studying the design charts the off page reference is an inconvenience. Thus, the use of the off page reference table, which contained the page numbers and the names of connected modules, reduced the necessity of turning pages

and increased the design chart's readability.

CHAPTER 5

IMPLEMENTATION

Our purpose is produce a more reliable software for the final product. Thus, each time an error is detected and successfully rectified, the system reliability will be improved. In this phase, the methods of testing and integrating modules of the system will effect the achievement of this ambition.

Before the coding, one must decide which language is to be used. Among the languages, COBOL was chosen to implement this general ledger system. There are many reasons for choosing COBOL to implement this project. The ability to handle vast amounts of data is one of the reasons for choosing COBOL. It permits data to be described precisely and in detail, thus allowing data to be accessed and manipulated at different levels. One of its benefits is that it can produce a large number of reports because it easily formats reports and edits information very quickly. Even though COBOL was created before the invention of structured programming, it still possible to use structured programming techniques with COBOL. The general ledger system is a business system which is the reason for the creation of COBOL. The above reasons prove that it is advantageous to use COBOL for coding this project.

Before implementing this system, I tried to test COBOL to make sure it was suitable to implement in this system. First, the screen driver was written to prove that the use of table and string functions of COBOL work well. Second, the file handling ability was tested. The index file was tested to check that it would suit the requirements of this particular system, which needs sequential and random files. After closing the sequential file, one can not append to the end of the file. This problem can be solved by using a temporary file. After the above testing, the use of COBOL was decided. During the design, the use of language for implementation was not considered. Thus, when using the COBOL to code, the control flags need to be considered for the PERFORM loops' condition.

As soon as the coding is begun the testing will start and will continue throughout the phase. The individual module tests can be processed in following categories: computational test and data handling test. The computational test verifies the quantitative accuracy of the result of the operation of the software. The data handling test ensures that the input data is properly ingested, the output data is stored in the proper location and format, and data conversions have been properly performed. The bad data is to be handled properly and the data discriminately discarded.

After the module-level testing proves successful, the modules will be connected to determine whether all the required functions are correct. Beside the detail tests on an individual module, testing for the interaction between the modules is necessary. Some errors may never occur before the interconnection of the modules and will be exposed in this test. The assembly and testing of modules is done in several ways. The method used for combining software components is described below.

For combining the modules, the incremental method is used.

1. code and test one module by itself;
2. add another module;
3. test and debug the combination;
4. repeat 2 and 3 steps until the process is completed.

The advantage of the incremental approach is that it focuses on the new errors. Those errors may be caused either by a defect in the most recently added component or by the new interaction between component and the rest of the system. Before adding new components to the system, those errors must be detected and rectified. This increases the reliability of the system.

The approach chosen to integrate these components is top-down. After referencing the design specification and design structure chart, coding was begun from the top of the hierarchy and the incremental method was used to test and integrate the components down to the lower levels. During the implementation of this approach, "stubs" are required. A 'stub' simulates the functions of a component subordinate to the component being tested. After the whole system is integrated, testing will continue to assure the system's reliability.

The module testing and integration were began with the main module. Then, the afferent modules were established. Thus, the input data can be accepted and used for the following added modules. The functions to accept the input were tested entirely. Only correct data can be accepted; the system will ask for reentry of the error data. The transform modules were integrated next. These modules handle and transform the inputted data. The general ledger file will not be processed unless the input data is in balance. The entered account file can not be cleaned unless it is used to update the general ledger file. The efferent modules were integrated last. The report generators were tested one by one. If the beginning and ending date for the audit trail is not correct, the audit trail will not be produced. So, the user will be asked to reenter the dates for the incorrect dates.

During testing, three categories of values were covered. They were normal value, boundary value, and illegal value. The normal value was used by normal procedures to simulate the realistic processes, the boundary value was used to test the limits of the data range, and the illegal value which had to be detected was handled properly. All the possible conditions were tested in order to find the possible bugs.

CHAPTER 6

CONCLUSION

This project was a very good opportunity for me to utilize the knowledge which I learned from the graduate level courses. The gathered experience will help me to know more about system development methodology. Following is my own opinion about problems which I encountered in this project.

In the analysis phase, the use of the Data Flow Diagram communicates with the user more easily. Experience tells that even those people who do not have any knowledge about computers, that with the use of Data Flow Diagram, the user can more easily understand. This is very important because most users do not have much computer background. Serving as a bridge between analyst and users, the Data Flow Diagram proves to be a good tool. It can help the analyst to understand the user's requirement explicitly.

During the analysis phase, the use of PSL/PSA to describe the system by referencing Data Flow Diagram is handy. The manuals of PSL/PSA are not easy to study and understand thoroughly. The best way to learn the PSL/PSA is through using it. Anytime there is a question in using it, the manuals can be referenced to find out the desired object's definition. The definition of PSL/PSA objects can be matched to the Data Flow Diagram very well.

In the design phase, the structure charts help to reach a better design. The reference table of interface is used to combine with the structure chart for easy reference. Also, it helps to determine the coupling between modules, which is one of the important criteria of design. It is a good idea to have the reference table added to the structure chart. This table allows the user to understand the whole page's modules without switching to another page for reference. Because I am both system designer and programmer the design did not have to go into extreme detail. If the design is given to another programmer, it may be good to have a very detailed design down to the bottom level. The definition of PDSL was not easy to match to the design structure chart. When a DATA STRUCTURE is used, the elements of this structure must be defined as global variables. Those elements can not be used as an interface, because the interface must not be a global variable. Thus, PDSL, for structure charts, is not as good as the PSL/PSA for the Data Flow Diagram.

In this project, it took two and one-half months for analysis, one and one-half months in design and another one and one-half months in coding and writing user's manual. It proved that putting more effort in the beginning of the system development will reduce the effort for the following phases. The most important benefit of putting more effort in the analysis is that the developed system will follow

the user's requirement better.

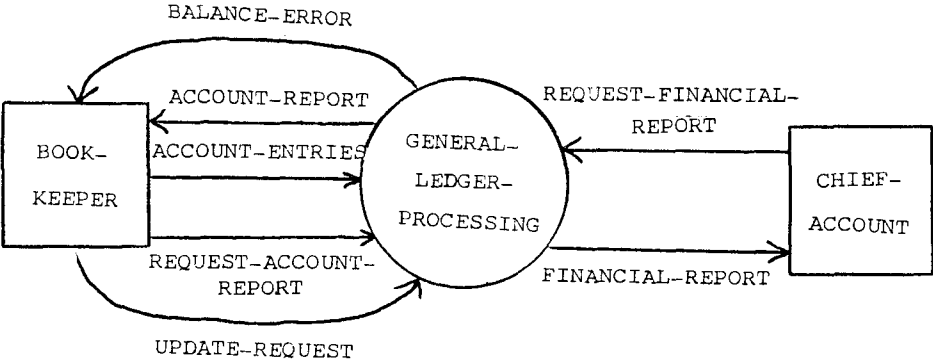
The software engineering methodology gives us the guidelines, which is the result of people's experience in developing large scale software system. Those guidelines lead to less errors for the system development. The major purpose of this project is to learn the use of those guidelines. Changing those guidelines to be one's own experience is the most important aspect.

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=====
APPENDIX A SPECIFICATION
=====

CONTEXT - DIAGRAM



UNIVERSITY OF MONTANA PSA/PSL

Name Selection

Parameters: DB=FINAL.DBF PRINT PUNCH=PSANAM.TMP
SELECTION='TRACE-KEY="level-c"' ORDER=BYTYPE

1	account-entries	INPUT
2	request-account-report	INPUT
3	request-financial-report	INPUT
4	update-request	INPUT
5	book-keeper	INTERFACE
6	chief-accountant	INTERFACE
7	account-report	OUTPUT
8	balance-error	OUTPUT
9	financial-report	OUTPUT
10	general-ledger-processing	PROCESS

UNIVERSITY OF MONTANA PSA/PSL

Formatted Problem Statement

Parameters: DB=FINAL.DBF FILE=PSANAM.TMP NOINDEX
NOPUNCHED-NAMES PRINT NOPUNCH SMARG=5 NMARG=20
AMARG=10 BMARG=25 RNMARG=59 CMARG=1 HMARG=40
ONE-PER-LINE COMMENT NONEW-PAGE NONEW-LINE
NOALL-STATEMENTS COMPLEMENTARY-STATEMENTS LINE-NUMBERS
PRINTEOF DLC-COMMENT NOSORT-NAME-LIST

```
1 DEFINE INPUT account-entries;
2 /* DATE OF LAST CHANGE - May 25, 1984, 00:01:07 */
3 SYNONYMS ARE: acc-es;
4 DESCRIPTION;
5 It contains the account-entry and adjust-account-entry
6 which are collected from other accounting systems or
7 the adjustment.;
8 TRACE-KEY IS: 'level-c';
9 GENERATED: BY book-keeper;
10 RECEIVED: BY general-ledger-processing;
11 SUBPARTS ARE: account-information,
12 account-entry,
13 adjust-account-entry;
14
15 DEFINE INPUT
16 request-account-report;
17 /* DATE OF LAST CHANGE - May 25, 1984, 00:01:07 */
18 SYNONYMS ARE: r-a-r;
19 DESCRIPTION;
20 This indicates the account reports requested.;
21 TRACE-KEY IS: 'level-c',
22 'level-0',
23 'level-3';
24 GENERATED: BY book-keeper;
25 RECEIVED: BY general-ledger-processing,
26 BY report-generator,
27 BY print-chart-of-account,
28 BY print-list-of-account-entries,
29 BY print-audit-trail;
30 CONSISTS OF:
31 request-audit-trail,
32 request-chart-of-acc,
33 request-list-of-acc-entries;
34
35 DEFINE INPUT
36 request-financial-report;
37 /* DATE OF LAST CHANGE - May 25, 1984, 00:01:07 */
38 SYNONYMS ARE: r-f-r;
39 DESCRIPTION;
40 This data indicates the requests on
41 the financial reports.;
42 TRACE-KEY IS: 'level-c',
43 'level-0',
44 'level-3',
```

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```
45      'level-3.2';
46  GENERATED:  BY chief-accountant;
47  RECEIVED:   BY general-ledger-processing,
48              BY report-generator,
49              BY print-financial-report,
50              BY print-ledger-sheet,
51              BY produce-trial-balance,
52              BY print-balance-sheet,
53              BY print-income-statement;
54  CONSISTS OF:
55      request-balance-sheet,
56      request-ledger-sheet,
57      request-income-statement,
58      request-trial-balance;
59
60  DEFINE INPUT                                update-request;
61      /* DATE OF LAST CHANGE - May 25, 1984, 00:01:07 */
62      SYNONYMS ARE:  u-r;
63      DESCRIPTION;
64  This request indicates the decision to make an update
65  to the general-ledger-file,close accounts at the end
66  of the year and clean the revenue and expense accounts
67  at end of period.;
68      TRACE-KEY IS:  'level-0',
69                    'level-c',
70                    'level-2';
71  GENERATED:  BY book-keeper;
72  RECEIVED:   BY general-ledger-processing,
73              BY account-update;
74  CONSISTS OF:
75      request-general-ledger-update,
76      request-end-of-year-close,
77      request-revenues-expense-clean;
78
79  DEFINE INTERFACE                            book-keeper;
80      /* DATE OF LAST CHANGE - May 25, 1984, 00:01:07 */
81      SYNONYMS ARE:  b-k;
82      DESCRIPTION;
83  The book-keeper collects accounts from payroll,
84  account receivable and account payable. He
85  inputs the accounts and adjusts the accounts.
86  He receives the ledger-sheet and
87  list-of-account-entries;
88      TRACE-KEY IS:  'level-c';
89  GENERATES:
90      update-request,
91      account-entries,
92      request-account-report,
93      account-entry,
94      account-information,
95      adjust-account-entry;
```

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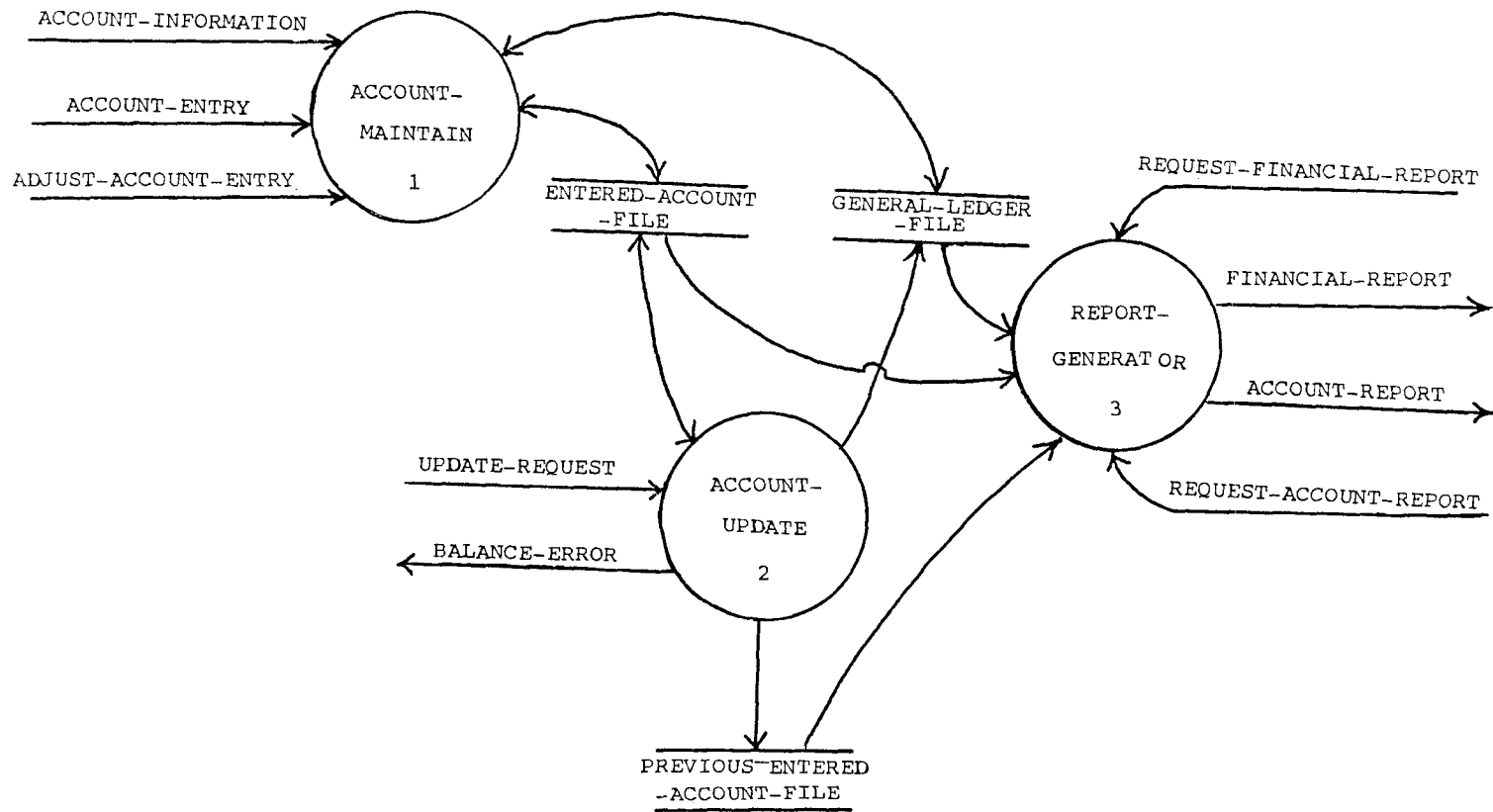
```

96     RECEIVES:
97         balance-error,
98         account-report,
99         audit-trail,
100        chart-of-account;
101
102 DEFINE INTERFACE                                chief-accountant;
103     /*     DATE OF LAST CHANGE - May 25, 1984, 00:01:07 */
104     SYNONYMS ARE:  c-ac;
105     DESCRIPTION;
106 He decides the kind of financial-reports
107 to be made. He also checks the Trial-Balance
108 for possible adjustments.;
109     TRACE-KEY IS:  'level-c';
110     GENERATES:
111         request-financial-report;
112     RECEIVES:
113         financial-report,
114         balance-sheet;
115
116 DEFINE OUTPUT                                    account-report;
117     /*     DATE OF LAST CHANGE - May 25, 1984, 00:01:07 */
118     SYNONYMS ARE:  acc-r;
119     DESCRIPTION;
120 The reports are for reference. It will be produced
121 according to the book keeper's request.;
122     TRACE-KEY IS:  'level-c',
123                   'level-0';
124     GENERATED:    BY general-ledger-processing,
125                   BY report-generator;
126     RECEIVED:     BY book-keeper;
127     SUBPARTS ARE: chart-of-account,
128                   list-of-account-entries,
129                   audit-trail;
130     DERIVED BY:   report-generator
131     USING:        general-ledger-file,
132                   entered-account-file,
133                   previous-entered-account-file;
134
135 DEFINE OUTPUT                                    balance-error;
136     /*     DATE OF LAST CHANGE - May 25, 1984, 00:01:07 */
137     SYNONYMS ARE:  b-err;
138     DESCRIPTION;
139 The output indicates the error message about
140 the inbalance of the accounts.;
141     TRACE-KEY IS:  'level-c',
142                   'level-0',
143                   'level-2';
144     GENERATED:    BY general-ledger-processing,
145                   BY account-update,
146                   BY update-general-ledger;
```

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```
147     RECEIVED:         BY book-keeper;
148
149 DEFINE OUTPUT                               financial-report;
150     /* DATE OF LAST CHANGE - May 25, 1984, 00:01:07 */
151     SYNONYMS ARE:  f-r;
152     DESCRIPTION;
153 These reports show the financial situation of a business.;
154     TRACE-KEY IS:  'level-c',
155                  'level-0',
156                  'level-3';
157     GENERATED:     BY general-ledger-processing,
158                  BY report-generator,
159                  BY print-financial-report;
160     RECEIVED:     BY chief-accountant;
161     SUBPARTS ARE:  balance-sheet,
162                  income-statement,
163                  trial-balance,
164                  ledger-sheet;
165     DERIVED BY:    report-generator
166     USING:         general-ledger-file;
167
168 DEFINE PROCESS
169 general-ledger-processing;
170     /* DATE OF LAST CHANGE - May 25, 1984, 00:01:07 */
171     SYNONYMS ARE:  g-l-p;
172     DESCRIPTION;
173 This process represents the complete
174 general-ledger-system.;
175     TRACE-KEY IS:  'level-c';
176     GENERATES:
177         account-report,
178         financial-report,
179         balance-error;
180     RECEIVES:
181         update-request,
182         account-entries,
183         request-account-report,
184         request-financial-report;
185     SUBPARTS ARE:  account-maintain,
186                  account-update,
187                  report-generator;
188
189 EOF EOF EOF EOF EOF
```

DIAGRAM - 0



UNIVERSITY OF MONTANA PSA/PSL

Name Selection

Parameters: DB=FINAL.DBF PRINT PUNCH=PSANAM.TMP
SELECTION='TRACE-KEY="level-0"' ORDER=BYTYPE

1	entered-account	ENTITY
2	general-ledger-account	ENTITY
3	previous-entered-account	ENTITY
4	account-entry	INPUT
5	account-information	INPUT
6	adjust-account-entry	INPUT
7	request-account-report	INPUT
8	request-financial-report	INPUT
9	update-request	INPUT
10	account-report	OUTPUT
11	balance-error	OUTPUT
12	financial-report	OUTPUT
13	account-maintain	PROCESS
14	account-update	PROCESS
15	report-generator	PROCESS
16	entered-account-file	SET
17	general-ledger-file	SET
18	previous-entered-account-file	SET

UNIVERSITY OF MONTANA PSA/PSL

Formatted Problem Statement

Parameters: DB=FINAL.DBF FILE=PSANAM.TMP NOINDEX
NOPUNCHED-NAMES PRINT NOPUNCH SMARG=5 NMARG=20
AMARG=10 BMARG=25 RNMARG=59 CMARG=1 HMARG=40
ONE-PER-LINE COMMENT NONEW-PAGE NONEW-LINE
NOALL-STATEMENTS COMPLEMENTARY-STATEMENTS LINE-NUMBERS
PRINTEOF DLC-COMMENT NOSORT-NAME-LIST

```
1 DEFINE ENTITY                                entered-account;
2     /* DATE OF LAST CHANGE - May 25, 1984, 00:01:07 */
3     SYNONYMS ARE: e-acc;
4     DESCRIPTION;
5     This is the entity of an entered-account-file
6     which contains the whole entered accounts and
7     adjusted accounts. It keeps the whole trail
8     for a period of the business.;
9     TRACE-KEY IS: 'level-0',
10                    'level-1',
11                    'level-2',
12                    'level-3',
13                    'level-3.2';
14     COLLECTED IN: entered-account-file;
15     CONSISTS OF:
16         journal-entry-number,
17         source-code,
18         account-number,
19         date-of-entry,
20         account-name,
21         value-of-account,
22         update-code;
23     ADDED TO:
24         entered-account-file
25         BY account-maintain;
26     ADDED TO:
27         entered-account-file
28         BY enter-account-entries;
29     ADDED TO:
30         entered-account-file
31         BY adjust-account-entries;
32     REFERENCED IN:
33         entered-account-file
34         BY adjust-account-entries;
35     REMOVED FROM:
36         entered-account-file
37         BY account-update;
38     REMOVED FROM:
39         entered-account-file
40         BY clean-old-entries;
41
42 DEFINE ENTITY
43 general-ledger-account;
44     /* DATE OF LAST CHANGE - May 25, 1984, 00:01:07 */
```

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```
45     SYNONYMS ARE:  g-l-acc;
46     DESCRIPTION;
47 This is an entity of general-ledger-file.
48 It keeps the all information about general
49 ledger account.;
50     TRACE-KEY IS:  'level-0',
51                   'level-1',
52                   'level-2',
53                   'level-3',
54                   'level-3.2';
55     COLLECTED IN:  general-ledger-file;
56     CONSISTS OF:
57         account-number,
58         account-name,
59         account-type,
60         current-total,
61         year-to-now-total,
62         previous-year-total;
63     IDENTIFIED BY: account-number;
64     ADDED TO:
65         general-ledger-file
66         BY          account-maintain;
67     ADDED TO:
68         general-ledger-file
69         BY          maintain-account-information;
70     MODIFIED IN:
71         general-ledger-file
72         BY          account-maintain;
73     MODIFIED IN:
74         general-ledger-file
75         BY          maintain-account-information;
76     REFERENCED IN:
77         general-ledger-file
78         BY          account-maintain;
79     REFERENCED IN:
80         general-ledger-file
81         BY          enter-account-entries;
82     REMOVED FROM:
83         general-ledger-file
84         BY          account-maintain;
85     REMOVED FROM:
86         general-ledger-file
87         BY          maintain-account-information;
88
89     DEFINE ENTITY
90     previous-entered-account;
91     /*  DATE OF LAST CHANGE - May 25, 1984, 00:01:07 */
92     SYNONYMS ARE:  p-e-a;
93     DESCRIPTION;
94 This is an entity of previous-entered-account-file
95 which keeps the trail for a fiscal year of business.
```

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```
96 It can be used to produce the audit-trail report.;
97 TRACE-KEY IS: 'level-0',
98               'level-2',
99               'level-3';
100 COLLECTED IN: previous-entered-account-file;
101 CONSISTS OF:
102     journal-entry-number,
103     account-number,
104     date-of-entry,
105     value-of-account;
106 ADDED TO:
107     previous-entered-account-file
108     BY account-update;
109 ADDED TO:
110     previous-entered-account-file
111     BY clean-old-entries;
112
113 DEFINE INPUT account-entry;
114     /* DATE OF LAST CHANGE - May 25, 1984, 00:01:07 */
115     SYNONYMS ARE: acc-e;
116     DESCRIPTION;
117 This data are collected from other accounting system
118 which is to be the input to the system.;
119 TRACE-KEY IS: 'level-0',
120               'level-1';
121 GENERATED: BY book-keeper;
122 RECEIVED: BY account-maintain,
123           BY enter-account-entries;
124 PART OF: account-entries;
125 CONSISTS OF:
126     account-number,
127     account-name,
128     source-code,
129     date-of-entry,
130     value-of-account;
131
132 DEFINE INPUT account-information;
133     /* DATE OF LAST CHANGE - May 25, 1984, 00:01:07 */
134     SYNONYMS ARE: a-i;
135     DESCRIPTION;
136 This data shows the added,deleted and modified
137 information on the general ledger account.;
138 TRACE-KEY IS: 'level-0',
139               'level-1';
140 GENERATED: BY book-keeper;
141 RECEIVED: BY account-maintain,
142           BY maintain-account-information;
143 PART OF: account-entries;
144 CONSISTS OF:
145     account-number,
146     account-name,
```

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```
147     account-type,
148     year-to-now-total,
149     current-total,
150     previous-year-total,
151     information-indicator;
152     USED BY:
153     account-maintain
154     TO MAINTAIN     general-ledger-file;
155     USED BY:
156     maintain-account-information
157     TO MAINTAIN     general-ledger-file;
158
159     DEFINE INPUT
160     adjust-account-entry;
161     /*     DATE OF LAST CHANGE - May 25, 1984, 00:01:07 */
162     SYNONYMS ARE:   ad-acc-e;
163     DESCRIPTION;
164     This data makes adjustments on accounts.;
165     TRACE-KEY IS:   'level-0',
166                   'level-1';
167     GENERATED:     BY book-keeper;
168     RECEIVED:       BY account-maintain,
169                   BY adjust-account-entries;
170     PART OF:        account-entries;
171     CONSISTS OF:
172     value-of-account,
173     source-code,
174     account-name,
175     account-number,
176     date-of-entry;
177
178     DEFINE INPUT
179     request-account-report;
180     /*     DATE OF LAST CHANGE - May 25, 1984, 00:01:07 */
181     SYNONYMS ARE:   r-a-r;
182     DESCRIPTION;
183     This indicates the account reports requested.;
184     TRACE-KEY IS:   'level-c',
185                   'level-0',
186                   'level-3';
187     GENERATED:     BY book-keeper;
188     RECEIVED:       BY general-ledger-processing,
189                   BY report-generator,
190                   BY print-chart-of-account,
191                   BY print-list-of-account-entries,
192                   BY print-audit-trail;
193     CONSISTS OF:
194     request-audit-trail,
195     request-chart-of-acc,
196     request-list-of-acc-entries;
197
```

UNIVERSITY OF MONTANA PSA/PSL
Formatted Problem Statement

```
198 DEFINE INPUT
199 request-financial-report;
200 /* DATE OF LAST CHANGE - May 25, 1984, 00:01:07 */
201 SYNONYMS ARE: r-f-r;
202 DESCRIPTION;
203 This data indicates the requests on
204 the financial reports.;
205 TRACE-KEY IS: 'level-c',
206                'level-0',
207                'level-3',
208                'level-3.2';
209 GENERATED:    BY chief-accountant;
210 RECEIVED:     BY general-ledger-processing,
211                BY report-generator,
212                BY print-financial-report,
213                BY print-ledger-sheet,
214                BY produce-trial-balance,
215                BY print-balance-sheet,
216                BY print-income-statement;
217 CONSISTS OF:
218     request-balance-sheet,
219     request-ledger-sheet,
220     request-income-statement,
221     request-trial-balance;
222
223 DEFINE INPUT                                update-request;
224 /* DATE OF LAST CHANGE - May 25, 1984, 00:01:07 */
225 SYNONYMS ARE: u-r;
226 DESCRIPTION;
227 This request indicates the decision to make an update
228 to the general-ledger-file,close accounts at the end
229 of the year and clean the revenue and expense accounts
230 at end of period.;
231 TRACE-KEY IS: 'level-0',
232                'level-c',
233                'level-2';
234 GENERATED:    BY book-keeper;
235 RECEIVED:     BY general-ledger-processing,
236                BY account-update;
237 CONSISTS OF:
238     request-general-ledger-update,
239     request-end-of-year-close,
240     request-revenues-expense-clean;
241
242 DEFINE OUTPUT                                account-report;
243 /* DATE OF LAST CHANGE - May 25, 1984, 00:01:07 */
244 SYNONYMS ARE: acc-r;
245 DESCRIPTION;
246 The reports are for reference. It will be produced
247 according to the book keeper's request.;
248 TRACE-KEY IS: 'level-c',
```

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```
249 'level-0';
250 GENERATED: BY general-ledger-processing,
251 BY report-generator;
252 RECEIVED: BY book-keeper;
253 SUBPARTS ARE: chart-of-account,
254 list-of-account-entries,
255 audit-trail;
256 DERIVED BY: report-generator
257 USING: general-ledger-file,
258 entered-account-file,
259 previous-entered-account-file;
260
261 DEFINE OUTPUT balance-error;
262 /* DATE OF LAST CHANGE - May 25, 1984, 00:01:07 */
263 SYNONYMS ARE: b-err;
264 DESCRIPTION;
265 The output indicates the error message about
266 the inbalance of the accounts.;
267 TRACE-KEY IS: 'level-c',
268 'level-0',
269 'level-2';
270 GENERATED: BY general-ledger-processing,
271 BY account-update,
272 BY update-general-ledger;
273 RECEIVED: BY book-keeper;
274
275 DEFINE OUTPUT financial-report;
276 /* DATE OF LAST CHANGE - May 25, 1984, 00:01:07 */
277 SYNONYMS ARE: f-r;
278 DESCRIPTION;
279 These reports show the financial situation of a business.;
280 TRACE-KEY IS: 'level-c',
281 'level-0',
282 'level-3';
283 GENERATED: BY general-ledger-processing,
284 BY report-generator,
285 BY print-financial-report;
286 RECEIVED: BY chief-accountant;
287 SUBPARTS ARE: balance-sheet,
288 income-statement,
289 trial-balance,
290 ledger-sheet;
291 DERIVED BY: report-generator
292 USING: general-ledger-file;
293
294 DEFINE PROCESS account-maintain;
295 /* DATE OF LAST CHANGE - May 25, 1984, 00:01:07 */
296 SYNONYMS ARE: a-m;
297 DESCRIPTION;
298 This process handles those things that relate
299 to the account information , account entry and
```

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```
300 adjust-account-entry .;
301 TRACE-KEY IS: 'level-0';
302 RECEIVES:
303     account-information,
304     adjust-account-entry,
305     account-entry;
306 SUBPARTS ARE: maintain-account-information,
307     enter-account-entries,
308     adjust-account-entries;
309 PART OF: general-ledger-processing;
310 ADDS: general-ledger-account TO
311     general-ledger-file;
312 ADDS: entered-account TO entered-account-file;
313 MAINTAINS: general-ledger-file
314 USING : account-information;
315 MODIFIES: general-ledger-account IN
316     general-ledger-file;
317 REFERENCES: general-ledger-account IN
318     general-ledger-file;
319 REMOVES: general-ledger-account FROM
320     general-ledger-file;
321
322 DEFINE PROCESS account-update;
323 /* DATE OF LAST CHANGE - May 25, 1984, 00:01:07 */
324 SYNONYMS ARE: a-u;
325 DESCRIPTION;
326 This process uses the entered-account-file
327 to update the general-ledger-file at the end
328 of the period. It cleans the entered-account-file
329 and also appends to the previous-entered-account-
330 file. It also cleans the revenues and expense
331 accounts at the end of a period. At the end of
332 a year , it will close the accounts.;
333 TRACE-KEY IS: 'level-0';
334 GENERATES:
335     balance-error;
336 RECEIVES:
337     update-request;
338 SUBPARTS ARE: update-general-ledger,
339     clean-old-entries,
340     end-of-year-update,
341     clean-revenues-expense;
342 PART OF: general-ledger-processing;
343 ADDS: previous-entered-account TO
344     previous-entered-account-file;
345 REMOVES: entered-account FROM
346     entered-account-file;
347 UPDATES: general-ledger-file
348 USING: entered-account-file;
349
350 DEFINE PROCESS report-generator;
```


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```
351 /* DATE OF LAST CHANGE - May 25, 1984, 00:01:07 */
352 SYNONYMS ARE: r-g;
353 DESCRIPTION;
354 This process generates the financial-report and
355 account-report,when requested.;
356 TRACE-KEY IS: 'level-0';
357 GENERATES:
358     financial-report,
359     account-report,
360     audit-trail,
361     chart-of-account,
362     list-of-account-entries;
363 RECEIVES:
364     request-financial-report,
365     request-account-report;
366 SUBPARTS ARE: print-chart-of-account,
367               print-financial-report,
368               print-list-of-account-entries,
369               print-audit-trail;
370 PART OF:     general-ledger-processing;
371 DERIVES:     financial-report
372 USING:       general-ledger-file;
373 DERIVES:     account-report
374 USING:       general-ledger-file,
375               entered-account-file,
376               previous-entered-account-file;
377
378 DEFINE SET
379 entered-account-file;
380 /* DATE OF LAST CHANGE - May 25, 1984, 00:01:07 */
381 SYNONYMS ARE: e-t-f;
382 DESCRIPTION;
383 This file contains the whole entered accounts and
384 adjusted accounts. It keeps the whole trail for a
385 period of the business. It will be used to update
386 the general-ledger-file and append to the
387 previous-entered-account-file.;
388 TRACE-KEY IS: 'level-0',
389               'level-1',
390               'level-2',
391               'level-3',
392               'level-3.2';
393 COLLECTION OF:
394     entered-account;
395 HAS: entered-account
396     ADDED BY     account-maintain;
397 HAS: entered-account
398     ADDED BY     enter-account-entries;
399 HAS: entered-account
400     ADDED BY     adjust-account-entries;
401 USED BY:
```

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```
402         report-generator
403         TO DERIVE         account-report;
404     USED BY:
405         print-list-of-account-entries
406         TO DERIVE         list-of-account-entries;
407     USED BY:
408         print-ledger-sheet
409         TO DERIVE         ledger-sheet;
410     USED BY:
411         produce-trial-balance
412         TO DERIVE         trial-balance;
413     HAS: entered-account
414         REFERENCED BY adjust-account-entries;
415     HAS: entered-account
416         REMOVED BY         account-update;
417     HAS: entered-account
418         REMOVED BY         clean-old-entries;
419     USED BY:
420         account-update
421         TO UPDATE         general-ledger-file;
422     USED BY:
423         update-general-ledger
424         TO UPDATE         general-ledger-file;
425     EMPLOYED BY:         clean-old-entries;
426
427     DEFINE SET                                     general-ledger-file;
428         /* DATE OF LAST CHANGE - May 25, 1984, 00:01:07 */
429         SYNONYMS ARE:         g-l-f;
430         DESCRIPTION;
431     This file contains ledger,total,title and heading
432     accounts. It keeps the all information about
433     general ledger account. So, It always is in balance.
434     It is used to produced the financial reports.;
435     TRACE-KEY IS:         'level-0',
436                           'level-1',
437                           'level-2',
438                           'level-3',
439                           'level-3.2';
440     COLLECTION OF:
441         general-ledger-account;
442     ORDERED BY:         account-number;
443     HAS: general-ledger-account
444         ADDED BY         account-maintain;
445     HAS: general-ledger-account
446         ADDED BY         maintain-account-information;
447     USED BY:
448         report-generator
449         TO DERIVE         financial-report;
450     USED BY:
451         report-generator
452         TO DERIVE         account-report;
```

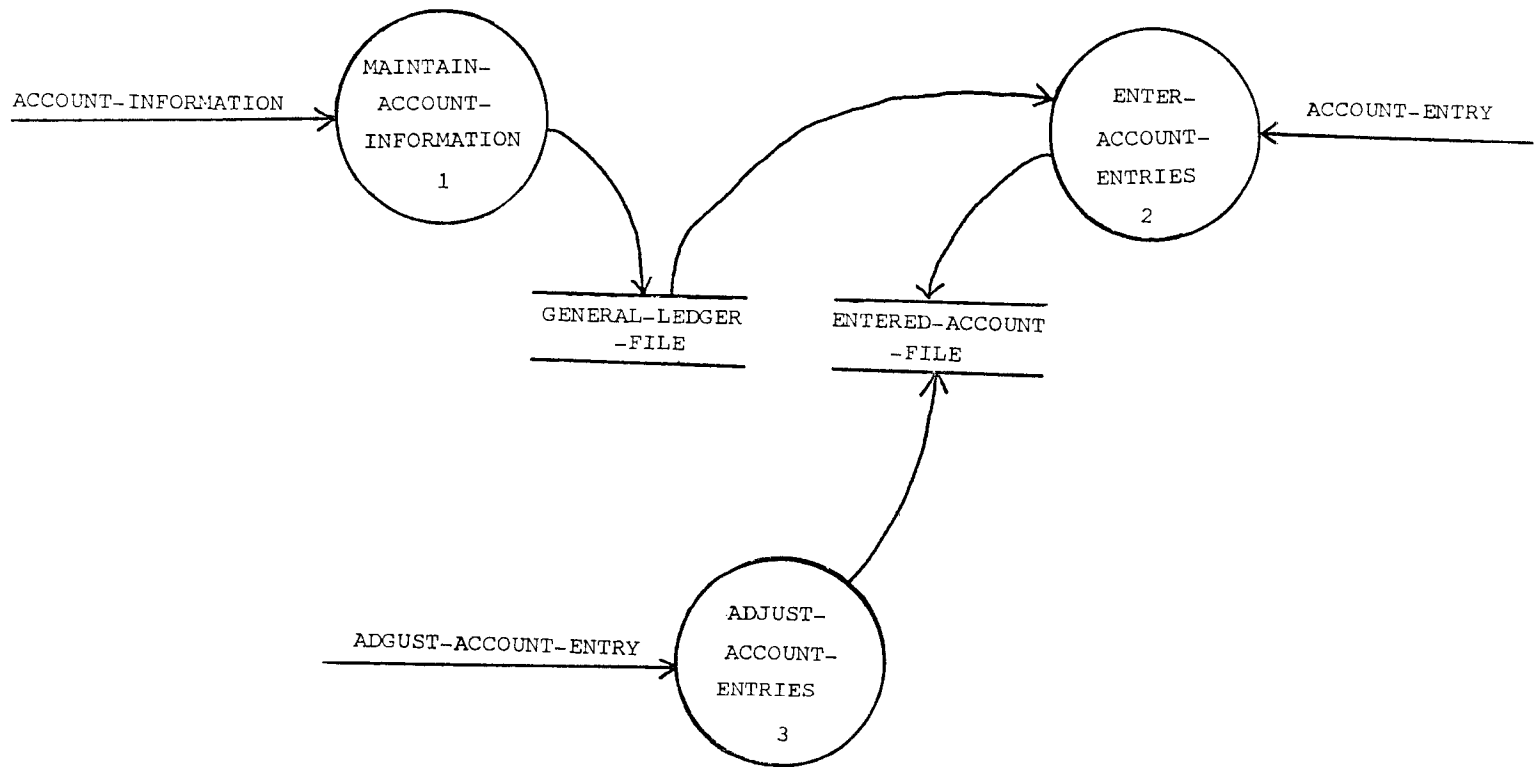
```
453     USED BY:
454         print-chart-of-account
455         TO DERIVE      chart-of-account;
456     USED BY:
457         print-ledger-sheet
458         TO DERIVE      ledger-sheet;
459     USED BY:
460         produce-trial-balance
461         TO DERIVE      trial-balance;
462     USED BY:
463         print-balance-sheet
464         TO DERIVE      balance-sheet;
465     USED BY:
466         print-income-statement
467         TO DERIVE      income-statement;
468     MAINTAINED BY: account-maintain
469     USING :      account-information;
470     MAINTAINED BY: maintain-account-information
471     USING :      account-information;
472     HAS: general-ledger-account
473         MODIFIED BY  account-maintain;
474     HAS: general-ledger-account
475         MODIFIED BY  maintain-account-information;
476     HAS: general-ledger-account
477         REFERENCED BY account-maintain;
478     HAS: general-ledger-account
479         REFERENCED BY enter-account-entries;
480     HAS: general-ledger-account
481         REMOVED BY   account-maintain;
482     HAS: general-ledger-account
483         REMOVED BY   maintain-account-information;
484     UPDATED BY:   account-update
485     USING:        entered-account-file;
486     UPDATED BY:   update-general-ledger
487     USING:        entered-account-file;
488     UPDATED BY:   clean-revenues-expense;
489     UPDATED BY:   end-of-year-update;
490
491 DEFINE SET
492 previous-entered-account-file;
493     /* DATE OF LAST CHANGE - May 25, 1984, 00:01:07 */
494     SYNONYMS ARE: p-e-a-f;
495     DESCRIPTION;
496 This file keeps the trail for a fiscal year
497 of business. It can be used to produce the
498 audit-trail report.;
499     TRACE-KEY IS: 'level-0',
500                  'level-2',
501                  'level-3';
502     COLLECTION OF:
503         previous-entered-account;
```

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504 HAS: previous-entered-account
505 ADDED BY account-update;
506 HAS: previous-entered-account
507 ADDED BY clean-old-entries;
508 USED BY:
509 report-generator
510 TO DERIVE account-report;
511 USED BY:
512 print-audit-trail
513 TO DERIVE audit-trail;
514
515 EOF EOF EOF EOF EOF

DIAGRAM - 1



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Name Selection

Parameters: DB=FINAL.DBF PRINT PUNCH=PSANAM.TMP
SELECTION='TRACE-KEY="level-1"' ORDER=BYTYPE

1	account-name	ELEMENT
2	account-type	ELEMENT
3	category-number	ELEMENT
4	current-total	ELEMENT
5	day	ELEMENT
6	information-indicator	ELEMENT
7	journal-entry-number	ELEMENT
8	month	ELEMENT
9	previous-year-total	ELEMENT
10	source-code	ELEMENT
11	subcategory-number	ELEMENT
12	update-code	ELEMENT
13	value-of-account	ELEMENT
14	year-to-now-total	ELEMENT
15	entered-account	ENTITY
16	general-ledger-account	ENTITY
17	account-number	GROUP
18	date-of-entry	GROUP
19	account-entry	INPUT
20	account-information	INPUT
21	adjust-account-entry	INPUT
22	adjust-account-entries	PROCESS
23	enter-account-entries	PROCESS
24	maintain-account-information	PROCESS
25	entered-account-file	SET
26	general-ledger-file	SET

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Parameters: DB=FINAL.DBF FILE=PSANAM.TMP NOINDEX
NOPUNCHED-NAMES PRINT NOPUNCH SMARG=5 NMARG=20
AMARG=10 BMARG=25 RNMARG=59 CMARG=1 HMARG=40
ONE-PER-LINE COMMENT NONEW-PAGE NONEW-LINE
NOALL-STATEMENTS COMPLEMENTARY-STATEMENTS LINE-NUMBERS
PRINTEOF DLC-COMMENT NOSORT-NAME-LIST

```
1 DEFINE ELEMENT account-name;
2 /* DATE OF LAST CHANGE - May 25, 1984, 00:01:07 */
3 SYNONYMS ARE: acc-n;
4 DESCRIPTION;
5 It is a description of each of the
6 general-ledger-account.
7 It will not more than 30 characters.;
8 TRACE-KEY IS: 'level-3',
9 'level-3.2',
10 'level-2',
11 'level-1';
12 CONTAINED IN: entered-account,
13 general-ledger-account,
14 account-entry,
15 account-information,
16 adjust-account-entry;
17
18 DEFINE ELEMENT account-type;
19 /* DATE OF LAST CHANGE - May 25, 1984, 00:01:07 */
20 SYNONYMS ARE: acc-ty;
21 DESCRIPTION;
22 This element distinguishes the types of
23 general-ledger-accounts . The four different
24 types of accounts are 0)regular 1)title
25 2)total 3)heading.;
26 TRACE-KEY IS: 'level-3',
27 'level-3.2',
28 'level-2',
29 'level-1';
30 CONTAINED IN: general-ledger-account,
31 account-information;
32 VALUES ARE:
33 0 THRU 3;
34
35 DEFINE ELEMENT category-number;
36 /* DATE OF LAST CHANGE - May 25, 1984, 00:01:07 */
37 SYNONYMS ARE: ca-nb;
38 DESCRIPTION;
39 The category number identifies groups,
40 1)assests 2)liabilities 3)income 4) expense,
41 of a general-ledger-file.;
42 TRACE-KEY IS: 'level-3',
43 'level-3.2',
44 'level-2',
```

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```
45         'level-1';
46     CONTAINED IN:  account-number;
47     VALUES ARE:
48         1 THRU           4;
49
50 DEFINE ELEMENT                                current-total;
51     /*     DATE OF LAST CHANGE - May 25, 1984, 00:01:07 */
52     SYNONYMS ARE:  cu-to;
53     DESCRIPTION;
54 It indicates the current amount of account.;
55     TRACE-KEY IS:  'level-3',
56                   'level-3.2',
57                   'level-2',
58                   'level-1';
59     CONTAINED IN:  general-ledger-account,
60                   account-information;
61     VALUES ARE:
62         -100000000.000000
63         THRU           100000000.000000;
64
65 DEFINE ELEMENT                                day;
66     /*     DATE OF LAST CHANGE - May 25, 1984, 00:01:07 */
67     SYNONYMS ARE:  d;
68     DESCRIPTION;
69 It indicates the day in a month.;
70     TRACE-KEY IS:  'level-3',
71                   'level-3.2',
72                   'level-2',
73                   'level-1';
74     CONTAINED IN:  date-of-entry;
75     VALUES ARE:
76         1 THRU           31;
77
78 DEFINE ELEMENT
79 information-indicator;
80     /*     DATE OF LAST CHANGE - May 25, 1984, 00:01:07 */
81     SYNONYMS ARE:  in-id;
82     DESCRIPTION;
83 It indicates the types of information.
84 1) add account 2) delete account 3) modify account.;
85     TRACE-KEY IS:  'level-1';
86     CONTAINED IN:  account-information;
87     VALUES ARE:
88         1 THRU           3;
89
90 DEFINE ELEMENT
91 journal-entry-number;
92     /*     DATE OF LAST CHANGE - May 25, 1984, 00:01:07 */
93     SYNONYMS ARE:  j-e-n;
94     DESCRIPTION;
95 It keeps a sequence number to identify the
```


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```
96 account entered for a fiscal year.;
97   TRACE-KEY IS:  'level-3',
98                  'level-3.2',
99                  'level-2',
100                 'level-1';
101   CONTAINED IN: entered-account,
102                 previous-entered-account;
103   VALUES ARE:
104     1 THRU      999999;
105
106 DEFINE ELEMENT                                month;
107   /* DATE OF LAST CHANGE - May 25, 1984, 00:01:07 */
108   SYNONYMS ARE:  m;
109   DESCRIPTION;
110 It indicates the month in a year.;
111   TRACE-KEY IS:  'level-3',
112                  'level-3.2',
113                  'level-2',
114                  'level-1';
115   CONTAINED IN:  date-of-entry;
116   VALUES ARE:
117     1 THRU      12;
118
119 DEFINE ELEMENT                                previous-year-total;
120   /* DATE OF LAST CHANGE - May 25, 1984, 00:01:07 */
121   SYNONYMS ARE:  p-y-to;
122   DESCRIPTION;
123 It keeps the previous year account amount.;
124   TRACE-KEY IS:  'level-3',
125                  'level-3.2',
126                  'level-2',
127                  'level-1';
128   CONTAINED IN:  general-ledger-account,
129                 account-information;
130   VALUES ARE:
131     -100000000.000000
132     THRU      100000000.000000;
133
134 DEFINE ELEMENT                                source-code;
135   /* DATE OF LAST CHANGE - May 25, 1984, 00:01:07 */
136   SYNONYMS ARE:  s-c;
137   DESCRIPTION;
138 It indicates which system the accounts come from:
139 (1) the account receivable system
140 (2) the account payable system
141 (3) the payroll system
142 (4) the adjustment entry.;
143   TRACE-KEY IS:  'level-1',
144                  'level-2',
145                  'level-3',
146                  'level-3.2';
```

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```
147     CONTAINED IN: entered-account,
148                   account-entry,
149                   adjust-account-entry;
150     VALUES ARE:
151         1 THRU           4;
152
153 DEFINE ELEMENT                                subcategory-number;
154     /* DATE OF LAST CHANGE - May 25, 1984, 00:01:07 */
155     SYNONYMS ARE: su-nb;
156     DESCRIPTION;
157     It is an extension to the category number
158     which is a part of account number.;
159     TRACE-KEY IS: 'level-3',
160                   'level-3.2',
161                   'level-2',
162                   'level-1';
163     CONTAINED IN: account-number;
164     VALUES ARE:
165         0 THRU           99999;
166
167 DEFINE ELEMENT                                update-code;
168     /* DATE OF LAST CHANGE - May 25, 1984, 00:01:07 */
169     SYNONYMS ARE: up-c;
170     DESCRIPTION;
171     It indicates the entered-account-record is used
172     to update the general-ledger-file or not.
173     1) when the entered-account-record is not used to
174         update the general-ledger-file yet.
175     2) when the entered-account-record
176         was used to update the general-ledger-file.;
177     TRACE-KEY IS: 'level-3',
178                   'level-3.2',
179                   'level-2',
180                   'level-1';
181     CONTAINED IN: entered-account;
182
183 DEFINE ELEMENT                                value-of-account;
184     /* DATE OF LAST CHANGE - May 25, 1984, 00:01:07 */
185     SYNONYMS ARE: v-o-acc;
186     DESCRIPTION;
187     This element represents the amount in each account.;
188     TRACE-KEY IS: 'level-3',
189                   'level-3.2',
190                   'level-2',
191                   'level-1';
192     CONTAINED IN: entered-account,
193                   previous-entered-account,
194                   account-entry,
195                   adjust-account-entry;
196     VALUES ARE:
197         -100000000.000000
```

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```
198          THRU          100000000.000000;
199
200 DEFINE ELEMENT                      year-to-now-total;
201 /* DATE OF LAST CHANGE - May 25, 1984, 00:01:07 */
202     SYNONYMS ARE:  y-t-n-t;
203     DESCRIPTION;
204 This element is part of the general-ledger account.
205 It is used to put the year to the now value for
206 the revenues and the expense accounts.;
207     TRACE-KEY IS:  'level-3',
208                   'level-3.2',
209                   'level-2',
210                   'level-1';
211     CONTAINED IN:  general-ledger-account,
212                   account-information;
213     VALUES ARE:
214         -100000000.000000
215         THRU          100000000.000000;
216
217 DEFINE ENTITY                      entered-account;
218 /* DATE OF LAST CHANGE - May 25, 1984, 00:01:07 */
219     SYNONYMS ARE:  e-acc;
220     DESCRIPTION;
221 This is the entity of an entered-account-file
222 which contains the whole entered accounts and
223 adjusted accounts. It keeps the whole trail
224 for a period of the business.;
225     TRACE-KEY IS:  'level-0',
226                   'level-1',
227                   'level-2',
228                   'level-3',
229                   'level-3.2';
230     COLLECTED IN:  entered-account-file;
231     CONSISTS OF:
232         journal-entry-number,
233         source-code,
234         account-number,
235         date-of-entry,
236         account-name,
237         value-of-account,
238         update-code;
239     ADDED TO:
240         entered-account-file
241         BY          account-maintain;
242     ADDED TO:
243         entered-account-file
244         BY          enter-account-entries;
245     ADDED TO:
246         entered-account-file
247         BY          adjust-account-entries;
248     REFERENCED IN:
```

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```
249     entered-account-file
250     BY          adjust-account-entries;
251  REMOVED FROM:
252     entered-account-file
253     BY          account-update;
254  REMOVED FROM:
255     entered-account-file
256     BY          clean-old-entries;
257
258  DEFINE ENTITY
259  general-ledger-account;
260     /*  DATE OF LAST CHANGE - May 25, 1984, 00:01:07 */
261     SYNONYMS ARE:  g-l-acc;
262     DESCRIPTION;
263  This is an entity of general-ledger-file.
264  It keeps the all information about general
265  ledger account.;
266     TRACE-KEY IS:  'level-0',
267                   'level-1',
268                   'level-2',
269                   'level-3',
270                   'level-3.2';
271     COLLECTED IN:  general-ledger-file;
272     CONSISTS OF:
273         account-number,
274         account-name,
275         account-type,
276         current-total,
277         year-to-now-total,
278         previous-year-total;
279     IDENTIFIED BY: account-number;
280     ADDED TO:
281         general-ledger-file
282         BY          account-maintain;
283     ADDED TO:
284         general-ledger-file
285         BY          maintain-account-information;
286     MODIFIED IN:
287         general-ledger-file
288         BY          account-maintain;
289     MODIFIED IN:
290         general-ledger-file
291         BY          maintain-account-information;
292     REFERENCED IN:
293         general-ledger-file
294         BY          account-maintain;
295     REFERENCED IN:
296         general-ledger-file
297         BY          enter-account-entries;
298     REMOVED FROM:
299         general-ledger-file
```

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```
300          BY          account-maintain;
301  REMOVED FROM:
302          general-ledger-file
303          BY          maintain-account-information;
304
305 DEFINE GROUP          account-number;
306     /* DATE OF LAST CHANGE - May 25, 1984, 00:01:07 */
307     SYNONYMS ARE:  acc-nb;
308     DESCRIPTION;
309     It identifies a particular account in the
310     general-ledger-file. It contains the category
311     and sub-category numbers.;
312     TRACE-KEY IS:  'level-3',
313                   'level-3.2',
314                   'level-2',
315                   'level-1';
316     CONSISTS OF:
317         category-number,
318         subcategory-number;
319     CONTAINED IN:  entered-account,
320                   general-ledger-account,
321                   previous-entered-account,
322                   account-entry,
323                   account-information,
324                   adjust-account-entry;
325     IDENTIFIES:   general-ledger-account;
326     ORDERS:       general-ledger-file;
327
328 DEFINE GROUP          date-of-entry;
329     /* DATE OF LAST CHANGE - May 25, 1984, 00:01:07 */
330     SYNONYMS ARE:  d-of-e;
331     DESCRIPTION;
332     This element represents the date of making an entry.;
333     TRACE-KEY IS:  'level-3',
334                   'level-3.2',
335                   'level-2',
336                   'level-1';
337     CONSISTS OF:
338         day,
339         month;
340     CONTAINED IN:  entered-account,
341                   previous-entered-account,
342                   account-entry,
343                   adjust-account-entry;
344
345 DEFINE INPUT          account-entry;
346     /* DATE OF LAST CHANGE - May 25, 1984, 00:01:07 */
347     SYNONYMS ARE:  acc-e;
348     DESCRIPTION;
349     This data are collected from other accounting system
350     which is to be the input to the system.;
```

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```
351 TRACE-KEY IS: 'level-0',
352                'level-1';
353 GENERATED:    BY book-keeper;
354 RECEIVED:     BY account-maintain,
355                BY enter-account-entries;
356 PART OF:      account-entries;
357 CONSISTS OF:
358     account-number,
359     account-name,
360     source-code,
361     date-of-entry,
362     value-of-account;
363
364 DEFINE INPUT                                account-information;
365     /* DATE OF LAST CHANGE - May 25, 1984, 00:01:07 */
366     SYNONYMS ARE: a-i;
367     DESCRIPTION;
368 This data shows the added,deleted and modified
369 information on the general ledger account.;
370 TRACE-KEY IS: 'level-0',
371                'level-1';
372 GENERATED:    BY book-keeper;
373 RECEIVED:     BY account-maintain,
374                BY maintain-account-information;
375 PART OF:      account-entries;
376 CONSISTS OF:
377     account-number,
378     account-name,
379     account-type,
380     year-to-now-total,
381     current-total,
382     previous-year-total,
383     information-indicator;
384 USED BY:
385     account-maintain
386     TO MAINTAIN  general-ledger-file;
387 USED BY:
388     maintain-account-information
389     TO MAINTAIN  general-ledger-file;
390
391 DEFINE INPUT
392 adjust-account-entry;
393     /* DATE OF LAST CHANGE - May 25, 1984, 00:01:07 */
394     SYNONYMS ARE: ad-acc-e;
395     DESCRIPTION;
396 This data makes adjustments on accounts.;
397 TRACE-KEY IS: 'level-0',
398                'level-1';
399 GENERATED:    BY book-keeper;
400 RECEIVED:     BY account-maintain,
401                BY adjust-account-entries;
```

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```
402 PART OF: account-entries;
403 CONSISTS OF:
404 value-of-account,
405 source-code,
406 account-name,
407 account-number,
408 date-of-entry;
409
410 DEFINE PROCESS
411 adjust-account-entries;
412 /* DATE OF LAST CHANGE - May 25, 1984, 00:01:07 */
413 SYNONYMS ARE: a-a-e;
414 DESCRIPTION;
415 This process receives the adjust-account-entries
416 to update or add to the entered-account-file.;
417 TRACE-KEY IS: 'level-1';
418 RECEIVES:
419 adjust-account-entry;
420 PART OF: account-maintain;
421 ADDS: entered-account TO entered-account-file;
422 REFERENCES: entered-account IN entered-account-file;
423 PROCEDURE;
424 *****
425 TAKE the next journal-entry-number value.
426 REPEAT the following :
427 take the NEXT adjust-account-entry.
428 IF adjust-account-entry is valid,
429 THEN ,
430 MOVE the corresponding fileds from
431 adjust-account-entry to entered-account.
432 MOVE the journal-entry-number to
433 entered-account.
434 WRITE the entered-account to the end of
435 the entered-account-file.
436 INCREASE the journal-entry-number by 1.
437 OTHERWISE,
438 display 'input invalid' message.
439 UNTIL there are no more adjust-account-entry.
440 *****
441 ;
442
443 DEFINE PROCESS
444 enter-account-entries;
445 /* DATE OF LAST CHANGE - May 25, 1984, 00:01:07 */
446 SYNONYMS ARE: e-a-e;
447 DESCRIPTION;
448 This process receives the account-entries and
449 creates the entered-account-file by using the
450 valid account-entry.;
451 TRACE-KEY IS: 'level-1';
452 RECEIVES:
```

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```
453     account-entry;
454     PART OF:     account-maintain;
455     ADDS:        entered-account TO entered-account-file;
456     REFERENCES:  general-ledger-account IN
457                 general-ledger-file;
458     PROCEDURE;
459     *****
460     TAKE the next journal-entry-number value.
461     REPEAT the following:
462     TAKE the next account-entry.
463     IF account-entry is valid,
464     THEN ,
465     SEARCH general-ledger-file for matching
466     account-number and account-type='regular',
467     IF found,
468     THEN,
469     MOVE corresponding fields from
470     account-entry to entered-account.
471     MOVE the journal-entry-number to
472     entered-account.
473     WRITE account-entry to end of
474     entered-account-file.
475     INCREASE the journal-entry-number by 1.
476     OTHERWISE,
477     DISPLAY 'acc-no. not exist' or 'acc-type
478     is not regular'.
479     OTHERWISE,
480     DISPLAY 'acc-entry invalid'.
481     UNTIL there are no more acc-entry.
482     *****
483 ;
484
485 DEFINE PROCESS
486 maintain-account-information;
487     /* DATE OF LAST CHANGE - May 25, 1984, 00:01:07 */
488     SYNONYMS ARE:  m-a-i;
489     DESCRIPTION;
490     This process maintains the general-ledger-file.
491     It adds, deletes and modifies the account in the
492     general-ledger-file;
493     TRACE-KEY IS:  'level-1';
494     RECEIVES:
495     account-information;
496     PART OF:     account-maintain;
497     ADDS:        general-ledger-account TO
498                 general-ledger-file;
499     MAINTAINS:   general-ledger-file
500     USING :      account-information;
501     MODIFIES:    general-ledger-account IN
502                 general-ledger-file;
503     REMOVES:     general-ledger-account FROM
```


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```
504         general-ledger-file;
505     PROCEDURE;
506     *****
507 REPEAT the following:
508     TAKE the next account-information.
509     IF account-information is valid,
510     THEN,
511         SELECT the case which applies:
512         CASE1: (information-indicator is 'add')
513             SEARCH general-ledger-file for matching
514                 account-number.
515             IF found,
516                 DISPLAY 'account exist already'.
517             OTHERWISE,
518                 MOVE corresponding fields from
519                     account-information
520                     to general-ledger-account.
521                 ADD general-ledger-account to
522                     general-ledger-file.
523         CASE2: (information-indicator is 'delete')
524             SEARCH general-ledger-file for matching
525                 account-number.
526             IF found ,
527                 THEN,
528                     IF amount in general-ledger-account
529                         of that account-number equal zero,
530                         DELETE the general-ledger-account
531                         from general-ledger-file.
532                     OTHERWISE,
533                         DISPLAY 'the account value is not
534                             zero, can't be delete '.
535                     OTHERWISE,
536                         DISPLAY 'account not found'.
537         CASE3: (information-indicator is 'modify')
538             SEARCH general-ledger-file for matching
539                 account-number.
540             IF found,
541                 THEN,
542                     UPDATE the corresponding field of
543                         general-ledger-account USING
544                             account-information.
545                     OTHERWISE,
546                         DISPLAY 'account not found'.
547             OTHERWISE,
548                 DISPLAY 'account-information invalid'.
549 UNTIL there are no more account-information.
550     *****
551 ;
552
553 DEFINE SET
554 entered-account-file;
```

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```
555 /* DATE OF LAST CHANGE - May 25, 1984, 00:01:07 */
556 SYNONYMS ARE: e-t-f;
557 DESCRIPTION;
558 This file contains the whole entered accounts and
559 adjusted accounts. It keeps the whole trail for a
560 period of the business. It will be used to update
561 the general-ledger-file and append to the
562 previous-entered-account-file.;
563 TRACE-KEY IS: 'level-0',
564               'level-1',
565               'level-2',
566               'level-3',
567               'level-3.2';
568 COLLECTION OF:
569     entered-account;
570 HAS: entered-account
571     ADDED BY     account-maintain;
572 HAS: entered-account
573     ADDED BY     enter-account-entries;
574 HAS: entered-account
575     ADDED BY     adjust-account-entries;
576 USED BY:
577     report-generator
578     TO DERIVE    account-report;
579 USED BY:
580     print-list-of-account-entries
581     TO DERIVE    list-of-account-entries;
582 USED BY:
583     print-ledger-sheet
584     TO DERIVE    ledger-sheet;
585 USED BY:
586     produce-trial-balance
587     TO DERIVE    trial-balance;
588 HAS: entered-account
589     REFERENCED BY adjust-account-entries;
590 HAS: entered-account
591     REMOVED BY    account-update;
592 HAS: entered-account
593     REMOVED BY    clean-old-entries;
594 USED BY:
595     account-update
596     TO UPDATE    general-ledger-file;
597 USED BY:
598     update-general-ledger
599     TO UPDATE    general-ledger-file;
600 EMPLOYED BY:    clean-old-entries;
601
602 DEFINE SET                                general-ledger-file;
603 /* DATE OF LAST CHANGE - May 25, 1984, 00:01:07 */
604 SYNONYMS ARE: g-l-f;
605 DESCRIPTION;
```

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606 This file contains ledger, total, title and heading
607 accounts. It keeps the all information about
608 general ledger account. So, It always is in balance.
609 It is used to produced the financial reports.;

610 TRACE-KEY IS: 'level-0',
611 'level-1',
612 'level-2',
613 'level-3',
614 'level-3.2';

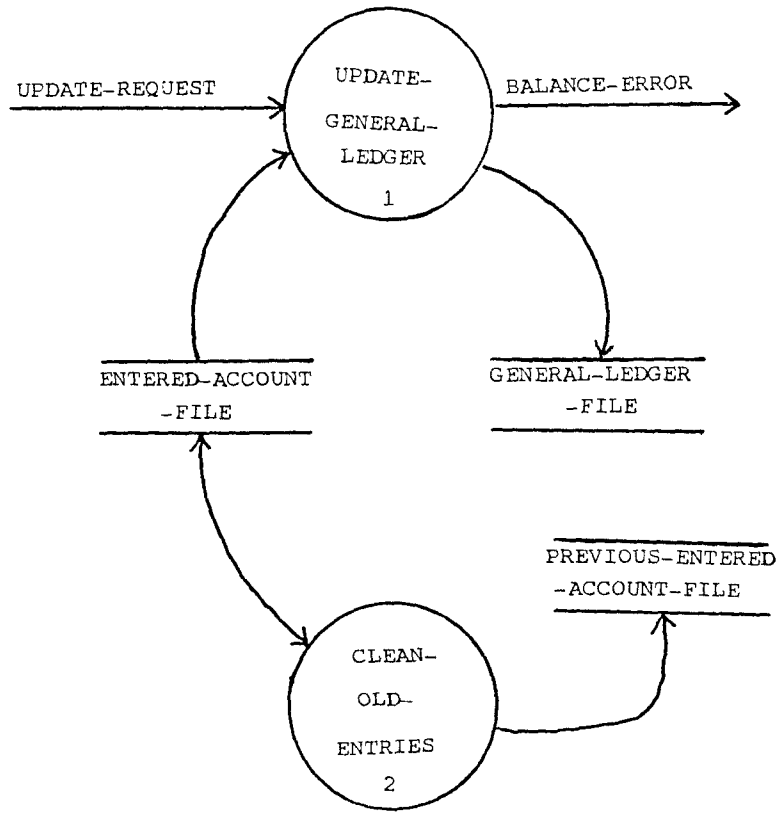
615 COLLECTION OF:
616 general-ledger-account;
617 ORDERED BY: account-number;
618 HAS: general-ledger-account
619 ADDED BY account-maintain;
620 HAS: general-ledger-account
621 ADDED BY maintain-account-information;
622 USED BY:
623 report-generator
624 TO DERIVE financial-report;
625 USED BY:
626 report-generator
627 TO DERIVE account-report;
628 USED BY:
629 print-chart-of-account
630 TO DERIVE chart-of-account;
631 USED BY:
632 print-ledger-sheet
633 TO DERIVE ledger-sheet;
634 USED BY:
635 produce-trial-balance
636 TO DERIVE trial-balance;
637 USED BY:
638 print-balance-sheet
639 TO DERIVE balance-sheet;
640 USED BY:
641 print-income-statement
642 TO DERIVE income-statement;
643 MAINTAINED BY: account-maintain
644 USING : account-information;
645 MAINTAINED BY: maintain-account-information
646 USING : account-information;
647 HAS: general-ledger-account
648 MODIFIED BY account-maintain;
649 HAS: general-ledger-account
650 MODIFIED BY maintain-account-information;
651 HAS: general-ledger-account
652 REFERENCED BY account-maintain;
653 HAS: general-ledger-account
654 REFERENCED BY enter-account-entries;
655 HAS: general-ledger-account
656 REMOVED BY account-maintain;

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657 HAS: general-ledger-account
658 REMOVED BY maintain-account-information;
659 UPDATED BY: account-update
660 USING: entered-account-file;
661 UPDATED BY: update-general-ledger
662 USING: entered-account-file;
663 UPDATED BY: clean-revenues-expense;
664 UPDATED BY: end-of-year-update;
665
666 EOF EOF EOF EOF EOF

DIAGRAM - 2



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Name Selection

Parameters: DB=FINAL.DBF PRINT PUNCH=PSANAM.TMP
SELECTION='TRACE-KEY="level-2"' ORDER=BYTYPE

1	account-name	ELEMENT
2	account-type	ELEMENT
3	category-number	ELEMENT
4	current-total	ELEMENT
5	day	ELEMENT
6	journal-entry-number	ELEMENT
7	month	ELEMENT
8	previous-year-total	ELEMENT
9	request-end-of-year-close	ELEMENT
10	request-general-ledger-update	ELEMENT
11	request-revenues-expense-clean	ELEMENT
12	source-code	ELEMENT
13	subcategory-number	ELEMENT
14	update-code	ELEMENT
15	value-of-account	ELEMENT
16	year-to-now-total	ELEMENT
17	entered-account	ENTITY
18	general-ledger-account	ENTITY
19	previous-entered-account	ENTITY
20	account-number	GROUP
21	date-of-entry	GROUP
22	update-request	INPUT
23	balance-error	OUTPUT
24	clean-old-entries	PROCESS
25	clean-revenues-expense	PROCESS
26	end-of-year-update	PROCESS
27	update-general-ledger	PROCESS
28	entered-account-file	SET
29	general-ledger-file	SET
30	previous-entered-account-file	SET

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Parameters: DB=FINAL.DBF FILE=PSANAM.TMP NOINDEX
NOPUNCHED-NAMES PRINT NOPUNCH SMARG=5 NMARG=20
AMARG=10 BMARG=25 RNMARG=59 CMARG=1 HMARG=40
ONE-PER-LINE COMMENT NONEW-PAGE NONEW-LINE
NOALL-STATEMENTS COMPLEMENTARY-STATEMENTS LINE-NUMBERS
PRINTEOF DLC-COMMENT NOSORT-NAME-LIST

```
1 DEFINE ELEMENT                                account-name;
2     /* DATE OF LAST CHANGE - May 25, 1984, 00:01:07 */
3     SYNONYMS ARE:  acc-n;
4     DESCRIPTION;
5     It is a description of each of the
6     general-ledger-account.
7     It will not more than 30 characters.;
8     TRACE-KEY IS:  'level-3',
9                   'level-3.2',
10                  'level-2',
11                  'level-1';
12     CONTAINED IN:  entered-account,
13                  general-ledger-account,
14                  account-entry,
15                  account-information,
16                  adjust-account-entry;
17
18 DEFINE ELEMENT                                account-type;
19     /* DATE OF LAST CHANGE - May 25, 1984, 00:01:07 */
20     SYNONYMS ARE:  acc-ty;
21     DESCRIPTION;
22     This element distinguishes the types of
23     general-ledger-accounts . The four different
24     types of accounts are 0)regular 1)title
25     2)total 3)heading.;
26     TRACE-KEY IS:  'level-3',
27                   'level-3.2',
28                   'level-2',
29                   'level-1';
30     CONTAINED IN:  general-ledger-account,
31                  account-information;
32     VALUES ARE:
33         0 THRU          3;
34
35 DEFINE ELEMENT                                category-number;
36     /* DATE OF LAST CHANGE - May 25, 1984, 00:01:07 */
37     SYNONYMS ARE:  ca-nb;
38     DESCRIPTION;
39     The category number identifies groups,
40     1)assests 2)liabilities 3)income 4) expense,
41     of a general-ledger-file.;
42     TRACE-KEY IS:  'level-3',
43                   'level-3.2',
44                   'level-2',
```

```
45                                              'level-1';
46        CONTAINED IN:    account-number;
47        VALUES ARE:
48                      1 THRU                      4;
49
50 DEFINE ELEMENT                                              current-total;
51        /*    DATE OF LAST CHANGE - May 25, 1984, 00:01:07 */
52        SYNONYMS ARE:    cu-to;
53        DESCRIPTION;
54    It indicates the current amount of account.;
55        TRACE-KEY IS:    'level-3',
56                                              'level-3.2',
57                                              'level-2',
58                                              'level-1';
59        CONTAINED IN:    general-ledger-account,
60                                              account-information;
61        VALUES ARE:
62                      -100000000.000000
63                      THRU                      100000000.000000;
64
65 DEFINE ELEMENT                                              day;
66        /*    DATE OF LAST CHANGE - May 25, 1984, 00:01:07 */
67        SYNONYMS ARE:    d;
68        DESCRIPTION;
69    It indicates the day in a month.;
70        TRACE-KEY IS:    'level-3',
71                                              'level-3.2',
72                                              'level-2',
73                                              'level-1';
74        CONTAINED IN:    date-of-entry;
75        VALUES ARE:
76                      1 THRU                      31;
77
78 DEFINE ELEMENT
79    journal-entry-number;
80        /*    DATE OF LAST CHANGE - May 25, 1984, 00:01:07 */
81        SYNONYMS ARE:    j-e-n;
82        DESCRIPTION;
83    It keeps a sequence number to identify the
84    account entered for a fiscal year.;
85        TRACE-KEY IS:    'level-3',
86                                              'level-3.2',
87                                              'level-2',
88                                              'level-1';
89        CONTAINED IN:    entered-account,
90                                              previous-entered-account;
91        VALUES ARE:
92                      1 THRU                      999999;
93
94 DEFINE ELEMENT                                              month;
95        /*    DATE OF LAST CHANGE - May 25, 1984, 00:01:07 */
```


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```
96     SYNONYMS ARE:  m;
97     DESCRIPTION;
98 It indicates the month in a year.;
99     TRACE-KEY IS:  'level-3',
100                    'level-3.2',
101                    'level-2',
102                    'level-1';
103     CONTAINED IN:  date-of-entry;
104     VALUES ARE:
105         1 THRU          12;
106
107 DEFINE ELEMENT                                previous-year-total;
108     /* DATE OF LAST CHANGE - May 25, 1984, 00:01:07 */
109     SYNONYMS ARE:  p-y-to;
110     DESCRIPTION;
111 It keeps the previous year account amount.;
112     TRACE-KEY IS:  'level-3',
113                    'level-3.2',
114                    'level-2',
115                    'level-1';
116     CONTAINED IN:  general-ledger-account,
117                    account-information;
118     VALUES ARE:
119         -100000000.000000
120         THRU          100000000.000000;
121
122 DEFINE ELEMENT
123 request-end-of-year-close;
124     /* DATE OF LAST CHANGE - May 25, 1984, 00:01:07 */
125     SYNONYMS ARE:  e-o-y-c;
126     DESCRIPTION;
127 At the end of the year, all the revenues and expense
128 accounts are cleaned to zero and all the
129 previous-year-totals of the assets and liability
130 accounts should be changed to the value of the
131 current-total.;
132     TRACE-KEY IS:  'level-2';
133     CONTAINED IN:  update-request;
134
135 DEFINE ELEMENT
136 request-general-ledger-update;
137     /* DATE OF LAST CHANGE - May 25, 1984, 00:01:07 */
138     SYNONYMS ARE:  g-l-u;
139     DESCRIPTION;
140 This element indicates the request for posting the
141 entered-account to the general-ledger-file.;
142     TRACE-KEY IS:  'level-2';
143     CONTAINED IN:  update-request;
144
145 DEFINE ELEMENT
146 request-revenues-expense-clean;
```

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```
147 /* DATE OF LAST CHANGE - May 25, 1984, 00:01:07 */
148 SYNONYMS ARE: r-e-c;
149 DESCRIPTION;
150 It indicates the request for the clean of
151 all the revenues and expense accounts
152 at the end of the period.;
153 TRACE-KEY IS: 'level-2';
154 CONTAINED IN: update-request;
155
156 DEFINE ELEMENT source-code;
157 /* DATE OF LAST CHANGE - May 25, 1984, 00:01:07 */
158 SYNONYMS ARE: s-c;
159 DESCRIPTION;
160 It indicates which system the accounts come from:
161 (1) the account receivable system
162 (2) the account payable system
163 (3) the payroll system
164 (4) the adjustment entry.;
165 TRACE-KEY IS: 'level-1',
166 'level-2',
167 'level-3',
168 'level-3.2';
169 CONTAINED IN: entered-account,
170 account-entry,
171 adjust-account-entry;
172 VALUES ARE:
173 1 THRU 4;
174
175 DEFINE ELEMENT subcategory-number;
176 /* DATE OF LAST CHANGE - May 25, 1984, 00:01:07 */
177 SYNONYMS ARE: su-nb;
178 DESCRIPTION;
179 It is an extension to the category number
180 which is a part of account number.;
181 TRACE-KEY IS: 'level-3',
182 'level-3.2',
183 'level-2',
184 'level-1';
185 CONTAINED IN: account-number;
186 VALUES ARE:
187 0 THRU 99999;
188
189 DEFINE ELEMENT update-code;
190 /* DATE OF LAST CHANGE - May 25, 1984, 00:01:07 */
191 SYNONYMS ARE: up-c;
192 DESCRIPTION;
193 It indicates the entered-account-record is used
194 to update the general-ledger-file or not.
195 1) when the entered-account-record is not used to
196 update the general-ledger-file yet.
197 2) when the entered-account-record
```

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```
198 was used to update the general-ledger-file.;
199 TRACE-KEY IS: 'level-3',
200               'level-3.2',
201               'level-2',
202               'level-1';
203     CONTAINED IN: entered-account;
204
205 DEFINE ELEMENT                               value-of-account;
206     /* DATE OF LAST CHANGE - May 25, 1984, 00:01:07 */
207     SYNONYMS ARE: v-o-acc;
208     DESCRIPTION;
209     This element represents the amount in each account.;
210     TRACE-KEY IS: 'level-3',
211                   'level-3.2',
212                   'level-2',
213                   'level-1';
214     CONTAINED IN: entered-account,
215                   previous-entered-account,
216                   account-entry,
217                   adjust-account-entry;
218     VALUES ARE:
219         -100000000.000000
220         THRU          100000000.000000;
221
222 DEFINE ELEMENT                               year-to-now-total;
223     /* DATE OF LAST CHANGE - May 25, 1984, 00:01:07 */
224     SYNONYMS ARE: y-t-n-t;
225     DESCRIPTION;
226     This element is part of the general-ledger account.
227     It is used to put the year to the now value for
228     the revenues and the expense accounts.;
229     TRACE-KEY IS: 'level-3',
230                   'level-3.2',
231                   'level-2',
232                   'level-1';
233     CONTAINED IN: general-ledger-account,
234                   account-information;
235     VALUES ARE:
236         -100000000.000000
237         THRU          100000000.000000;
238
239 DEFINE ENTITY                               entered-account;
240     /* DATE OF LAST CHANGE - May 25, 1984, 00:01:07 */
241     SYNONYMS ARE: e-acc;
242     DESCRIPTION;
243     This is the entity of an entered-account-file
244     which contains the whole entered accounts and
245     adjusted accounts. It keeps the whole trail
246     for a period of the business.;
247     TRACE-KEY IS: 'level-0',
248                   'level-1',
```

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```
249         'level-2',
250         'level-3',
251         'level-3.2';
252 COLLECTED IN: entered-account-file;
253 CONSISTS OF:
254     journal-entry-number,
255     source-code,
256     account-number,
257     date-of-entry,
258     account-name,
259     value-of-account,
260     update-code;
261 ADDED TO:
262     entered-account-file
263     BY             account-maintain;
264 ADDED TO:
265     entered-account-file
266     BY             enter-account-entries;
267 ADDED TO:
268     entered-account-file
269     BY             adjust-account-entries;
270 REFERENCED IN:
271     entered-account-file
272     BY             adjust-account-entries;
273 REMOVED FROM:
274     entered-account-file
275     BY             account-update;
276 REMOVED FROM:
277     entered-account-file
278     BY             clean-old-entries;
279
280 DEFINE ENTITY
281 general-ledger-account;
282     /* DATE OF LAST CHANGE - May 25, 1984, 00:01:07 */
283     SYNONYMS ARE: g-l-acc;
284     DESCRIPTION;
285 This is an entity of general-ledger-file.
286 It keeps the all information about general
287 ledger account.;
288     TRACE-KEY IS: 'level-0',
289                 'level-1',
290                 'level-2',
291                 'level-3',
292                 'level-3.2';
293 COLLECTED IN: general-ledger-file;
294 CONSISTS OF:
295     account-number,
296     account-name,
297     account-type,
298     current-total,
299     year-to-now-total,
```

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```
300     previous-year-total;
301 IDENTIFIED BY: account-number;
302 ADDED TO:
303     general-ledger-file
304     BY             account-maintain;
305 ADDED TO:
306     general-ledger-file
307     BY             maintain-account-information;
308 MODIFIED IN:
309     general-ledger-file
310     BY             account-maintain;
311 MODIFIED IN:
312     general-ledger-file
313     BY             maintain-account-information;
314 REFERENCED IN:
315     general-ledger-file
316     BY             account-maintain;
317 REFERENCED IN:
318     general-ledger-file
319     BY             enter-account-entries;
320 REMOVED FROM:
321     general-ledger-file
322     BY             account-maintain;
323 REMOVED FROM:
324     general-ledger-file
325     BY             maintain-account-information;
326
327 DEFINE ENTITY
328 previous-entered-account;
329     /* DATE OF LAST CHANGE - May 25, 1984, 00:01:07 */
330     SYNONYMS ARE: p-e-a;
331     DESCRIPTION;
332 This is an entity of previous-entered-account-file
333 which keeps the trail for a fiscal year of business.
334 It can be used to produce the audit-trail report.;
335     TRACE-KEY IS: 'level-0',
336                  'level-2',
337                  'level-3';
338 COLLECTED IN: previous-entered-account-file;
339 CONSISTS OF:
340     journal-entry-number,
341     account-number,
342     date-of-entry,
343     value-of-account;
344 ADDED TO:
345     previous-entered-account-file
346     BY             account-update;
347 ADDED TO:
348     previous-entered-account-file
349     BY             clean-old-entries;
350
```


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```

402     GENERATED:      BY book-keeper;
403     RECEIVED:       BY general-ledger-processing,
404                   BY account-update;
405     CONSISTS OF:
406         request-general-ledger-update,
407         request-end-of-year-close,
408         request-revenues-expense-clean;
409
410     DEFINE OUTPUT                                         balance-error;
411         /* DATE OF LAST CHANGE - May 25, 1984, 00:01:07 */
412     SYNONYMS ARE:   b-err;
413     DESCRIPTION;
414     The output indicates the error message about
415     the inbalance of the accounts.;
416     TRACE-KEY IS:  'level-c',
417                   'level-0',
418                   'level-2';
419     GENERATED:     BY general-ledger-processing,
420                   BY account-update,
421                   BY update-general-ledger;
422     RECEIVED:      BY book-keeper;
423
424     DEFINE PROCESS                                         clean-old-entries;
425         /* DATE OF LAST CHANGE - May 25, 1984, 00:01:07 */
426     SYNONYMS ARE:   c-o-e;
427     DESCRIPTION;
428     This process cleans the entered-account-file
429     after the entered-accounts are posted to the
430     general-ledger-file. It appends the entered-account
431     to the previous-entered-account-file
432     to keep the audit trial.;
433     TRACE-KEY IS:  'level-2';
434     PART OF:       account-update;
435     ADDS:          previous-entered-account TO
436                   previous-entered-account-file;
437     REMOVES:       entered-account FROM
438                   entered-account-file;
439     EMPLOYS:       entered-account-file;
440     PROCEDURE;
441     *****
442     REPEAT the following:
443         READ entered-account from entered-account-file.
444         IF update-code is '2' THEN
445             MOVE corresponding entered-account field to
446                 previous-entered-account.
447             WRITE previous-entered-account to end of
448                 previous-entered-account-file.
449     UNTIL end of entered-account-file .
450     CLEAN the entered-account-file.
451     *****
452 ;

```


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```
504     IF category-number is 1 or 2,
505         THEN ,
506             MOVE current-total to previous-year-total.
507 UNTIL category-number greater than 2.
508 *****
509 ;
510
511 DEFINE PROCESS
512 update-general-ledger;
513     /* DATE OF LAST CHANGE - May 25, 1984, 00:01:07 */
514     SYNONYMS ARE: u-g-1;
515     DESCRIPTION;
516 This process maintains the general-ledger-file .
517 It references the entered-account-file to update the
518 general-ledger-file in the end of the period of the
519 business.;
520     TRACE-KEY IS: 'level-2';
521     GENERATES:
522         balance-error;
523     PART OF:         account-update;
524     UPDATES:         general-ledger-file
525     USING:           entered-account-file;
526     PROCEDURE;
527 *****
528 INITIAL the debit and credit values to 0.
529 REPEAT the following:
530     READ entered-account from entered-account-file.
531     SELECT the case which applies:
532         CASE1: ( value-of-account is postive )
533             ADD value-of-account to credit.
534         CASE2: ( value-of-account is negative )
535             ADD value-of-account to debit.
536 UNTIL end of entered-account-file.
537 IF credit equal debit (the entered accounts are balance)
538     THEN ,
539         RESET entered-account-file.
540         REPEAT the following:
541             READ entered-account from entered-account-file.
542             SEARCH general-ledger-file for matching
543                 account-number.
544             IF found,
545                 ADD value-of-account to current-total.
546                 MOVE '2' to update-code.
547             OTHERWISE,
548                 DISPLAY 'error error !! why
549                     account not found?'.
550         UNTIL end of file entered-account-file.
551     OTHERWISE,
552         DISPLAY 'account not balance. can't update.'.
553 *****
554 ;
```


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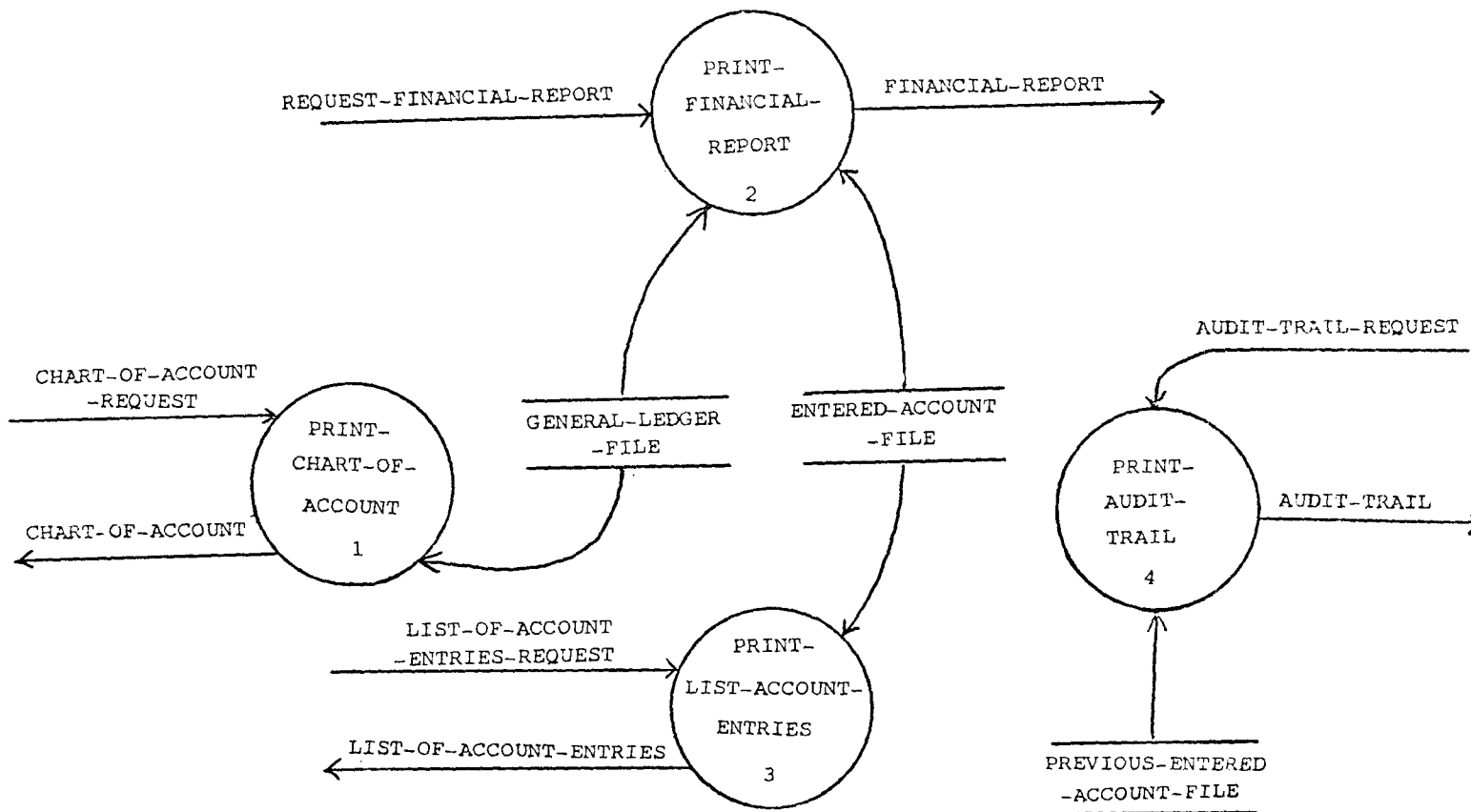
```
606 /* DATE OF LAST CHANGE - May 25, 1984, 00:01:07 */
607 SYNONYMS ARE: g-l-f;
608 DESCRIPTION;
609 This file contains ledger,total,title and heading
610 accounts. It keeps the all information about
611 general ledger account. So, It always is in balance.
612 It is used to produced the financial reports.;
613 TRACE-KEY IS: 'level-0',
614               'level-1',
615               'level-2',
616               'level-3',
617               'level-3.2';
618 COLLECTION OF:
619     general-ledger-account;
620 ORDERED BY:     account-number;
621 HAS: general-ledger-account
622     ADDED BY     account-maintain;
623 HAS: general-ledger-account
624     ADDED BY     maintain-account-information;
625 USED BY:
626     report-generator
627     TO DERIVE    financial-report;
628 USED BY:
629     report-generator
630     TO DERIVE    account-report;
631 USED BY:
632     print-chart-of-account
633     TO DERIVE    chart-of-account;
634 USED BY:
635     print-ledger-sheet
636     TO DERIVE    ledger-sheet;
637 USED BY:
638     produce-trial-balance
639     TO DERIVE    trial-balance;
640 USED BY:
641     print-balance-sheet
642     TO DERIVE    balance-sheet;
643 USED BY:
644     print-income-statement
645     TO DERIVE    income-statement;
646 MAINTAINED BY: account-maintain
647     USING :      account-information;
648 MAINTAINED BY: maintain-account-information
649     USING :      account-information;
650 HAS: general-ledger-account
651     MODIFIED BY  account-maintain;
652 HAS: general-ledger-account
653     MODIFIED BY  maintain-account-information;
654 HAS: general-ledger-account
655     REFERENCED BY account-maintain;
656 HAS: general-ledger-account
```

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```
657 REFERENCED BY enter-account-entries;
658 HAS: general-ledger-account
659 REMOVED BY account-maintain;
660 HAS: general-ledger-account
661 REMOVED BY maintain-account-information;
662 UPDATED BY: account-update
663 USING: entered-account-file;
664 UPDATED BY: update-general-ledger
665 USING: entered-account-file;
666 UPDATED BY: clean-revenues-expense;
667 UPDATED BY: end-of-year-update;
668
669 DEFINE SET
670 previous-entered-account-file;
671 /* DATE OF LAST CHANGE - May 25, 1984, 00:01:07 */
672 SYNONYMS ARE: p-e-a-f;
673 DESCRIPTION;
674 This file keeps the trail for a fiscal year
675 of business. It can be used to produce the
676 audit-trail report.;
677 TRACE-KEY IS: 'level-0',
678 'level-2',
679 'level-3';
680 COLLECTION OF:
681 previous-entered-account;
682 HAS: previous-entered-account
683 ADDED BY account-update;
684 HAS: previous-entered-account
685 ADDED BY clean-old-entries;
686 USED BY:
687 report-generator
688 TO DERIVE account-report;
689 USED BY:
690 print-audit-trail
691 TO DERIVE audit-trail;
692
693 EOF EOF EOF EOF EOF
```

DIAGRAM - 3



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Name Selection

Parameters: DB=FINAL.DBF PRINT PUNCH=PSANAM.TMP
SELECTION='TRACE-KEY="level-3"' ORDER=BYTYPE

1	account-name	ELEMENT
2	account-type	ELEMENT
3	category-number	ELEMENT
4	current-total	ELEMENT
5	day	ELEMENT
6	journal-entry-number	ELEMENT
7	month	ELEMENT
8	previous-year-total	ELEMENT
9	request-audit-trail	ELEMENT
10	request-chart-of-acc	ELEMENT
11	request-list-of-acc-entries	ELEMENT
12	source-code	ELEMENT
13	subcategory-number	ELEMENT
14	update-code	ELEMENT
15	value-of-account	ELEMENT
16	year-to-now-total	ELEMENT
17	entered-account	ENTITY
18	general-ledger-account	ENTITY
19	previous-entered-account	ENTITY
20	account-number	GROUP
21	date-of-entry	GROUP
22	request-account-report	INPUT
23	request-financial-report	INPUT
24	audit-trail	OUTPUT
25	chart-of-account	OUTPUT
26	financial-report	OUTPUT
27	list-of-account-entries	OUTPUT
28	print-audit-trail	PROCESS
29	print-chart-of-account	PROCESS
30	print-financial-report	PROCESS
31	print-list-of-account-entries	PROCESS
32	entered-account-file	SET
33	general-ledger-file	SET
34	previous-entered-account-file	SET

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Parameters: DB=FINAL.DBF FILE=PSANAM.TMP NOINDEX
NOPUNCHED-NAMES PRINT NOPUNCH SMARG=5 NMARG=20
AMARG=10 BMARG=25 RNMARG=59 CMARG=1 HMARG=40
ONE-PER-LINE COMMENT NONEW-PAGE NONEW-LINE
NOALL-STATEMENTS COMPLEMENTARY-STATEMENTS LINE-NUMBERS
PRINTEOF DLC-COMMENT NOSORT-NAME-LIST

```
1 DEFINE ELEMENT account-name;
2 /* DATE OF LAST CHANGE - May 25, 1984, 00:01:07 */
3 SYNONYMS ARE: acc-n;
4 DESCRIPTION;
5 It is a description of each of the
6 general-ledger-account.
7 It will not more than 30 characters.;
8 TRACE-KEY IS: 'level-3',
9 'level-3.2',
10 'level-2',
11 'level-1';
12 CONTAINED IN: entered-account,
13 general-ledger-account,
14 account-entry,
15 account-information,
16 adjust-account-entry;
17
18 DEFINE ELEMENT account-type;
19 /* DATE OF LAST CHANGE - May 25, 1984, 00:01:07 */
20 SYNONYMS ARE: acc-ty;
21 DESCRIPTION;
22 This element distinguishes the types of
23 general-ledger-accounts . The four different
24 types of accounts are 0)regular 1)title
25 2)total 3)heading.;
26 TRACE-KEY IS: 'level-3',
27 'level-3.2',
28 'level-2',
29 'level-1';
30 CONTAINED IN: general-ledger-account,
31 account-information;
32 VALUES ARE:
33 0 THRU 3;
34
35 DEFINE ELEMENT category-number;
36 /* DATE OF LAST CHANGE - May 25, 1984, 00:01:07 */
37 SYNONYMS ARE: ca-nb;
38 DESCRIPTION;
39 The category number identifies groups,
40 1)assests 2)liabilities 3)income 4) expense,
41 of a general-ledger-file.;
42 TRACE-KEY IS: 'level-3',
43 'level-3.2',
44 'level-2',
```

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```
45          'level-1';
46   CONTAINED IN:  account-number;
47   VALUES ARE:
48       1 THRU          4;
49
50 DEFINE ELEMENT                                current-total;
51   /*   DATE OF LAST CHANGE - May 25, 1984, 00:01:07 */
52   SYNONYMS ARE:  cu-to;
53   DESCRIPTION;
54   It indicates the current amount of account.;
55   TRACE-KEY IS:  'level-3',
56                  'level-3.2',
57                  'level-2',
58                  'level-1';
59   CONTAINED IN:  general-ledger-account,
60                  account-information;
61   VALUES ARE:
62       -100000000.000000
63       THRU          100000000.000000;
64
65 DEFINE ELEMENT                                day;
66   /*   DATE OF LAST CHANGE - May 25, 1984, 00:01:07 */
67   SYNONYMS ARE:  d;
68   DESCRIPTION;
69   It indicates the day in a month.;
70   TRACE-KEY IS:  'level-3',
71                  'level-3.2',
72                  'level-2',
73                  'level-1';
74   CONTAINED IN:  date-of-entry;
75   VALUES ARE:
76       1 THRU          31;
77
78 DEFINE ELEMENT
79 journal-entry-number;
80   /*   DATE OF LAST CHANGE - May 25, 1984, 00:01:07 */
81   SYNONYMS ARE:  j-e-n;
82   DESCRIPTION;
83   It keeps a sequence number to identify the
84   account entered for a fiscal year.;
85   TRACE-KEY IS:  'level-3',
86                  'level-3.2',
87                  'level-2',
88                  'level-1';
89   CONTAINED IN:  entered-account,
90                  previous-entered-account;
91   VALUES ARE:
92       1 THRU          999999;
93
94 DEFINE ELEMENT                                month;
95   /*   DATE OF LAST CHANGE - May 25, 1984, 00:01:07 */
```


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```
96     SYNONYMS ARE:  m;
97     DESCRIPTION;
98 It indicates the month in a year.;
99     TRACE-KEY IS:  'level-3',
100                    'level-3.2',
101                    'level-2',
102                    'level-1';
103     CONTAINED IN:  date-of-entry;
104     VALUES ARE:
105         1 THRU          12;
106
107 DEFINE ELEMENT                                previous-year-total;
108     /*  DATE OF LAST CHANGE - May 25, 1984, 00:01:07 */
109     SYNONYMS ARE:  p-y-to;
110     DESCRIPTION;
111 It keeps the previous year account amount.;
112     TRACE-KEY IS:  'level-3',
113                    'level-3.2',
114                    'level-2',
115                    'level-1';
116     CONTAINED IN:  general-ledger-account,
117                    account-information;
118     VALUES ARE:
119         -100000000.000000
120         THRU          100000000.000000;
121
122 DEFINE ELEMENT                                request-audit-trail;
123     /*  DATE OF LAST CHANGE - May 25, 1984, 00:01:07 */
124     SYNONYMS ARE:  a-t-re;
125     DESCRIPTION;
126 It indicates the request for audit trail.;
127     TRACE-KEY IS:  'level-3';
128     CONTAINED IN:  request-account-report;
129     USED BY:
130         print-audit-trail
131         TO DERIVE    audit-trail;
132
133 DEFINE ELEMENT
134 request-chart-of-acc;
135     /*  DATE OF LAST CHANGE - May 25, 1984, 00:01:07 */
136     SYNONYMS ARE:  c-o-a-re;
137     DESCRIPTION;
138 It indicates the request for the chart of account.;
139     TRACE-KEY IS:  'level-3';
140     CONTAINED IN:  request-account-report;
141     USED BY:
142         print-chart-of-account
143         TO DERIVE    chart-of-account;
144
145 DEFINE ELEMENT
146 request-list-of-acc-entries;
```

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```
147 /* DATE OF LAST CHANGE - May 25, 1984, 00:01:07 */
148 SYNONYMS ARE: 1-o-a-e-re;
149 DESCRIPTION;
150 It indicates the request for report of the
151 list-of-account-entries.;
152 TRACE-KEY IS: 'level-3';
153 CONTAINED IN: request-account-report;
154
155 DEFINE ELEMENT source-code;
156 /* DATE OF LAST CHANGE - May 25, 1984, 00:01:07 */
157 SYNONYMS ARE: s-c;
158 DESCRIPTION;
159 It indicates which system the accounts come from:
160 (1) the account receivable system
161 (2) the account payable system
162 (3) the payroll system
163 (4) the adjustment entry.;
164 TRACE-KEY IS: 'level-1',
165 'level-2',
166 'level-3',
167 'level-3.2';
168 CONTAINED IN: entered-account,
169 account-entry,
170 adjust-account-entry;
171 VALUES ARE:
172 1 THRU 4;
173
174 DEFINE ELEMENT subcategory-number;
175 /* DATE OF LAST CHANGE - May 25, 1984, 00:01:07 */
176 SYNONYMS ARE: su-nb;
177 DESCRIPTION;
178 It is an extension to the category number
179 which is a part of account number.;
180 TRACE-KEY IS: 'level-3',
181 'level-3.2',
182 'level-2',
183 'level-1';
184 CONTAINED IN: account-number;
185 VALUES ARE:
186 0 THRU 99999;
187
188 DEFINE ELEMENT update-code;
189 /* DATE OF LAST CHANGE - May 25, 1984, 00:01:07 */
190 SYNONYMS ARE: up-c;
191 DESCRIPTION;
192 It indicates the entered-account-record is used
193 to update the general-ledger-file or not.
194 1) when the entered-account-record is not used to
195 update the general-ledger-file yet.
196 2) when the entered-account-record
197 was used to update the general-ledger-file.;
```

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```
198 TRACE-KEY IS: 'level-3',
199 'level-3.2',
200 'level-2',
201 'level-1';
202 CONTAINED IN: entered-account;
203
204 DEFINE ELEMENT value-of-account;
205 /* DATE OF LAST CHANGE - May 25, 1984, 00:01:07 */
206 SYNONYMS ARE: v-o-acc;
207 DESCRIPTION;
208 This element represents the amount in each account.;
209 TRACE-KEY IS: 'level-3',
210 'level-3.2',
211 'level-2',
212 'level-1';
213 CONTAINED IN: entered-account,
214 previous-entered-account,
215 account-entry,
216 adjust-account-entry;
217 VALUES ARE:
218 -100000000.000000
219 THRU 100000000.000000;
220
221 DEFINE ELEMENT year-to-now-total;
222 /* DATE OF LAST CHANGE - May 25, 1984, 00:01:07 */
223 SYNONYMS ARE: y-t-n-t;
224 DESCRIPTION;
225 This element is part of the general-ledger account.
226 It is used to put the year to the now value for
227 the revenues and the expense accounts.;
228 TRACE-KEY IS: 'level-3',
229 'level-3.2',
230 'level-2',
231 'level-1';
232 CONTAINED IN: general-ledger-account,
233 account-information;
234 VALUES ARE:
235 -100000000.000000
236 THRU 100000000.000000;
237
238 DEFINE ENTITY entered-account;
239 /* DATE OF LAST CHANGE - May 25, 1984, 00:01:07 */
240 SYNONYMS ARE: e-acc;
241 DESCRIPTION;
242 This is the entity of an entered-account-file
243 which contains the whole entered accounts and
244 adjusted accounts. It keeps the whole trail
245 for a period of the business.;
246 TRACE-KEY IS: 'level-0',
247 'level-1',
248 'level-2',
```

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```
249         'level-3',
250         'level-3.2';
251 COLLECTED IN: entered-account-file;
252 CONSISTS OF:
253     journal-entry-number,
254     source-code,
255     account-number,
256     date-of-entry,
257     account-name,
258     value-of-account,
259     update-code;
260 ADDED TO:
261     entered-account-file
262     BY account-maintain;
263 ADDED TO:
264     entered-account-file
265     BY enter-account-entries;
266 ADDED TO:
267     entered-account-file
268     BY adjust-account-entries;
269 REFERENCED IN:
270     entered-account-file
271     BY adjust-account-entries;
272 REMOVED FROM:
273     entered-account-file
274     BY account-update;
275 REMOVED FROM:
276     entered-account-file
277     BY clean-old-entries;
278
279 DEFINE ENTITY
280 general-ledger-account;
281 /* DATE OF LAST CHANGE - May 25, 1984, 00:01:07 */
282 SYNONYMS ARE: g-l-acc;
283 DESCRIPTION;
284 This is an entity of general-ledger-file.
285 It keeps the all information about general
286 ledger account.;
287 TRACE-KEY IS: 'level-0',
288               'level-1',
289               'level-2',
290               'level-3',
291               'level-3.2';
292 COLLECTED IN: general-ledger-file;
293 CONSISTS OF:
294     account-number,
295     account-name,
296     account-type,
297     current-total,
298     year-to-now-total,
299     previous-year-total;
```

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```
300 IDENTIFIED BY: account-number;
301 ADDED TO:
302     general-ledger-file
303     BY account-maintain;
304 ADDED TO:
305     general-ledger-file
306     BY maintain-account-information;
307 MODIFIED IN:
308     general-ledger-file
309     BY account-maintain;
310 MODIFIED IN:
311     general-ledger-file
312     BY maintain-account-information;
313 REFERENCED IN:
314     general-ledger-file
315     BY account-maintain;
316 REFERENCED IN:
317     general-ledger-file
318     BY enter-account-entries;
319 REMOVED FROM:
320     general-ledger-file
321     BY account-maintain;
322 REMOVED FROM:
323     general-ledger-file
324     BY maintain-account-information;
325
326 DEFINE ENTITY
327 previous-entered-account;
328     /* DATE OF LAST CHANGE - May 25, 1984, 00:01:07 */
329     SYNONYMS ARE: p-e-a;
330     DESCRIPTION;
331 This is an entity of previous-entered-account-file
332 which keeps the trail for a fiscal year of business.
333 It can be used to produce the audit-trail report.;
334     TRACE-KEY IS: 'level-0',
335                   'level-2',
336                   'level-3';
337     COLLECTED IN: previous-entered-account-file;
338     CONSISTS OF:
339         journal-entry-number,
340         account-number,
341         date-of-entry,
342         value-of-account;
343     ADDED TO:
344         previous-entered-account-file
345         BY account-update;
346     ADDED TO:
347         previous-entered-account-file
348         BY clean-old-entries;
349
350 DEFINE GROUP account-number;
```

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```
351 /* DATE OF LAST CHANGE - May 25, 1984, 00:01:07 */
352 SYNONYMS ARE: acc-nb;
353 DESCRIPTION;
354 It identifies a particular account in the
355 general-ledger-file. It contains the category
356 and sub-category numbers.;
357 TRACE-KEY IS: 'level-3',
358               'level-3.2',
359               'level-2',
360               'level-1';
361 CONSISTS OF:
362     category-number,
363     subcategory-number;
364 CONTAINED IN: entered-account,
365               general-ledger-account,
366               previous-entered-account,
367               account-entry,
368               account-information,
369               adjust-account-entry;
370 IDENTIFIES: general-ledger-account;
371 ORDERS:     general-ledger-file;
372
373 DEFINE GROUP                                date-of-entry;
374 /* DATE OF LAST CHANGE - May 25, 1984, 00:01:07 */
375 SYNONYMS ARE: d-of-e;
376 DESCRIPTION;
377 This element represents the date of making an entry.;
378 TRACE-KEY IS: 'level-3',
379               'level-3.2',
380               'level-2',
381               'level-1';
382 CONSISTS OF:
383     day,
384     month;
385 CONTAINED IN: entered-account,
386               previous-entered-account,
387               account-entry,
388               adjust-account-entry;
389
390 DEFINE INPUT
391 request-account-report;
392 /* DATE OF LAST CHANGE - May 25, 1984, 00:01:07 */
393 SYNONYMS ARE: r-a-r;
394 DESCRIPTION;
395 This indicates the account reports requested.;
396 TRACE-KEY IS: 'level-c',
397               'level-0',
398               'level-3';
399 GENERATED: BY book-keeper;
400 RECEIVED:   BY general-ledger-processing,
401             BY report-generator,
```

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```
402 BY print-chart-of-account,  
403 BY print-list-of-account-entries,  
404 BY print-audit-trail;  
405 CONSISTS OF:  
406 request-audit-trail,  
407 request-chart-of-acc,  
408 request-list-of-acc-entries;  
409  
410 DEFINE INPUT  
411 request-financial-report;  
412 /* DATE OF LAST CHANGE - May 25, 1984, 00:01:07 */  
413 SYNONYMS ARE: r-f-r;  
414 DESCRIPTION;  
415 This data indicates the requests on  
416 the financial reports.;  
417 TRACE-KEY IS: 'level-c',  
418 'level-0',  
419 'level-3',  
420 'level-3.2';  
421 GENERATED: BY chief-accountant;  
422 RECEIVED: BY general-ledger-processing,  
423 BY report-generator,  
424 BY print-financial-report,  
425 BY print-ledger-sheet,  
426 BY produce-trial-balance,  
427 BY print-balance-sheet,  
428 BY print-income-statement;  
429 CONSISTS OF:  
430 request-balance-sheet,  
431 request-ledger-sheet,  
432 request-income-statement,  
433 request-trial-balance;  
434  
435 DEFINE OUTPUT audit-trail;  
436 /* DATE OF LAST CHANGE - May 25, 1984, 00:01:07 */  
437 SYNONYMS ARE: a-t;  
438 DESCRIPTION;  
439 This report shows the trail of entered accounts  
440 for a certain of preiod.;  
441 TRACE-KEY IS: 'level-3';  
442 GENERATED: BY print-audit-trail,  
443 BY report-generator;  
444 RECEIVED: BY book-keeper;  
445 PART OF: account-report;  
446 DERIVED BY: print-audit-trail  
447 USING: previous-entered-account-file,  
448 request-audit-trail;  
449 LAYOUT;  
450  
451  
452
```

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453

454

455

456

457 PANY

XXXXXX...

458

459

XX/XX/XX

460

461

TO

462

463

XX/XX/XX

464

465

466

AU...

467 IL

PAGE x OF x

468

469

470

471

472

473

474

JOURNAL

ENTRY

ACCOUNT

SOURCE

475

AMOUNT

476

ENTRY NO.

DATE

NO.

CODE

...

477

NAME

DR

CR

478

479

480

481

482

483

484

XXXXXX

XX/XX/XX

XXXXXX

ADJ

XX...

485

XXXXXXXXXXXXXX XX,XXX,XXX.XX

486

XXXXXX

XX/XX/XX

XXXXXX

A/P

XX...

487

XXXXXXXXXXXXXX XX,XXX,XXX.XX

488

XXXXXX

XX/XX/XX

XXXXXX

P/R

XX...

489

XXXXXXXXXXXXXX XX,XXX,XXX.XX

490

XXXXXX

XX/XX/XX

XXXXXX

A/R

XX...

491

XXXXXXXXXXXXXX XX,XXX,XXX.XX

492

XXXXXX

XX/XX/XX

XXXXXX

A/R

XX...

493

XXXXXXXXXXXXXX XX,XXX,XXX.XX

494

XXXXXX

XX/XX/XX

XXXXXX

A/P

XX...

495

XXXXXXXXXXXXXX XX,XXX,XXX.XX

496

XXXXXX

XX/XX/XX

XXXXXX

P/R

XX...

497

XXXXXXXXXXXXXX XX,XXX,XXX.XX

498

XXXXXX

XX/XX/XX

XXXXXX

A/P

XX...

499

XXXXXXXXXXXXXX XX,XXX,XXX.XX

500

XXXXXX

XX/XX/XX

XXXXXX

A/R

XX...

501

XXXXXXXXXXXXXX XX,XXX,XXX.XX

502

XXXXXX

XX/XX/XX

XXXXXX

ADJ

XX...

503

XXXXXXXXXXXXXX XX,XXX,XXX.XX

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606 USING:
607 LAYOUT;

entered-account-file;

608
609
610
611
612
613
614

XXXXXXXXXXXXXXXXX ...

PAGE x OF x

615
616
617
618
619

JOURNAL ENTRY LIST ...

620
621

X/XX/XX

622
623
624
625
626
627

628
629

JOURNAL ENTRY ACCOUNT SOURCE
AMOUNT

630
631

ENTRY NO. DATE NO. CODE ...
DR CR

632
633

AME

634
635

XXXXXX XX/XX/XX XXXXXX A/R XXXX...
XXXXXXXXXX XX,XXX,XXX.XX

636
637

XXXXXX XX/XX/XX XXXXXX A/P XXXX...
XXXXXXXXXX XX,XXX,XXX.XX

638
639

XXXXXX XX/XX/XX XXXXXX P/R XXXX...
XXXXXXXXXX XX,XXX,XXX.XX

640
641

XXXXXX XX/XX/XX XXXXXX A/R XXXX...
XXXXXXXXXX XX,XXX,XXX.XX

642
643

XXXXXX XX/XX/XX XXXXXX A/R XXXX...
XXXXXXXXXX XX,XXX,XXX.XX

644
645

XXXXXX XX/XX/XX XXXXXX ADJ XXXX...
XXXXXXXXXX XX,XXX,XXX.XX

646
647

XXXXXX XX/XX/XX XXXXXX A/P XXXX...
XXXXXXXXXX XX,XXX,XXX.XX

648
649

XXXXXX XX/XX/XX XXXXXX P/R XXXX...
XXXXXXXXXX XX,XXX,XXX.XX

650
651

XXXXXX XX/XX/XX XXXXXX A/P XXXX...
XXXXXXXXXX XX,XXX,XXX.XX

652
653

XXXXXX XX/XX/XX XXXXXX A/R XXXX...
XXXXXXXXXX XX,XXX,XXX.XX

654 ;

655
656

DEFINE PROCESS

print-audit-trail;

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```
657 /* DATE OF LAST CHANGE - May 25, 1984, 00:01:07 */
658 SYNONYMS ARE: p-a-t;
659 DESCRIPTION;
660 This process produces the audit-trail report for a
661 certain range of period.;
662 TRACE-KEY IS: 'level-3';
663 GENERATES:
664     audit-trail;
665 RECEIVES:
666     request-account-report;
667 PART OF:     report-generator;
668 DERIVES:     audit-trail
669 USING:       previous-entered-account-file,
670             request-audit-trail;
671 PROCEDURE;
672 *****
673 (*Please reference the layout report
674 for the audit-trail.*)
675 TAKE the start-date and end-date.
676 SET page-number and line-number equal 1.
677
678 (* print the title lines *)
679 WRITE the "XXXXXXXXXXXXX COMPANY" line.
680 WRITE the start-date "TO" end-date lines.
681 INCREASE line-number by 8 .
682 (* end of print the title lines *)
683
684 REPEAT the following:
685
686 (* print heading lines *)
687 WRITE the "AUDIT...TRAIL...PAGE x OF x" line .
688 WRITE the "JOURNAL ENTRY ACCOUNT SOURCE AMOUNT".
689 INCREASE line-number by 6 lines.
690 (* end of print the heading lines *)
691
692 REPEAT the following:
693 READ previous-entered-account from
694     previous-entered-file.
695 IF (day-of-entry GREATER OR EQUAL start-day)
696     OR
697     (day-of-entry SMALLER OR EQUAL end-day),
698 THEN
699     WRITE journal-entry-number,date-of-entry,
700     account-name.
701 SELECT the case which applies:
702     CASE1: (source-code is 1)
703             SOURCE = "A/R".
704     CASE2: (source0code is 2)
705             SOURCE = "A/P".
706     CASE3: (source-code is 3)
707             SOURCE = "P/R".
```

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```
708 WRITE SOURCE,account-name.
709 SELECT the case which applies:
710 CASE1 : (value-of-account is positive)
711 WRITE the value-of-account in
712 the CR column.
713 CASE2 : (value-of-account is negative)
714 WRITE the abs(value-of-account)
715 in the DR column.
716 INCREASE line-number by 1.
717 UNTIL line-number equal 50 OR end of
718 previous-entered-account-file.
719 INCREASE page-number by 1.
720 SET line-number to 1.
721 UNTIL end of previous-entered-account-file.
722 *****
723 ;
724
725 DEFINE PROCESS
726 print-chart-of-account;
727 /* DATE OF LAST CHANGE - May 25, 1984, 00:01:07 */
728 SYNONYMS ARE: p-c-o-a;
729 DESCRIPTION;
730 This process produces the chart of accounts
731 according to the request.;
732 TRACE-KEY IS: 'level-3';
733 GENERATES:
734 chart-of-account;
735 RECEIVES:
736 request-account-report;
737 PART OF: report-generator;
738 DERIVES: chart-of-account
739 USING: general-ledger-file,
740 request-chart-of-acc;
741 PROCEDURE;
742 *****
743 (*Please reference the layout report
744 for the chart-of-account.*)
745 SET page-number and line-number equal 1.
746 TAKE the date.
747
748 (* print the title *)
749 WRITE the "XXXXXXXXXXXXXXXX COMPANY" line.
750 WRITE the "CHART OF ACCOUNT AS OF xx/xx/xx....".
751 WRITE the "*** BALANCE SHEET ***" line".
752 INCREASE the line number by 10.
753 (* end of the printing the title *)
754
755 REPEAT the following:
756
757 (* print the heading *)
758 IF page-number greater than 1 ,
```

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```

759     THEN,
760         WRITE the "CHART OF ACCOUNT AS OF....".
761         INCREASE line-number by 1. AS OF ...".
762     WRITE the "ACCT NO ACCT NAME...." .
763     ADVANCE 2 lines.
764     INCREASE the line number by 4.
765     (* end of printing the heading *)
766
767     REPEAT the following:
768         READ general-ledger-account from
769             general-ledger-file.
770     IF account-name is 'INCOME STATEMENT',
771     THEN,
772         WRITE the "*** INCOME STATEMENT ***".
773         INCREASE line-number by 1.
774     WRITE the account-number,account-name.
775     SELECT the case which applies:
776         CASE1: (account-type is 0)
777             TYPE = "regular".
778         CASE2: (account-type is 1)
779             TYPE = "title ".
780         CASE3: (account-type is 2)
781             TYPE = "total ".
782         CASE4: (account-type is 3)
783             TYPE = "heading".
784     WRITE the TYPE.
785     IF account-type is 0 'regular',
786     THEN ,
787         SELECT the case which applies:
788             CASE1 : (current-total = > 0)
789                 WRITE the [current-total+"CR"].
790             CASE2 : (current-total < 0)
791                 WRITE the [abs(current-total)+"DR"].
792     INCREASE line-number by 1.
793     UNTIL line-number equal 50 or end of
794         general-ledger-file.
795     INCREASE page-number by 1.
796     SET line-number equal to 1.
797     UNTIL end of general-ledger-file.
798     *****
799 ;
800
801 DEFINE PROCESS
802 print-financial-report;
803     /* DATE OF LAST CHANGE - May 25, 1984, 00:01:07 */
804     SYNONYMS ARE: p-f-r;
805     DESCRIPTION;
806 This process produces the financial reports.;
807     TRACE-KEY IS: 'level-3';
808     GENERATES:
809         financial-report;

```


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```
861 WRITE journal-entry-number,date
862                               ,account-number.
863 SELECT the case which applies:
864     CASE1: (source-code is 1)
865           SOURCE = "A/R".
866     CASE2: (source0code is 2)
867           SOURCE = "A/P".
868     CASE3: (source-code is 3)
869           SOURCE = "P/R".
870 WRITE SOURCE,account-name.
871 SELECT the case which applies:
872     CASE1 : (value-of-account is postive)
873           WRITE the value-of-account
874                               in CR column.
875     CASE2 : (value-of-account is negative)
876           WRITE the [abs(value-of-account)]
877                               in DR column.
878           INCREASE line-number by 1.
879 UNTIL line-number equal 50 OR the end of
880           entered-account-file.
881 INCREASE page-number by 1.
882 SET line-number to 1.
883 UNTIL the end of entered-account-file.
884 *****
885 ;
886
887 DEFINE SET
888 entered-account-file;
889 /* DATE OF LAST CHANGE - May 25, 1984, 00:01:07 */
890 SYNONYMS ARE: e-t-f;
891 DESCRIPTION;
892 This file contains the whole entered accounts and
893 adjusted accounts. It keeps the whole trail for a
894 period of the business. It will be used to update
895 the general-ledger-file and append to the
896 previous-entered-account-file.;
897 TRACE-KEY IS: 'level-0',
898               'level-1',
899               'level-2',
900               'level-3',
901               'level-3.2';
902 COLLECTION OF:
903     entered-account;
904 HAS: entered-account
905     ADDED BY     account-maintain;
906 HAS: entered-account
907     ADDED BY     enter-account-entries;
908 HAS: entered-account
909     ADDED BY     adjust-account-entries;
910 USED BY:
911     report-generator
```


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```
912         TO DERIVE      account-report;
913     USED BY:
914         print-list-of-account-entries
915         TO DERIVE      list-of-account-entries;
916     USED BY:
917         print-ledger-sheet
918         TO DERIVE      ledger-sheet;
919     USED BY:
920         produce-trial-balance
921         TO DERIVE      trial-balance;
922     HAS: entered-account
923         REFERENCED BY adjust-account-entries;
924     HAS: entered-account
925         REMOVED BY    account-update;
926     HAS: entered-account
927         REMOVED BY    clean-old-entries;
928     USED BY:
929         account-update
930         TO UPDATE     general-ledger-file;
931     USED BY:
932         update-general-ledger
933         TO UPDATE     general-ledger-file;
934     EMPLOYED BY:    clean-old-entries;
935
936     DEFINE SET                                general-ledger-file;
937         /* DATE OF LAST CHANGE - May 25, 1984, 00:01:07 */
938     SYNONYMS ARE:    g-l-f;
939     DESCRIPTION;
940     This file contains ledger,total,title and heading
941     accounts. It keeps the all information about
942     general ledger account. So, It always is in balance.
943     It is used to produced the financial reports.;
944     TRACE-KEY IS:   'level-0',
945                   'level-1',
946                   'level-2',
947                   'level-3',
948                   'level-3.2';
949     COLLECTION OF:
950         general-ledger-account;
951     ORDERED BY:     account-number;
952     HAS: general-ledger-account
953         ADDED BY    account-maintain;
954     HAS: general-ledger-account
955         ADDED BY    maintain-account-information;
956     USED BY:
957         report-generator
958         TO DERIVE    financial-report;
959     USED BY:
960         report-generator
961         TO DERIVE    account-report;
962     USED BY:
```

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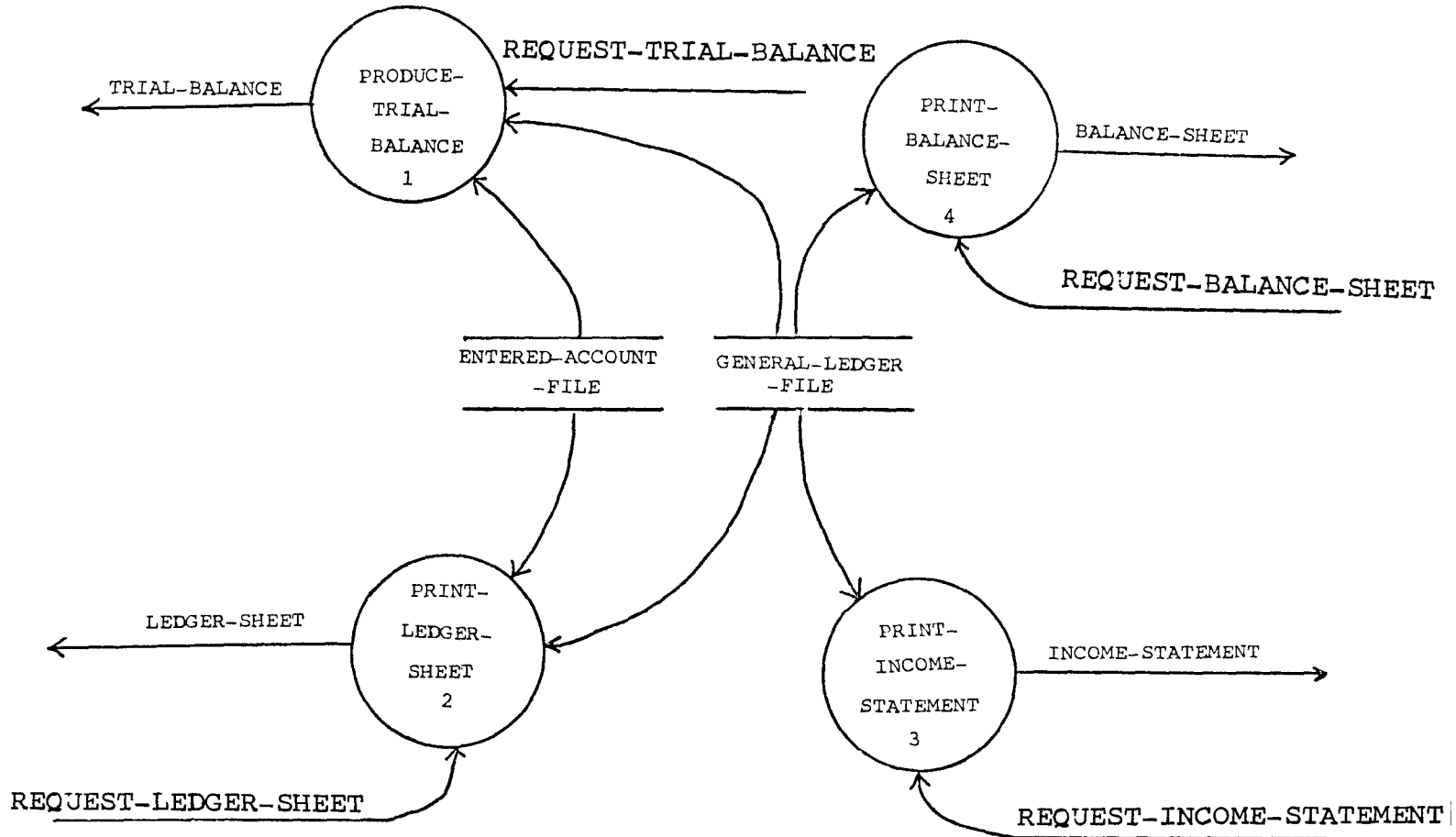
```
963      print-chart-of-account
964      TO DERIVE      chart-of-account;
965      USED BY:
966      print-ledger-sheet
967      TO DERIVE      ledger-sheet;
968      USED BY:
969      produce-trial-balance
970      TO DERIVE      trial-balance;
971      USED BY:
972      print-balance-sheet
973      TO DERIVE      balance-sheet;
974      USED BY:
975      print-income-statement
976      TO DERIVE      income-statement;
977      MAINTAINED BY: account-maintain
978      USING :      account-information;
979      MAINTAINED BY: maintain-account-information
980      USING :      account-information;
981      HAS: general-ledger-account
982      MODIFIED BY  account-maintain;
983      HAS: general-ledger-account
984      MODIFIED BY  maintain-account-information;
985      HAS: general-ledger-account
986      REFERENCED BY account-maintain;
987      HAS: general-ledger-account
988      REFERENCED BY enter-account-entries;
989      HAS: general-ledger-account
990      REMOVED BY   account-maintain;
991      HAS: general-ledger-account
992      REMOVED BY   maintain-account-information;
993      UPDATED BY:  account-update
994      USING:      entered-account-file;
995      UPDATED BY:  update-general-ledger
996      USING:      entered-account-file;
997      UPDATED BY:  clean-revenues-expense;
998      UPDATED BY:  end-of-year-update;
999
1000 DEFINE SET
1001 previous-entered-account-file;
1002 /* DATE OF LAST CHANGE - May 25, 1984, 00:01:07 */
1003 SYNONYMS ARE: p-e-a-f;
1004 DESCRIPTION;
1005 This file keeps the trail for a fiscal year
1006 of business. It can be used to produce the
1007 audit-trail report.;
1008 TRACE-KEY IS: 'level-0',
1009                'level-2',
1010                'level-3';
1011 COLLECTION OF:
1012     previous-entered-account;
1013 HAS: previous-entered-account
```

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1014 ADDED BY account-update;
1015 HAS: previous-entered-account
1016 ADDED BY clean-old-entries;
1017 USED BY:
1018 report-generator
1019 TO DERIVE account-report;
1020 USED BY:
1021 print-audit-trail
1022 TO DERIVE audit-trail;
1023
1024 EOF EOF EOF EOF EOF

DIAGRAM - 3.2



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Name Selection

Parameters: DB=FINAL.DBF PRINT PUNCH=PSANAM.TMP
SELECTION='TRACE-KEY="level-3.2"' ORDER=BYTYPE

1	account-name	ELEMENT
2	account-type	ELEMENT
3	category-number	ELEMENT
4	current-total	ELEMENT
5	day	ELEMENT
6	journal-entry-number	ELEMENT
7	month	ELEMENT
8	previous-year-total	ELEMENT
9	request-balance-sheet	ELEMENT
10	request-income-statement	ELEMENT
11	request-ledger-sheet	ELEMENT
12	request-trial-balance	ELEMENT
13	source-code	ELEMENT
14	subcategory-number	ELEMENT
15	update-code	ELEMENT
16	value-of-account	ELEMENT
17	year-to-now-total	ELEMENT
18	entered-account	ENTITY
19	general-ledger-account	ENTITY
20	account-number	GROUP
21	date-of-entry	GROUP
22	request-financial-report	INPUT
23	balance-sheet	OUTPUT
24	income-statement	OUTPUT
25	ledger-sheet	OUTPUT
26	trial-balance	OUTPUT
27	print-balance-sheet	PROCESS
28	print-income-statement	PROCESS
29	print-ledger-sheet	PROCESS
30	produce-trial-balance	PROCESS
31	entered-account-file	SET
32	general-ledger-file	SET

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Parameters: DB=FINAL.DBF FILE=PSANAM.TMP NOINDEX
NOPUNCHED-NAMES PRINT NOPUNCH SMARG=5 NMARG=20
AMARG=10 BMARG=25 RNMARG=59 CMARG=1 HMARG=40
ONE-PER-LINE COMMENT NONEW-PAGE NONEW-LINE
NOALL-STATEMENTS COMPLEMENTARY-STATEMENTS LINE-NUMBERS
PRINTEOF DLC-COMMENT NOSORT-NAME-LIST

```
1 DEFINE ELEMENT                                account-name;
2     /* DATE OF LAST CHANGE - May 25, 1984, 00:01:07 */
3     SYNONYMS ARE:  acc-n;
4     DESCRIPTION;
5     It is a description of each of the
6     general-ledger-account.
7     It will not more than 30 characters.;
8     TRACE-KEY IS:  'level-3',
9                   'level-3.2',
10                  'level-2',
11                  'level-1';
12     CONTAINED IN:  entered-account,
13                  general-ledger-account,
14                  account-entry,
15                  account-information,
16                  adjust-account-entry;
17
18 DEFINE ELEMENT                                account-type;
19     /* DATE OF LAST CHANGE - May 25, 1984, 00:01:07 */
20     SYNONYMS ARE:  acc-ty;
21     DESCRIPTION;
22     This element distinguishes the types of
23     general-ledger-accounts . The four different
24     types of accounts are 0)regular 1)title
25     2)total 3)heading.;
26     TRACE-KEY IS:  'level-3',
27                   'level-3.2',
28                   'level-2',
29                   'level-1';
30     CONTAINED IN:  general-ledger-account,
31                  account-information;
32     VALUES ARE:
33         0 THRU          3;
34
35 DEFINE ELEMENT                                category-number;
36     /* DATE OF LAST CHANGE - May 25, 1984, 00:01:07 */
37     SYNONYMS ARE:  ca-nb;
38     DESCRIPTION;
39     The category number identifies groups,
40     1)assests 2)liabilities 3)income 4) expense,
41     of a general-ledger-file.;
42     TRACE-KEY IS:  'level-3',
43                   'level-3.2',
44                   'level-2',
```

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```
45         'level-1';
46     CONTAINED IN:  account-number;
47     VALUES ARE:
48         1 THRU          4;
49
50 DEFINE ELEMENT                                current-total;
51     /* DATE OF LAST CHANGE - May 25, 1984, 00:01:07 */
52     SYNONYMS ARE:  cu-to;
53     DESCRIPTION;
54 It indicates the current amount of account.;
55     TRACE-KEY IS:  'level-3',
56                   'level-3.2',
57                   'level-2',
58                   'level-1';
59     CONTAINED IN:  general-ledger-account,
60                   account-information;
61     VALUES ARE:
62         -100000000.000000
63         THRU          100000000.000000;
64
65 DEFINE ELEMENT                                day;
66     /* DATE OF LAST CHANGE - May 25, 1984, 00:01:07 */
67     SYNONYMS ARE:  d;
68     DESCRIPTION;
69 It indicates the day in a month.;
70     TRACE-KEY IS:  'level-3',
71                   'level-3.2',
72                   'level-2',
73                   'level-1';
74     CONTAINED IN:  date-of-entry;
75     VALUES ARE:
76         1 THRU          31;
77
78 DEFINE ELEMENT
79 journal-entry-number;
80     /* DATE OF LAST CHANGE - May 25, 1984, 00:01:07 */
81     SYNONYMS ARE:  j-e-n;
82     DESCRIPTION;
83 It keeps a sequence number to identify the
84 account entered for a fiscal year.;
85     TRACE-KEY IS:  'level-3',
86                   'level-3.2',
87                   'level-2',
88                   'level-1';
89     CONTAINED IN:  entered-account,
90                   previous-entered-account;
91     VALUES ARE:
92         1 THRU          999999;
93
94 DEFINE ELEMENT                                month;
95     /* DATE OF LAST CHANGE - May 25, 1984, 00:01:07 */
```

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```
96     SYNONYMS ARE:  m;
97     DESCRIPTION;
98 It indicates the month in a year.;
99     TRACE-KEY IS:  'level-3',
100                    'level-3.2',
101                    'level-2',
102                    'level-1';
103     CONTAINED IN:  date-of-entry;
104     VALUES ARE:
105         1 THRU           12;
106
107 DEFINE ELEMENT                                previous-year-total;
108     /*  DATE OF LAST CHANGE - May 25, 1984, 00:01:07 */
109     SYNONYMS ARE:  p-y-to;
110     DESCRIPTION;
111 It keeps the previous year account amount.;
112     TRACE-KEY IS:  'level-3',
113                    'level-3.2',
114                    'level-2',
115                    'level-1';
116     CONTAINED IN:  general-ledger-account,
117                    account-information;
118     VALUES ARE:
119         -100000000.000000
120         THRU           100000000.000000;
121
122 DEFINE ELEMENT
123 request-balance-sheet;
124     /*  DATE OF LAST CHANGE - May 25, 1984, 00:01:07 */
125     SYNONYMS ARE:  b-s-re;
126     DESCRIPTION;
127 It indicates the request for balance sheet.;
128     TRACE-KEY IS:  'level-3.2';
129     CONTAINED IN:  request-financial-report;
130     USED BY:
131         print-ledger-sheet
132         TO DERIVE      balance-sheet;
133
134 DEFINE ELEMENT
135 request-income-statement;
136     /*  DATE OF LAST CHANGE - May 25, 1984, 00:01:07 */
137     SYNONYMS ARE:  i-s-re;
138     DESCRIPTION;
139 It indicates the request for income statement.;
140     TRACE-KEY IS:  'level-3.2';
141     CONTAINED IN:  request-financial-report;
142     USED BY:
143         print-income-statement
144         TO DERIVE      income-statement;
145
146 DEFINE ELEMENT
```


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```
147 request-ledger-sheet;
148 /* DATE OF LAST CHANGE - May 25, 1984, 00:01:07 */
149 SYNONYMS ARE: l-s-re;
150 DESCRIPTION;
151 It show the list of account changes.;
152 TRACE-KEY IS: 'level-3.2';
153 CONTAINED IN: request-financial-report;
154 USED BY:
155     print-ledger-sheet
156     TO DERIVE     ledger-sheet;
157
158 DEFINE ELEMENT
159 request-trial-balance;
160 /* DATE OF LAST CHANGE - May 25, 1984, 00:01:07 */
161 SYNONYMS ARE: r-t-b;
162 DESCRIPTION;
163 It indicates the request for trail-balance.;
164 TRACE-KEY IS: 'level-3.2';
165 CONTAINED IN: request-financial-report;
166
167 DEFINE ELEMENT
168     source-code;
169 /* DATE OF LAST CHANGE - May 25, 1984, 00:01:07 */
170 SYNONYMS ARE: s-c;
171 DESCRIPTION;
172 It indicates which system the accounts come from:
173 (1) the account receivable system
174 (2) the account payable system
175 (3) the payroll system
176 (4) the adjustment entry.;
177 TRACE-KEY IS: 'level-1',
178               'level-2',
179               'level-3',
180               'level-3.2';
181 CONTAINED IN: entered-account,
182               account-entry,
183               adjust-account-entry;
184 VALUES ARE:
185     1 THRU     4;
186
187 DEFINE ELEMENT
188     subcategory-number;
189 /* DATE OF LAST CHANGE - May 25, 1984, 00:01:07 */
190 SYNONYMS ARE: su-nb;
191 DESCRIPTION;
192 It is an extension to the category number
193 which is a part of account number.;
194 TRACE-KEY IS: 'level-3',
195               'level-3.2',
196               'level-2',
197               'level-1';
198 CONTAINED IN: account-number;
199 VALUES ARE:
```

```
198          0 THRU          99999;
199
200 DEFINE ELEMENT                                update-code;
201     /* DATE OF LAST CHANGE - May 25, 1984, 00:01:07 */
202     SYNONYMS ARE:  up-c;
203     DESCRIPTION;
204 It indicates the entered-account-record is used
205 to update the general-ledger-file or not.
206 1) when the entered-account-record is not used to
207     update the general-ledger-file yet.
208 2) when the entered-account-record
209     was used to update the general-ledger-file.;
210     TRACE-KEY IS:  'level-3',
211                   'level-3.2',
212                   'level-2',
213                   'level-1';
214     CONTAINED IN:  entered-account;
215
216 DEFINE ELEMENT                                value-of-account;
217     /* DATE OF LAST CHANGE - May 25, 1984, 00:01:07 */
218     SYNONYMS ARE:  v-o-acc;
219     DESCRIPTION;
220 This element represents the amount in each account.;
221     TRACE-KEY IS:  'level-3',
222                   'level-3.2',
223                   'level-2',
224                   'level-1';
225     CONTAINED IN:  entered-account,
226                   previous-entered-account,
227                   account-entry,
228                   adjust-account-entry;
229     VALUES ARE:
230         -100000000.000000
231         THRU          100000000.000000;
232
233 DEFINE ELEMENT                                year-to-now-total;
234     /* DATE OF LAST CHANGE - May 25, 1984, 00:01:07 */
235     SYNONYMS ARE:  y-t-n-t;
236     DESCRIPTION;
237 This element is part of the general-ledger account.
238 It is used to put the year to the now value for
239 the revenues and the expense accounts.;
240     TRACE-KEY IS:  'level-3',
241                   'level-3.2',
242                   'level-2',
243                   'level-1';
244     CONTAINED IN:  general-ledger-account,
245                   account-information;
246     VALUES ARE:
247         -100000000.000000
248         THRU          100000000.000000;
```


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```
300         'level-1',
301         'level-2',
302         'level-3',
303         'level-3.2';
304 COLLECTED IN: general-ledger-file;
305 CONSISTS OF:
306     account-number,
307     account-name,
308     account-type,
309     current-total,
310     year-to-now-total,
311     previous-year-total;
312 IDENTIFIED BY: account-number;
313 ADDED TO:
314     general-ledger-file
315     BY account-maintain;
316 ADDED TO:
317     general-ledger-file
318     BY maintain-account-information;
319 MODIFIED IN:
320     general-ledger-file
321     BY account-maintain;
322 MODIFIED IN:
323     general-ledger-file
324     BY maintain-account-information;
325 REFERENCED IN:
326     general-ledger-file
327     BY account-maintain;
328 REFERENCED IN:
329     general-ledger-file
330     BY enter-account-entries;
331 REMOVED FROM:
332     general-ledger-file
333     BY account-maintain;
334 REMOVED FROM:
335     general-ledger-file
336     BY maintain-account-information;
337
338 DEFINE GROUP account-number;
339     /* DATE OF LAST CHANGE - May 25, 1984, 00:01:07 */
340     SYNONYMS ARE: acc-nb;
341     DESCRIPTION;
342 It identifies a particular account in the
343 general-ledger-file. It contains the category
344 and sub-category numbers.;
345     TRACE-KEY IS: 'level-3',
346                 'level-3.2',
347                 'level-2',
348                 'level-1';
349     CONSISTS OF:
350         category-number,
```

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```
351     subcategory-number;
352     CONTAINED IN:  entered-account,
353                   general-ledger-account,
354                   previous-entered-account,
355                   account-entry,
356                   account-information,
357                   adjust-account-entry;
358     IDENTIFIES:   general-ledger-account;
359     ORDERS:       general-ledger-file;
360
361     DEFINE GROUP                                     date-of-entry;
362     /* DATE OF LAST CHANGE - May 25, 1984, 00:01:07 */
363     SYNONYMS ARE:  d-of-e;
364     DESCRIPTION;
365     This element represents the date of making an entry.;
366     TRACE-KEY IS:  'level-3',
367                   'level-3.2',
368                   'level-2',
369                   'level-1';
370     CONSISTS OF:
371         day,
372         month;
373     CONTAINED IN:  entered-account,
374                   previous-entered-account,
375                   account-entry,
376                   adjust-account-entry;
377
378     DEFINE INPUT
379     request-financial-report;
380     /* DATE OF LAST CHANGE - May 25, 1984, 00:01:07 */
381     SYNONYMS ARE:  r-f-r;
382     DESCRIPTION;
383     This data indicates the requests on
384     the financial reports.;
385     TRACE-KEY IS:  'level-c',
386                   'level-0',
387                   'level-3',
388                   'level-3.2';
389     GENERATED:    BY chief-accountant;
390     RECEIVED:     BY general-ledger-processing,
391                   BY report-generator,
392                   BY print-financial-report,
393                   BY print-ledger-sheet,
394                   BY produce-trial-balance,
395                   BY print-balance-sheet,
396                   BY print-income-statement;
397     CONSISTS OF:
398         request-balance-sheet,
399         request-ledger-sheet,
400         request-income-statement,
401         request-trial-balance;
```


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```

453 .
454 . . . . .
455 .
456 . . . . .
457 .
458 . . . . .
459 .
460 TOTAL ASSETS ...
461 X,XXX.XX
462
463
464
465
466 LIABILITIES &
467
468 STOCKHOLDER' EQUITY
469
470
471
472 CURRENT LIABILITY
473
474
475
476
477
478 SALES TAX PAYABLE $ XX,XXX,XXX.XX
479
480 INCOME TAX PAYABLE
481
482 FEDERAL XX,XXX,XXX.XX
483
484 STATE <XX,XXX,XXX...
485
486 ...
487 X,XXX.XX
488 . . . . .
489 .
490 . . . . .
491 .
492 . . . . .
493 .
494 . . . . .
495 .
496 TOTAL LIAB & STOCKHOLDER'S EQ ...
497 X,XXX.XX
498 ;
499
500 DEFINE OUTPUT income-statement;
501 /* DATE OF LAST CHANGE - May 25, 1984, 00:01:07 */
502 SYNONYMS ARE: i-s;
503 DESCRIPTION;

```

UNIVERSITY OF MONTANA PSA/PSL
Formatted Problem Statement

504 This report shows the net profit for a
505 certain period of time.;
506 TRACE-KEY IS: 'level-3.2';
507 GENERATED: BY print-income-statement;
508 PART OF: financial-report;
509 DERIVED BY: print-income-statement
510 USING: general-ledger-file,
511 request-income-statement;
512 LAYOUT;

513
514
515
516

XXXXXXXXXXXXXXXXX COM...

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519
520

INCOME STATEMENT

521
522
523

PAGE x OF x

524
525
526

FOR THE YEAR (PERIOD) ENDI...

527
528
529

530
531
532

REVENUES

533
534
535

SALE OF GOODS

536
537
538

FINISHED GOODS ...

539
540
541

SALES RETURNS & ALLOWANCES ...

542
543
544

TOTAL
\$ XX,XXX,XXX.XX

TOTAL

545
546
547

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549
550

TOTAL REVENUES
\$ XX,XXX,XXX.XX

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UNIVERSITY OF MONTANA PSA/PSL
Formatted Problem Statement
EXPENSES

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COST OF INCOME

COST OF SALE OF GOODS ...
COST OF CONSULTING ...
ROYALTY PAYMENTS ...
VARIANCE EEPENSES ...

TOTAL

\$ XX,XXX,XXX.XX

. . .
. . .
. . .
. . .

TOTAL EXPENSES

\$ XX,XXX,XXX.XX

DEFINE OUTPUT

ledger-sheet;

/* DATE OF LAST CHANGE - May 25, 1984, 00:01:07 */
SYNONYMS ARE: f-f;
DESCRIPTION;

This report shows the flow in each account
in a period of time.;

TRACE-KEY IS: 'level-3.2';
GENERATED: BY print-ledger-sheet;
PART OF: financial-report;
DERIVED BY: print-ledger-sheet
USING: entered-account-file,
general-ledger-file,
request-ledger-sheet;

LAYOUT;

XXXXXXXXXXXXXXXXXX

COMPANY

XX/XX/XX

```

606
607
608 GE      X
609
610
611
612
613          ACCOUNT      SOURCE      JOURNAL
614
615          NO.           CODE        ENTRY NO.   DATE        DR ...
616
617          -----      -
618 -----
619          XXXXXX        A/R        XXXXXX      XX/XX/XX    XX, ...
620
621          A/P          XXXXXX      XX/XX/XX    ...
622 XX,XXX.XX
623          P/R          XXXXXX      XX/XX/XX    XX, ...
624
625          ADJ          XXXXXX      XX/XX/XX    XX, ...
626
627          A/R          XXXXXX      XX/XX/XX    XX, ...
628
629          A/P          XXXXXX      XX/XX/XX    XX, ...
630
631          A/P          XXXXXX      XX/XX/XX    ...
632 XX,XXX.XX
633          P/R          XXXXXX      XX/XX/XX    XX, ...
634
635
636
637
638 (OR CR)
639
640
641
642
643          ACCOUNT NAME
644
645          XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
646
647
648
649
650
651          OPENING BALANCE  XX,XXX,XXX.XXDR (OR CR)
652
653          COLSING BALANCCE XX,XXX,XXX.XXDR (OR CR)
654
655
656
    
```


UNIVERSITY OF MONTANA PSA/PSL
Formatted Problem Statement

```
759 (* print the title *)
760 WRITE the "XXXXXXXXXXXXX COMPANY" line.
761 INCREASE line-number by 4.
762 (* end of printing the title *)
763
764 REPEAT the following :
765
766 (* print the heading *)
767 WRITE the "BALANCE SHEET ... PAGE x OF x".
768 INCREASE line-number by 5.
769 (* end of printing the heading *)
770
771 REPEAT the following:
772 READ the general-ledger-account from
773 general-ledger-file.
774 IF category-number is 1 or 2,
775 THEN ,
776 SELECT the case which applies:
777 CASE1: (account-type is 'hading')
778 DECREASE index by 1.
779 WRITE account-name.
780 CASE2: (account-type is 'regular')
781 WRITE account-name.
782 IF current-total is postive,
783 THEN,
784 WRITE current-total
785 in the value column.
786 OTHERWISE,
787 WRITE "<abs(current-total)>"
788 in the value column.
789 ADD current-total to
790 acc[index] through acc[8].
791 CASE3: (account-type is 'total')
792 WRITE account-name.
793 IF acc[index] is postive,
794 THEN,
795 WRITE acc[index]
796 in the total column.
797 OTHERWISE,
798 WRITE "<abs(acc[index])>"
799 in the total column.
800 CLEAN acc[0] through acc[index] to 0.
801 INCREASE the index by 1.
802 INCREASE line-number by 1.
803 OTHERWISE,
804 DISPLAY "This account is not ASSETS OR LIB".
805 UNTIL line-number equal 50 OR the category-number
806 greater than 2.
807 INCREASE page-number by 1.
808 SET line-number to 1.
809 UNTIL the category-number grater than 2.
```

UNIVERSITY OF MONTANA PSA/PSL

Formatted Problem Statement

```
810 *****
811 ;
812
813 DEFINE PROCESS
814 print-income-statement;
815     /* DATE OF LAST CHANGE - May 25, 1984, 00:01:07 */
816     SYNONYMS ARE: p-in-s;
817     DESCRIPTION;
818 This process produces the income statement to
819 show the loss and earnings of the business in
820 a period of time.;
821     TRACE-KEY IS: 'level-3.2';
822     GENERATES:
823         income-statement;
824     RECEIVES:
825         request-financial-report;
826     PART OF:     print-financial-report;
827     DERIVES:     income-statement
828     USING:       general-ledger-file,
829                 request-income-statement;
830     PROCEDURE;
831 *****
832 (*Please reference the layout report
833 for the income statement *)
834 SET the accumulators to 0
835     (acc[0],acc[1],acc[2].....acc[7],acc[8]).
836 SET index of accumulator to 8 (acc[index]).
837 SET page-number and line-number to 1.
838 TAKE date.
839
840 (* print the title *)
841 WRITE the "XXXXXXXXXXXXX COMPANY" line.
842 INCREASE line-number by 4.
843 (* end of printing the title *)
844
845 REPEAT the following :
846
847 (* print the heading *)
848 WRITE the "INCOME STATEMENT ... PAGE x OF x".
849 INCREASE line-number by 5.
850 (* end of printing the heading *)
851
852     REPEAT the following:
853         READ the general-ledger-account from
854             general-ledger-file.
855         IF category-number is 3 or 4,
856             THEN ,
857             SELECT the case which applies:
858                 CASE1: (account-type is 'hading')
859                     DECREASE index by 1.
860                     WRITE account-name.
```

UNIVERSITY OF MONTANA PSA/PSL
Formatted Problem Statement

```
861 CASE2: (account-type is 'regular')
862 WRITE account-name.
863 IF current-total is postive,
864 THEN,
865 WRITE current-total
866 in the value column.
867 OTHERWISE,
868 WRITE "<abs(current-total)>"
869 in the value column.
870 ADD current-total
871 to acc[index] through acc[8].
872 CASE3: (account-type is 'total')
873 WRITE account-name.
874 IF acc[index] is postive,
875 THEN,
876 WRITE acc[index]
877 in the total column.
878 OTHERWISE,
879 WRITE "<abs(acc[index])>"
880 in the total column.
881 CLEAN acc[0] through acc[index] to 0.
882 INCREASE the index by 1.
883 INCREASE line-number by 1.
884 OTHERWISE,
885 DISPLAY "This account not for this report"
886 UNTIL line-number equal 50 OR end
887 of the general-ledger-file.
888 INCREASE page-number by 1.
889 SET line-number to 1.
890 UNTIL the end of the general-ledger-file.
891 *****
892 ;
893
894 DEFINE PROCESS print-ledger-sheet;
895 /* DATE OF LAST CHANGE - May 25, 1984, 00:01:07 */
896 SYNONYMS ARE: p-f-f;
897 DESCRIPTION;
898 This process produces the ledger sheet
899 according to the request.;
900 TRACE-KEY IS: 'level-3.2';
901 GENERATES:
902 ledger-sheet;
903 RECEIVES:
904 request-financial-report;
905 PART OF: print-financial-report;
906 DERIVES: ledger-sheet
907 USING: entered-account-file,
908 general-ledger-file,
909 request-ledger-sheet;
910 DERIVES: balance-sheet
911 USING: request-balance-sheet;
```

```
912       PROCEDURE;
913 *****
914 (*Please reference the layout report
915 for the ledger sheet*)
916 TAKE date.
917 SET page-number and line-number to 1.
918
919 (* print the title *)
920 WRITE the "XXXXXXXXXXXXX                      COMPANY ....xx/xx/xx".
921 WRITE the "LEDGER                      SHEET ... PAGE x OF x" line.
922 INCREASE line-number by 6.
923 (* end of printing title *)
924
925 REPEAT the following:
926
927       SET net-change to 0.
928       READ   general-ledger-account from the
929                                      general-ledger-file.
930       IF   account-type is 0 (regular),
931       THEN,
932       REPEAT the following :
933               REPEAT the following:
934
935                       (* print heading *)
936                       WRITE the "ACCOUNT SOURCE JOURNAL
937                                                              AMOUNT" lines.
938                       INCREASE the line-number by 3.
939                       (* end of printing heading *)
940
941               READ the entered-account from the
942                                      entered-account-file.
943               IF the account-number of the
944                       entered-account and the
945                       general-ledger-account are equal.
946               THEN ,
947                       WRITE account-number.
948                       SELECT the case which applies:
949                               CASE1: (source-code is 1)
950                                       SOURCE = "A/R".
951                               CASE2: (source0code is 2)
952                                       SOURCE = "A/P".
953                               CASE3: (source-code is 3)
954                                       SOURCE = "P/R".
955                       WRITE SOURCE,
956                               journal-entry-number ,date.
957                       SELECT the case which applies:
958                               CASE1 :
959                                       (value-of-account is postive)
960                                       WRITE the value-of-account
961                                                              in CR column.
962                               CASE2 :
```


UNIVERSITY OF MONTANA PSA/PSL

Formatted Problem Statement

```
963 (value-of-account is negative)
964 WRITE abs(value-of-account)
965 in DR column.
966 ADD the value-of-account to
967 net-change.
968 UNTIL end of file entered-account-file or
969 line-number>50.
970 SET line-number to 1.
971 INCREASE page-number by 1.
972 UNTIL end of file entered-account-file.
973 WRITE "NET CHANGE ",abs(net-change).
974 IF net-change > 0 THEN WRITELN "CR",
975 OTHERWISE WRITELN "DR".
976 WRITE the "ACCOUNT NAME ..." line.
977 WRITE the account-name line.
978 WRITE "OPEN BALANCE",abs(current-total) following
979 by "CR" or "DR".
980 IF current-total > 0 THEN WRITE "CR" ,
981 OTHERWISE WRITE the "DR" .
982 WRITE "CLOSE BALANCE",abs(net-change+current-total)
983 following by "CR" or "DR".
984 IF net-change+current-total > 0 THEN WRITE "CR" ,
985 OTHERWISE WRITELN "DR".
986 UNTIL the end of general-ledger-file.
987 *****
988 ;
989
990 DEFINE PROCESS
991 produce-trial-balance;
992 /* DATE OF LAST CHANGE - May 25, 1984, 00:01:07 */
993 SYNONYMS ARE: p-t-b;
994 DESCRIPTION;
995 This process produces the trial balance to make
996 the accounts balance and provide the information
997 for making an adjustment.;
998 TRACE-KEY IS: 'level-3.2';
999 GENERATES:
1000 trial-balance;
1001 RECEIVES:
1002 request-financial-report;
1003 PART OF: print-financial-report;
1004 DERIVES: trial-balance
1005 USING: entered-account-file,
1006 general-ledger-file;
1007 PROCEDURE;
1008 *****
1009 (*Please reference the layout report
1010 for the trial balance*)
1011 TAKE date.
1012 SET page-number and line-number to 1.
1013 SET amount,credit and debit are 0.
```

```
1014
1015 (* print the title *)
1016 WRITE the "XXXXXXXXXXXXX            COMPANY ... xx/xx/xx".
1017 INCREASE line-number by 4.
1018 (* end of printing title *)
1019
1020 REPEAT the following:
1021
1022        (* print the heading *)
1023        WRITE the "TRIAL BALANCE SHEET ... PAGE x of x".
1024        WRITE the "ACCOUNT ACCOUNT AMOUNT ....." lines.
1025        INCREASE line-number by 8.
1026        (* end of printing the heading *)
1027
1028 REPEAT the following:
1029
1030        READ the general-ledger-account from
1031                                      general-ledger-file.
1032        IF account-type in general-ledger-account
1033                                      is 0 (regular),
1034        THEN,
1035            REPEAT the following:
1036                READ entered-account from
1037                                      entered-account-file.
1038                IF account-number entered-account and
1039                                      general-ledger-account are equal.
1040                THEN ,
1041                    ADD value-of-account to amount.
1042                    IF value-of-account is postive.
1043                        THEN,
1044                        ADD value-of-account to credit.
1045                        OTHERWISE,
1046                        ADD value-of-account to debit.
1047                UNTIL end of entered-account-file.
1048        WRITE account-number,account-name.
1049        IF amount is postive,
1050            THEN,
1051                WRITE the amount in the CR colmun.
1052                OTHERWISE,
1053                WRITE the abs(amount) in the DR column.
1054        UNTIL line-number equal 50 OR end of
1055                                      general-ledger-file.
1056        SET line-number to 1.
1057        INCREASE page-number by 1.
1058 UNTIL the end of general-ledger-file.
1059 WRITE the "TOTAL        ",debit," = ",credit line.
1060 *****
1061 ;
1062
1063 DEFINE SET
1064 entered-account-file;
```

UNIVERSITY OF MONTANA PSA/PSL
Formatted Problem Statement

```
1065 /* DATE OF LAST CHANGE - May 25, 1984, 00:01:07 */
1066 SYNONYMS ARE: e-t-f;
1067 DESCRIPTION;
1068 This file contains the whole entered accounts and
1069 adjusted accounts. It keeps the whole trail for a
1070 period of the business. It will be used to update
1071 the general-ledger-file and append to the
1072 previous-entered-account-file.;
1073 TRACE-KEY IS: 'level-0',
1074                'level-1',
1075                'level-2',
1076                'level-3',
1077                'level-3.2';
1078 COLLECTION OF:
1079     entered-account;
1080 HAS: entered-account
1081     ADDED BY     account-maintain;
1082 HAS: entered-account
1083     ADDED BY     enter-account-entries;
1084 HAS: entered-account
1085     ADDED BY     adjust-account-entries;
1086 USED BY:
1087     report-generator
1088     TO DERIVE    account-report;
1089 USED BY:
1090     print-list-of-account-entries
1091     TO DERIVE    list-of-account-entries;
1092 USED BY:
1093     print-ledger-sheet
1094     TO DERIVE    ledger-sheet;
1095 USED BY:
1096     produce-trial-balance
1097     TO DERIVE    trial-balance;
1098 HAS: entered-account
1099     REFERENCED BY adjust-account-entries;
1100 HAS: entered-account
1101     REMOVED BY   account-update;
1102 HAS: entered-account
1103     REMOVED BY   clean-old-entries;
1104 USED BY:
1105     account-update
1106     TO UPDATE    general-ledger-file;
1107 USED BY:
1108     update-general-ledger
1109     TO UPDATE    general-ledger-file;
1110 EMPLOYED BY:    clean-old-entries;
1111
1112 DEFINE SET                                general-ledger-file;
1113 /* DATE OF LAST CHANGE - May 25, 1984, 00:01:07 */
1114 SYNONYMS ARE: g-l-f;
1115 DESCRIPTION;
```

UNIVERSITY OF MONTANA PSA/PSL

Formatted Problem Statement

1116 This file contains ledger, total, title and heading
1117 accounts. It keeps the all information about
1118 general ledger account. So, It always is in balance.
1119 It is used to produced the financial reports.;

1120 TRACE-KEY IS: 'level-0',
1121 'level-1',
1122 'level-2',
1123 'level-3',
1124 'level-3.2';

1125 COLLECTION OF:
1126 general-ledger-account;
1127 ORDERED BY: account-number;
1128 HAS: general-ledger-account
1129 ADDED BY account-maintain;
1130 HAS: general-ledger-account
1131 ADDED BY maintain-account-information;
1132 USED BY:
1133 report-generator
1134 TO DERIVE financial-report;
1135 USED BY:
1136 report-generator
1137 TO DERIVE account-report;
1138 USED BY:
1139 print-chart-of-account
1140 TO DERIVE chart-of-account;
1141 USED BY:
1142 print-ledger-sheet
1143 TO DERIVE ledger-sheet;
1144 USED BY:
1145 produce-trial-balance
1146 TO DERIVE trial-balance;
1147 USED BY:
1148 print-balance-sheet
1149 TO DERIVE balance-sheet;
1150 USED BY:
1151 print-income-statement
1152 TO DERIVE income-statement;
1153 MAINTAINED BY: account-maintain
1154 USING : account-information;
1155 MAINTAINED BY: maintain-account-information
1156 USING : account-information;
1157 HAS: general-ledger-account
1158 MODIFIED BY account-maintain;
1159 HAS: general-ledger-account
1160 MODIFIED BY maintain-account-information;
1161 HAS: general-ledger-account
1162 REFERENCED BY account-maintain;
1163 HAS: general-ledger-account
1164 REFERENCED BY enter-account-entries;
1165 HAS: general-ledger-account
1166 REMOVED BY account-maintain;

UNIVERSITY OF MONTANA PSA/PSL
Formatted Problem Statement

1167 HAS: general-ledger-account
1168 REMOVED BY maintain-account-information;
1169 UPDATED BY: account-update
1170 USING: entered-account-file;
1171 UPDATED BY: update-general-ledger
1172 USING: entered-account-file;
1173 UPDATED BY: clean-revenues-expense;
1174 UPDATED BY: end-of-year-update;
1175
1176 EOF EOF EOF EOF EOF

UNIVERSITY OF MANTANA PSA/PSL
Name Selection

Parameters: DB=ccw.dbf PRINT PUNCH=PSANAM.TMP EMPTY
SELECTION='LAYOUT' ORDER=BYTYPE

1	audit-trail	output
2	balance-sheet	output
3	chart-of-account	output
4	income-statement	output
5	ledger-sheet	output
6	list-of-account-entries	output
7	trial-balance	output

UNIVERSITY OF MONTANA PSA/PSL

Layout Report

Parameters: DB=CCW.DBF FILE=PSANAM.TMP PUNCH=PSALO.TMP WIDTH=132

1* audit-trail

11111111112222222222333333333344444444445555555555666666666677777777778888888888999999999900000000001111111111222222
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XXXXXXXXXXXXX COMPANY

XX/XX/XX
TO
XX/XX/XX

AUDIT TRAIL

PAGE x OF x

JOURNAL ENTRY NO.	ENTRY DATE	ACCOUNT NO.	SOURCE CODE	ACCOUNT	NAME	DR	AMOUNT	CR
XXXXXX	XX/XX/XX	XXXXXX	A/R	XXXXXXXXXXXXXXXXXXXXXXXXXXXX		XX,XXX,XXX.XX		
XXXXXX	XX/XX/XX	XXXXXX	A/P	XXXXXXXXXXXXXXXXXXXXXXXXXXXX		XX,XXX,XXX.XX		
XXXXXX	XX/XX/XX	XXXXXX	P/R	XXXXXXXXXXXXXXXXXXXXXXXXXXXX			XX,XXX,XXX.XX	
XXXXXX	XX/XX/XX	XXXXXX	A/P	XXXXXXXXXXXXXXXXXXXXXXXXXXXX		XX,XXX,XXX.XX		
XXXXXX	XX/XX/XX	XXXXXX	A/R	XXXXXXXXXXXXXXXXXXXXXXXXXXXX		XX,XXX,XXX.XX		
XXXXXX	XX/XX/XX	XXXXXX	A/P	XXXXXXXXXXXXXXXXXXXXXXXXXXXX			XX,XXX,XXX.XX	
XXXXXX	XX/XX/XX	XXXXXX	P/R	XXXXXXXXXXXXXXXXXXXXXXXXXXXX		XX,XXX,XXX.XX		
XXXXXX	XX/XX/XX	XXXXXX	A/P	XXXXXXXXXXXXXXXXXXXXXXXXXXXX		XX,XXX,XXX.XX		
XXXXXX	XX/XX/XX	XXXXXX	A/R	XXXXXXXXXXXXXXXXXXXXXXXXXXXX		XX,XXX,XXX.XX		
XXXXXX	XX/XX/XX	XXXXXX	ADJ	XXXXXXXXXXXXXXXXXXXXXXXXXXXX		XX,XXX,XXX.XX		

PSA352:No more lines left in LAYOUT. The rest are blanked.

Layout Report

3* chart-of-account

1111111111222222222333333333444444444555555555666666666777777777888888888999999999000000000111111111222222
 123456789012345678901234567890123456789012345678901234567890123456789012345678901234567890123456789012345

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XXXXXXXXXXXXXXXXX COMPANY
 CHART OF ACCOUNT AS OF **/**/** PAGE x OF x

*** BALANCE SHEET ***

ACCT NO	ACCT	NAME	TYPE	AMOUNT
XXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX		TITLE	\$
XXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX		HEADING	
XXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX		REGULAR	XX,XXX,XXX.XXCR
XXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX		REGULAR	XX,XXX,XXX.XXCR
XXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX		TOTAL	

*** INCOME STATEMENT ***

ACCT NO	ACCT	NAME	TYPE	AMOUNT
XXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX		TITLE	
XXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX		HEADING	
XXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX		REGULAR	XX,XXX,XXX.XXCR
XXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX		REGULAR	XX,XXX,XXX.XXCR
XXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX		TOTAL	

PSA352:No more lines left in LAYOUT. The rest are blanked.

Layout Report

4* income-statement

1111111111222222222333333333334444444445555555556666666667777777778888888889999999990000000001111111111222222
 123456789012345678901234567890123456789012345678901234567890123456789012345678901234567890123456789012345

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XXXXXXXXXXXXX COMPANY

INCOME STATEMENT

PAGE x OF x

FOR THE YEAR (PERIOD) ENDING XX/XX/XX

REVENUES

SALE OF GOODS

FINISHED GOODS

\$ XX,XXX,XXX.XX

SALES RETURNS & ALLOWANCES

<XX,XXX,XXX.XX>

TOTAL

\$ XX,XXX,XXX.XX

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TOTAL REVENUES

\$ XX,XXX,XXX.XX

EXPENSES

COST OF INCOME

COST OF SALE OF GOODS

\$ XX,XXX,XXX.XX

COST OF CONSULTING

XX,XXX,XXX.XX

ROYALTY PAYMENTS

XX,XXX,XXX.XX

VARIANCE EXPENSES

<XX,XXX,XXX.XX>

TOTAL

\$ XX,XXX,XXX.XX

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.

TOTAL EXPENSES

\$ XX,XXX,XXX.XX

PSA352:No more lines left in LAYOUT. The rest are blanked.

Layout Report

5* ledger-sheet

11111111112222222223333333334444444445555555556666666667777777778888888889999999990000000001111111111222222
 123456789012345678901234567890123456789012345678901234567890123456789012345678901234567890123456789012345

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XXXXXXXXXXXXXXXX			COMPANY		XX/XX/XX	
LEDGER			SHEET		PAGE X	
ACCOUNT NO.	SOURCE CODE	JOURNAL ENTRY NO.	DATE	DR	AMOUNT CR	
XXXXXX	A/R	XXXXXX	XX/XX/XX	XX,XXX,XXX.XX		
	A/P	XXXXXX	XX/XX/XX		XX,XXX,XXX.XX	
	P/R	XXXXXX	XX/XX/XX	XX,XXX,XXX.XX		
	ADJ	XXXXXX	XX/XX/XX	XX,XXX,XXX.XX		
	A/R	XXXXXX	XX/XX/XX	XX,XXX,XXX.XX		
	A/P	XXXXXX	XX/XX/XX	XX,XXX,XXX.XX		
	A/P	XXXXXX	XX/XX/XX		XX,XXX,XXX.XX	
	P/R	XXXXXX	XX/XX/XX	XX,XXX,XXX.XX		
NET CHANGE				XX,XXX,XXX.XX	DR (OR CR)	

ACCOUNT NAME
 XXXXXXXXXXXXXXXXXXXXXXXXXXXX
 OPENING BALANCE XX,XXX,XXX.XX DR (OR CR)
 CLOSING BALANCE XX,XXX,XXX.XX DR (OR CR)

P.S. FOR EVERY REGULAR ACCOUNT
 PSA352: no more lines left in LAYOUT. The rest are blanked.

=====
APPENDIX B DESIGN DOCUMENTATION
=====

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Formatted Statements

Parameters: LANGUAGE=pds1 DB=olive.dbf FILE=par.data
PRINT NOPUNCH HSMARG=0 HNMARG=20 SMARG=1 NMARG=25
TMARG=0 SRMARG=80 ONE-PER-LINE DLC-COMMENT

```
1
2 DEFINE DATA-STRUCTURE
3         entered-acc-record;
4 # Last changed - May 26, 1984 15:42:46
5     SYNONYMS ARE             e-l-r;
6     DESCRIPTION;
7 This data-structure describe the file of the entered
8 account file.;
9     CONSTRUCTED OF           E-acc-number,
10                            E-acc-name,
11                            E-acc-value,
12                            E-source-code,
13                            E-update-indicator,
14                            E-date-of-entry,
15                            E-entry-number;
16     KEYWORD                  'record';
17
18 DEFINE DATA-STRUCTURE
19         general-ledger-record;
20 # Last changed - May 26, 1984 15:42:46
21     SYNONYMS ARE             g-l-r;
22     DESCRIPTION;
23 This data-structure describe the file of the general
24 ledger file.;
25     CONSTRUCTED OF           G-acc-number,
26                            G-acc-name,
27                            G-acc-current-total,
28                            G-acc-pre-total,
29                            G-acc-type;
30     KEYWORD                  'record';
31
32 DEFINE DATA-STRUCTURE
33         pre-entered-acc-record;
34 # Last changed - May 26, 1984 15:45:08
35     SYNONYMS ARE             p-e-l-r;
36     DESCRIPTION;
37 This data-structure describe the file of the previous
38 entered account file.;
39     CONSTRUCTED OF           P-acc-number,
40                            P-acc-name,
41                            P-acc-value,
42                            P-source-code,
43                            P-update-indicator,
44                            P-entry-number,
45                            P-date-of-entry;
46     KEYWORD                  'record';
47
48 DEFINE DEVICE                 entered-account-file;
49 # Last changed - May 26, 1984 15:47:36
50     SYNONYMS ARE             e-a-f;
51     DESCRIPTION;
```

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```
52 This file contains the whole entered entries and
53 adjusted entries. It keeps the whole trail for a
54 period of the business.;
55   ACCESSED                SEQUENTIAL;
56   FORMAT IS               RECORD;
57   DEVICE USAGE           input/output;
58   KEYWORD                 'files';
59
60 DEFINE DEVICE             gennreal-ledger-file;
61 # Last changed - May 26, 1984 15:47:36
62   SYNONYMS ARE           g-l-f;
63   DESCRIPTION;
64 This file keeps the all information about general
65 ledger account. It always is in balance.;
66   ACCESSED                DIRECT;
67   FORMAT IS               RECORD;
68   DEVICE USAGE           input/output;
69   KEYWORD                 'files';
70
71 DEFINE DEVICE             previous-entered-account-file;
72 # Last changed - May 26, 1984 15:47:36
73   SYNONYMS ARE           p-e-a-f;
74   DESCRIPTION;
75 This file keeps the trail for a fiscal year
76 of business.;
77   ACCESSED                SEQUENTIAL;
78   FORMAT IS               RECORD;
79   DEVICE USAGE           input/output;
80   KEYWORD                 'files';
81
82 DEFINE GLOBAL-VARIABLE
83   E-acc-name;
84 # Last changed - May 26, 1984 15:50:32
85   SYNONYMS ARE           e-a-nm;
86   DESCRIPTION;
87 This is a field in entered-account-file referring
88 to account name.;
89   KEYWORD                 'maintain-routine';
90   USED TO CONSTRUCT      entered-acc-record;
91   KNOWN-BY               print-ledger-sheet-line;
92
93 DEFINE GLOBAL-VARIABLE
94   E-acc-number;
95 # Last changed - May 26, 1984 15:50:32
96   SYNONYMS ARE           e-a-n;
97   DESCRIPTION;
98 This is a field in entered-account-file referring
99 to account number.;
100  KEYWORD                 'maintain-routine';
101  USED TO CONSTRUCT      entered-acc-record;
102  KNOWN-BY               update-G-L-F,
103                        print-ledger-sheet-line;
104
105 DEFINE GLOBAL-VARIABLE
106   E-acc-value;
```


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```
107 # Last changed - May 26, 1984 15:50:32
108 SYNONYMS ARE e-a-v;
109 DESCRIPTION;
110 This is a field in entered-account-file referring
111 to account valus.;
112 KEYWORD 'maintain-routine';
113 USED TO CONSTRUCT entered-acc-record;
114 KNOWN-BY update-G-L-F,
115 print-ledger-sheet-line;
116
117 DEFINE GLOBAL-VARIABLE
118 E-date-of-entry;
119 # Last changed - May 26, 1984 15:50:32
120 SYNONYMS ARE e-d-o-e;
121 DESCRIPTION;
122 This is a field in entered-account-file referring
123 to date of entry.;
124 KEYWORD 'maintain-routine';
125 USED TO CONSTRUCT entered-acc-record;
126 KNOWN-BY print-ledger-sheet-line;
127
128 DEFINE GLOBAL-VARIABLE
129 E-entry-number;
130 # Last changed - May 26, 1984 15:50:32
131 SYNONYMS ARE e-e-n;
132 DESCRIPTION;
133 This is a field in entered-account-file referring to
134 account number.;
135 KEYWORD 'maintain-routine';
136 USED TO CONSTRUCT entered-acc-record;
137 KNOWN-BY get-current-entry-number,
138 print-ledger-sheet-line;
139
140 DEFINE GLOBAL-VARIABLE
141 E-source-code;
142 # Last changed - May 26, 1984 15:50:32
143 SYNONYMS ARE e-s-c;
144 DESCRIPTION;
145 This is a field in entered-account-file referring
146 to source code.;
147 KEYWORD 'maintain-routine';
148 USED TO CONSTRUCT entered-acc-record;
149 KNOWN-BY print-ledger-sheet-line;
150
151 DEFINE GLOBAL-VARIABLE
152 E-update-indicator;
153 # Last changed - May 26, 1984 15:48:21
154 SYNONYMS ARE e-u-i;
155 DESCRIPTION;
156 This is a field in entered-account-file referring
157 to update indicator.;
158 KEYWORD 'maintain-routine';
159 USED TO CONSTRUCT entered-acc-record;
160 KNOWN-BY clean-old-entries,
161 end-of-year-update,
```

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```
162 update-G-L-F;
163
164 DEFINE GLOBAL-VARIABLE
165     G-acc-current-total;
166 # Last changed - May 26, 1984 15:50:32
167     SYNONYMS ARE          g-a-c-t;
168     DESCRIPTION;
169 This is a field in general-ledger-file referring to
170 account current total.;
171     KEYWORD                'maintain-routine';
172     USED TO CONSTRUCT     general-ledger-record;
173     KNOWN-BY              clean-revenues-expense,
174                           end-of-year-update,
175                           update-G-L-F,
176                           print-income-statement-line,
177                           print-chart-of-acc-line;
178
179 DEFINE GLOBAL-VARIABLE
180     G-acc-name;
181 # Last changed - May 26, 1984 15:50:32
182     SYNONYMS ARE          g-a-nm;
183     DESCRIPTION;
184 This is a field in general-ledger-file referring to
185 account name.;
186     KEYWORD                'maintain-routine';
187     USED TO CONSTRUCT     general-ledger-record;
188     KNOWN-BY              add-g-l-record,
189                           print-income-statement-line,
190                           print-chart-of-acc-line;
191
192 DEFINE GLOBAL-VARIABLE
193     G-acc-number;
194 # Last changed - May 26, 1984 15:50:32
195     SYNONYMS ARE          g-a-n;
196     DESCRIPTION;
197 This is a field in general-ledger-file referring to
198 account number.;
199     KEYWORD                'maintain-routine';
200     USED TO CONSTRUCT     general-ledger-record;
201     KNOWN-BY              add-g-l-record,
202                           clean-revenues-expense,
203                           end-of-year-update,
204                           update-G-L-F,
205                           print-chart-of-acc-line;
206
207 DEFINE GLOBAL-VARIABLE
208     G-acc-pre-total;
209 # Last changed - May 26, 1984 15:48:21
210     SYNONYMS ARE          g-a-p-t;
211     DESCRIPTION;
212 This is a field in general-ledger-file referring
213 to account previous year total.;
214     KEYWORD                'maintain-routine';
215     USED TO CONSTRUCT     general-ledger-record;
216     KNOWN-BY              end-of-year-update;
```

Formatted Statements

```
217
218 DEFINE GLOBAL-VARIABLE
219             G-acc-type;
220 # Last changed - May 26, 1984 15:50:32
221 SYNONYMS ARE             g-a-t;
222 DESCRIPTION;
223 This is a field in general-ledger-file referring to
224 account type.;
225 KEYWORD                 'maintain-routine';
226 USED TO CONSTRUCT       general-ledger-record;
227 KNOWN-BY                add-g-l-record,
228                          print-income-statement-line,
229                          print-chart-of-acc-line;
230
231 DEFINE GLOBAL-VARIABLE
232             P-acc-name;
233 # Last changed - May 26, 1984 15:50:32
234 SYNONYMS ARE             p-a-nm;
235 DESCRIPTION;
236 This is a field in pre-entered-account-file refering
237 to account name.;
238 KEYWORD                 'maintain-routine';
239 USED TO CONSTRUCT       pre-entered-acc-record;
240 KNOWN-BY                print-audit-trail-line;
241
242 DEFINE GLOBAL-VARIABLE
243             P-acc-number;
244 # Last changed - May 26, 1984 15:50:32
245 SYNONYMS ARE             p-a-n;
246 DESCRIPTION;
247 This is a field in pre-entered-account-file referring
248 to account number.;
249 KEYWORD                 'maintain-routine';
250 USED TO CONSTRUCT       pre-entered-acc-record;
251 KNOWN-BY                print-audit-trail-line;
252
253 DEFINE GLOBAL-VARIABLE
254             P-acc-value;
255 # Last changed - May 26, 1984 15:50:32
256 SYNONYMS ARE             p-a-v;
257 DESCRIPTION;
258 This is a field in pre-entered-account-file referring
259 to account value.;
260 KEYWORD                 'maintain-routine';
261 USED TO CONSTRUCT       pre-entered-acc-record;
262 KNOWN-BY                print-audit-trail-line;
263
264 DEFINE GLOBAL-VARIABLE
265             P-date-of-entry;
266 # Last changed - May 26, 1984 15:50:32
267 SYNONYMS ARE             p-d-o-e;
268 DESCRIPTION;
269 This is a field in pre-entered-acc-file refering
270 to date of entry.;
271 KEYWORD                 'maintain-routine';
```

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```
272 USED TO CONSTRUCT      pre-entered-acc-record;
273 KNOWN-BY                print-audit-trail-line;
274
275 DEFINE GLOBAL-VARIABLE
276             P-entry-number;
277 # Last changed - May 26, 1984 15:50:32
278 SYNONYMS ARE            p-e-n;
279 DESCRIPTION;
280 This is a field in pre-entered-account-file referring
281 to entry number.;
282 KEYWORD                  'maintain-routine';
283 USED TO CONSTRUCT      pre-entered-acc-record;
284 KNOWN-BY                get-current-entry-number,
285                          print-audit-trail-line;
286
287 DEFINE GLOBAL-VARIABLE
288             P-source-code;
289 # Last changed - May 26, 1984 15:50:32
290 SYNONYMS ARE            p-s-c;
291 DESCRIPTION;
292 This is a field in pre-entered-account-file referring
293 to source code.;
294 KEYWORD                  'maintain-routine';
295 USED TO CONSTRUCT      pre-entered-acc-record;
296 KNOWN-BY                print-audit-trail-line;
297
298 DEFINE GLOBAL-VARIABLE
299             P-update-indicator;
300 # Last changed - May 26, 1984 15:45:08
301 SYNONYMS ARE            p-u-i;
302 DESCRIPTION;
303 This is a field in pre-entered-account-file referring
304 to update indicator.;
305 KEYWORD                  'maintain-routine';
306 USED TO CONSTRUCT      pre-entered-acc-record;
307
308 DEFINE GLOBAL-VARIABLE
309             sys-date;
310 # Last changed - May 26, 1984 15:50:32
311 SYNONYMS ARE            s-d;
312 DESCRIPTION;
313 It is the date of data entered.;
314 KEYWORD                  'routine-maintain';
315 KNOWN-BY                print-list-of-account-entered,
316                          print-balance-sheet-heading;
317
318 DEFINE VARIABLE          acc-name;
319 # Last changed - May 26, 1984 15:45:08
320 SYNONYMS ARE            a-nm;
321 DESCRIPTION;
322 This is a local variable being tested for the validity
323 of the account name.;
324 KEYWORD                  'maintain-routine';
325 LOCAL-DATA FOR          get-valid-acc-record;
326 LOCAL-DATA FOR          add-g-l-record;
```

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```
327 LOCAL-DATA FOR          modify-g-l-record;
328
329 DEFINE VARIABLE          acc-number;
330 # Last changed - May 26, 1984 15:45:08
331 SYNONYMS ARE             a-n;
332 DESCRIPTION;
333 This is a local variable being tested for the validity of the
334 account number.;
335 KEYWORD                   'maintain-routine';
336 LOCAL-DATA FOR           get-valid-acc-number;
337 LOCAL-DATA FOR           add-g-l-record;
338
339 DEFINE VARIABLE          acc-number-error;
340 # Last changed - May 26, 1984 15:45:08
341 SYNONYMS ARE             a-n-e;
342 DESCRIPTION;
343 It indicates whether an account name is valid or not.;
344 KEYWORD                   'maintain-routine';
345 LOCAL-DATA FOR           get-valid-acc-number;
346 LOCAL-DATA FOR           add-g-l-record;
347
348 DEFINE VARIABLE          acc-type;
349 # Last changed - May 26, 1984 15:45:08
350 SYNONYMS ARE             a-t;
351 DESCRIPTION;
352 This is a local variable being tested for the validity
353 of the account type.;
354 KEYWORD                   'maintain-routine';
355 LOCAL-DATA FOR           add-g-l-record;
356 LOCAL-DATA FOR           modify-g-l-record;
357
358 DEFINE VARIABLE          acc-type-error;
359 # Last changed - May 26, 1984 15:45:08
360 SYNONYMS ARE             a-t-e;
361 DESCRIPTION;
362 It indicates whether an account name is valid or not.;
363 KEYWORD                   'maintain-routine';
364 LOCAL-DATA FOR           add-g-l-record;
365
366 DEFINE VARIABLE          acc-update-type;
367 # Last changed - May 26, 1984 15:49:44
368 DESCRIPTION;
369 It indicates the type of account update.;
370 LOCAL-DATA FOR           account-update-process;
371 PARAMETER FOR             select-type-acc-update
372 PASSED-BY                 result;
373
374 DEFINE VARIABLE          acc-value;
375 # Last changed - May 26, 1984 15:45:08
376 SYNONYMS ARE             a-v;
377 DESCRIPTION;
378 This is a local variable being tested for the
379 validity of the account value.;
380 KEYWORD                   'maintain-routine';
381 LOCAL-DATA FOR           get-valid-acc-record;
```

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```
382 LOCAL-DATA FOR          get-valid-acc-value;
383
384 DEFINE VARIABLE          acc-value-error;
385 # Last changed - May 26, 1984 15:45:08
386 SYNONYMS ARE             a-v-e;
387 DESCRIPTION;
388 It indicates whether an account value is valid or not;
389 KEYWORD                   'maintain-routine';
390 LOCAL-DATA FOR          get-valid-acc-value;
391
392 DEFINE VARIABLE          account-maintain-type;
393 # Last changed - May 26, 1984 15:45:08
394 SYNONYMS ARE             a-m-t;
395 DESCRIPTION;
396 It indicates the type of account-maintenance.;
397 KEYWORD                   'maintain-routine';
398 LOCAL-DATA FOR          account-maintain-process;
399 PARAMETER FOR            take-type-of-acc-maintain
400 PASSED-BY                result;
401
402 DEFINE VARIABLE          adjust-or-not;
403 # Last changed - May 26, 1984 15:45:08
404 SYNONYMS ARE             a-o-n;
405 DESCRIPTION;
406 It indicates whether the entry is an adjusted entry or not;
407 KEYWORD                   'maintain-routine';
408 LOCAL-DATA FOR          account-maintain-process;
409 PARAMETER FOR            append-to-entered-acc-file
410 PASSED-BY                result;
411 PARAMETER FOR            get-valid-acc-record
412 PASSED-BY                result;
413
414 DEFINE VARIABLE          amount-value;
415 # Last changed - May 26, 1984 15:50:32
416 LOCAL-DATA FOR          print-trial-balance;
417 PARAMETER FOR            print-trial-balance-line
418 PASSED-BY                value;
419 PARAMETER FOR            caculate-current-acc-value
420 PASSED-BY                result;
421
422 DEFINE VARIABLE          begin-date;
423 # Last changed - May 26, 1984 15:53:46
424 SYNONYMS ARE             b-d;
425 DESCRIPTION;
426 Is is the initial date for the audit trail report.
427 ;
428 KEYWORD                   'report-routine';
429 LOCAL-DATA FOR          print-audit-trail;
430 PARAMETER FOR            print-audit-trail-title
431 PASSED-BY                value;
432
433 DEFINE VARIABLE          clean-old-entry-error;
434 # Last changed - May 26, 1984 15:49:44
435 DESCRIPTION;
436 It indicates any error in the process of
```

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```
437 clean-old-entry.;
438 LOCAL-DATA FOR          clean-old-entries;
439
440 DEFINE VARIABLE          current-entry-number;
441 # Last changed - May 26, 1984 15:45:08
442 SYNONYMS ARE             c-e-n;
443 DESCRIPTION;
444 This entry number keeps track of the entered entries.;
445 KEYWORD                   'maintain-routine';
446 LOCAL-DATA FOR          get-valid-acc-record;
447
448 DEFINE VARIABLE          delete-confirm;
449 # Last changed - May 26, 1984 15:45:08
450 SYNONYMS ARE             d-c;
451 DESCRIPTION;
452 This confirm is used for double checking the deletion
453 of general ledger account.;
454 KEYWORD                   'maintain-routine';
455 LOCAL-DATA FOR          delete-g-l-record;
456
457 DEFINE VARIABLE          end-date;
458 # Last changed - May 26, 1984 15:53:46
459 SYNONYMS ARE             e-d;
460 DESCRIPTION;
461 Is is the ending date for the audit trail report.
462 ;
463 KEYWORD                   'report-routine';
464 LOCAL-DATA FOR          print-audit-trail;
465 PARAMETER FOR          print-audit-trail-title
466 PASSED-BY              value;
467
468 DEFINE VARIABLE          end-of-year-update-error;
469 # Last changed - May 26, 1984 15:49:44
470 DESCRIPTION;
471 It indicates any error in the process of
472 end-of-year-update.;
473 LOCAL-DATA FOR          end-of-year-update;
474
475 DEFINE VARIABLE          line-number;
476 # Last changed - May 26, 1984 15:53:46
477 SYNONYMS ARE             l-n;
478 DESCRIPTION;
479 It is a counter for line number.
480 ;
481 KEYWORD                   'report-routine';
482 LOCAL-DATA FOR          print-audit-trail;
483 LOCAL-DATA FOR          print-balance-sheet;
484 LOCAL-DATA FOR          print-chart-of-account;
485 LOCAL-DATA FOR          print-income-statement;
486 LOCAL-DATA FOR          print-ledger-sheet;
487 LOCAL-DATA FOR          print-list-of-account-entered;
488 LOCAL-DATA FOR          print-trial-balance;
489
490 DEFINE VARIABLE          maintain-acc-info-type;
491 # Last changed - May 26, 1984 15:45:08
```

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```
492 SYNONYMS ARE          m-a-i-t;
493 DESCRIPTION;
494 It indicates the type of account-informance-maintenance.;
495 KEYWORD                'maintain-routine';
496 LOCAL-DATA FOR        maintain-acc-info;
497 PARAMETER FOR         select-acc-info-maintain
498 PASSED-BY             result;
499
500 DEFINE VARIABLE        maintain-more;
501 # Last changed - May 26, 1984 15:45:08
502 SYNONYMS ARE          m-m;
503 DESCRIPTION;
504 It indicates whether more account information is to be
505 maintained or not.;
506 KEYWORD                'maintain-routine';
507 LOCAL-DATA FOR        maintain-acc-info;
508
509 DEFINE VARIABLE        modify-type;
510 # Last changed - May 26, 1984 15:45:08
511 SYNONYMS ARE          m-t;
512 DESCRIPTION;
513 It indicates which field of the general ledger account
514 is to be modified.;
515 KEYWORD                'maintain-routine';
516 LOCAL-DATA FOR        modify-g-l-record;
517
518 DEFINE VARIABLE        net-change;
519 # Last changed - May 26, 1984 15:53:46
520 SYNONYMS ARE          e-c;
521 DESCRIPTION;
522 Is is used to caculate the net change for the
523 ledger sheet.
524 ;
525 KEYWORD                'report-routine';
526 LOCAL-DATA FOR        print-ledger-sheet;
527
528 DEFINE VARIABLE        page-number;
529 # Last changed - May 26, 1984 15:53:46
530 SYNONYMS ARE          p-n;
531 DESCRIPTION;
532 It indicates the page nnumber of reports.
533 ;
534 KEYWORD                'report-routine';
535 LOCAL-DATA FOR        print-audit-trail;
536 LOCAL-DATA FOR        print-balance-sheet;
537 LOCAL-DATA FOR        print-chart-of-account;
538 LOCAL-DATA FOR        print-income-statement;
539 LOCAL-DATA FOR        print-ledger-sheet;
540 LOCAL-DATA FOR        print-list-of-account-entered;
541 LOCAL-DATA FOR        print-trial-balance;
542 PARAMETER FOR         print-trial-balance-title
543 PASSED-BY             value;
544 PARAMETER FOR         print-trial-balance-heading
545 PASSED-BY             value;
546 PARAMETER FOR         print-balance-sheet-heading
```


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```
547 PASSED-BY value;
548 PARAMETER FOR print-income-statement-heading
549 PASSED-BY value;
550 PARAMETER FOR print-chart-of-acc-heading
551 PASSED-BY value;
552 PARAMETER FOR print-audit-trail-heading
553 PASSED-BY value;
554 PARAMETER FOR print-list-acc-entered-heading
555 PASSED-BY value;
556 PARAMETER FOR print-ledger-sheet-heading
557 PASSED-BY value;
558
559 DEFINE VARIABLE repeat-counter;
560 # Last changed - May 26, 1984 15:53:46
561 SYNONYMS ARE r-c;
562 DESCRIPTION;
563 It is a indicater for counter the total page number.
564 ;
565 KEYWORD 'report-routine';
566 LOCAL-DATA FOR print-audit-trail;
567 LOCAL-DATA FOR print-ledger-sheet;
568 LOCAL-DATA FOR print-list-of-account-entered;
569 LOCAL-DATA FOR print-trial-balance;
570
571 DEFINE VARIABLE report-type;
572 # Last changed - May 26, 1984 15:50:32
573 LOCAL-DATA FOR report-generator-process;
574 PARAMETER FOR select-report-type PASSED-BY
575 result;
576
577 DEFINE VARIABLE source-code;
578 # Last changed - May 26, 1984 15:45:08
579 SYNONYMS ARE s-c;
580 DESCRIPTION;
581 This is a local variable being tested for the validity
582 of the source code.;
583 KEYWORD 'maintain-routine';
584 LOCAL-DATA FOR get-valid-acc-record;
585 LOCAL-DATA FOR get-valid-source-code;
586
587 DEFINE VARIABLE source-code-error;
588 # Last changed - May 26, 1984 15:45:08
589 SYNONYMS ARE s-c-e;
590 DESCRIPTION;
591 It indicates whether an source code is valid or not.;
592 KEYWORD 'maintain-routine';
593 LOCAL-DATA FOR get-valid-source-code;
594
595 DEFINE VARIABLE stop-enter;
596 # Last changed - May 26, 1984 15:45:08
597 SYNONYMS ARE s-e;
598 DESCRIPTION;
599 It indicates whether more entries to be made.;
600 KEYWORD 'maintain-routine';
601 LOCAL-DATA FOR append-to-entered-acc-file;
```

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```
602
603 DEFINE VARIABLE      total-CR;
604 # Last changed - May 26, 1984  15:53:46
605   SYNONYMS ARE      t-c;
606   DESCRIPTION;
607 Is is used to caculate the total credit for
608 the trial balance sheet.
609 ;
610   KEYWORD            'report-routine';
611   LOCAL-DATA FOR    print-trial-balance;
612
613 DEFINE VARIABLE      total-DR;
614 # Last changed - May 26, 1984  15:53:46
615   SYNONYMS ARE      t-d;
616   DESCRIPTION;
617 Is is used to caculate the total debit for
618 the trial balance sheet.
619 ;
620   KEYWORD            'report-routine';
621   LOCAL-DATA FOR    print-trial-balance;
622
623 DEFINE VARIABLE      total-income;
624 # Last changed - May 26, 1984  15:49:44
625   DESCRIPTION;
626 This represents the balance of revenues and expenses
627 for a particular period.;
628   LOCAL-DATA FOR    clean-revenues-expense;
629
630 DEFINE VARIABLE      total-page-number;
631 # Last changed - May 26, 1984  15:53:46
632   SYNONYMS ARE      t-p-n;
633   DESCRIPTION;
634 It indicates the total page of a report.
635 ;
636   KEYWORD            'report-routine';
637   LOCAL-DATA FOR    print-audit-trail;
638   LOCAL-DATA FOR    print-ledger-sheet;
639   LOCAL-DATA FOR    print-list-of-account-entered;
640   LOCAL-DATA FOR    print-trial-balance;
641   PARAMETER FOR     print-trial-balance-title
642   PASSED-BY         value;
643   PARAMETER FOR     print-trial-balance-heading
644   PASSED-BY         value;
645   PARAMETER FOR     print-balance-sheet-heading
646   PASSED-BY         value;
647   PARAMETER FOR     print-income-statement-heading
648   PASSED-BY         value;
649   PARAMETER FOR     print-chart-of-acc-heading
650   PASSED-BY         value;
651   PARAMETER FOR     print-audit-trail-heading
652   PASSED-BY         value;
653   PARAMETER FOR     print-list-acc-entered-heading
654   PASSED-BY         value;
655   PARAMETER FOR     print-ledger-sheet-heading
656   PASSED-BY         value;
```

```
657
658 DEFINE VARIABLE      try-again;
659 # Last changed - May 26, 1984 15:45:08
660 SYNONYMS ARE          t-a;
661 DESCRIPTION;
662 If the entered account number is not found the system
663 prompts for the stop-enter value , it can either be
664 for re-enter or quit.;
665 KEYWORD                'maintain-routine';
666 LOCAL-DATA FOR         modify-g-l-record;
667 PARAMETER FOR          get-valid-acc-record
668 PASSED-BY              result;
669 PARAMETER FOR          get-valid-acc-number
670 PASSED-BY              result;
671 PARAMETER FOR          get-valid-source-code
672 PASSED-BY              result;
673 PARAMETER FOR          get-valid-acc-value
674 PASSED-BY              result;
675
676 DEFINE VARIABLE      type-of-module;
677 # Last changed - May 26, 1984 15:45:08
678 SYNONYMS ARE          t-o-m;
679 DESCRIPTION;
680 It indicates the type of module to be processed.;
681 KEYWORD                'maintain-routine';
682 LOCAL-DATA FOR         general-ledger-process;
683 PARAMETER FOR          take-module-type-process
684 PASSED-BY              result;
685
686 DEFINE VARIABLE      valid-acc-number;
687 # Last changed - May 26, 1984 15:45:08
688 SYNONYMS ARE          v-a-n;
689 DESCRIPTION;
690 This is checked and valid account number.;
691 KEYWORD                'maintain-routine';
692 PARAMETER FOR          get-valid-acc-number
693 PASSED-BY              result;
694
695 DEFINE VARIABLE      valid-acc-value;
696 # Last changed - May 26, 1984 15:45:08
697 SYNONYMS ARE          v-a-v;
698 DESCRIPTION;
699 This is checked and valid account value.;
700 KEYWORD                'maintain-routine';
701 PARAMETER FOR          get-valid-acc-value
702 PASSED-BY              result;
703
704 DEFINE VARIABLE      valid-current-entry-number;
705 # Last changed - May 26, 1984 15:45:08
706 SYNONYMS ARE          v-c-e-n;
707 DESCRIPTION;
708 This is checked and valid current entry number.;
709 KEYWORD                'maintain-routine';
710 PARAMETER FOR          get-current-entry-number
711 PASSED-BY              result;
```

712

713 DEFINE VARIABLE valid-source-code;

714 # Last changed - May 26, 1984 15:45:08

715 SYNONYMS ARE v-s-c;

716 DESCRIPTION;

717 This is checked and valid source code.;

718 KEYWORD 'maintain-routine';

719 PARAMETER FOR get-valid-source-code

720 PASSED-BY result;

721

722 DEFINE VARIABLE value-error;

723 # Last changed - May 26, 1984 15:50:32

724 SYNONYMS ARE v-e;

725 DESCRIPTION;

726 It indicates the entered type of value error.;

727 KEYWORD 'maintain-routine';

728 LOCAL-DATA FOR take-module-type-process;

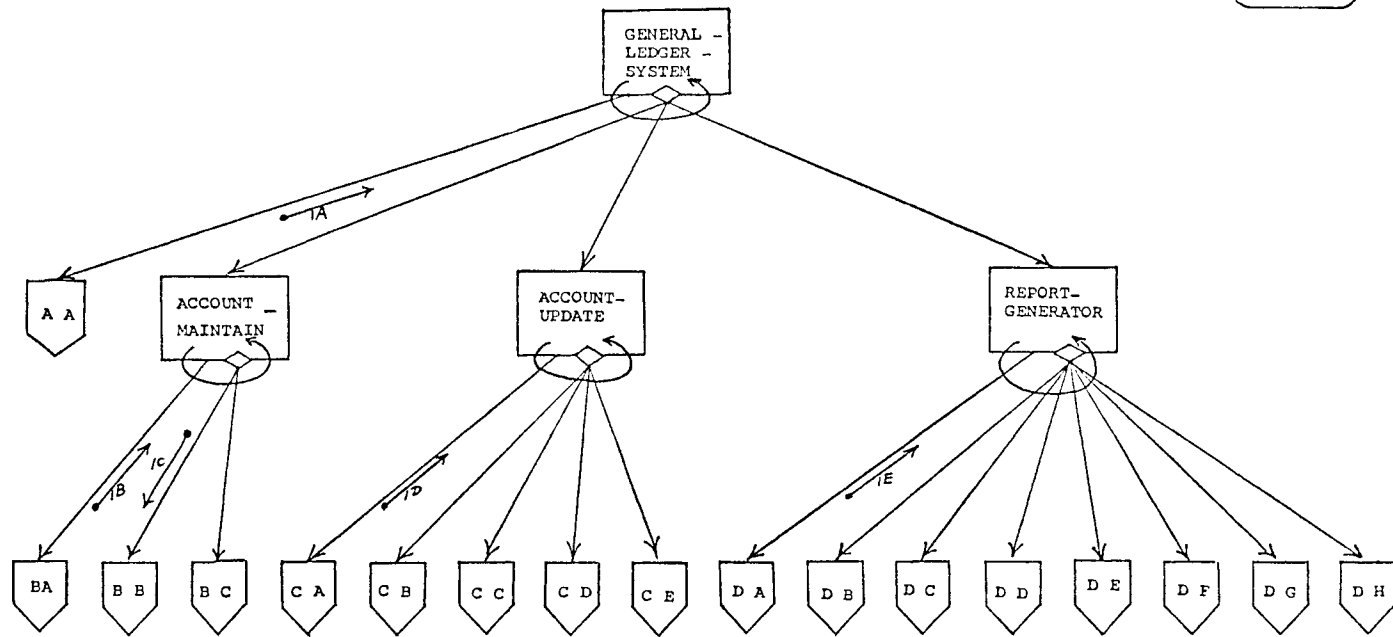
729 LOCAL-DATA FOR take-type-of-acc-maintain;

730 LOCAL-DATA FOR select-acc-info-maintain;

731 LOCAL-DATA FOR select-type-acc-update;

732 LOCAL-DATA FOR select-report-type;

732 lines printed. 395 statements printed.



A A	TAKE-MODULE-TYPE	PAGE 2	C C	CLEAN-OLD-ENTRIES	PAGE 4	D D	PRINT-AUDIT-TRAIL	PAGE 5
B A	TAKE-TYPE-OF-ACC-MAINTAIN	PAGE 2	C D	CLEAN-REVENUES-EXPENSE	PAGE 4	D E	PRINT-LEDGER-SHEET	PAGE 6
B B	APPEND-TO-ENTERED-ACC-FILE	PAGE 2	C E	END-OF-YEAR-UPDATE	PAGE 4	D F	PRINT-TRIAL-BALANCE	PAGE 6
B C	MAINTAIN-ACC-INFO	PAGE 3	D A	SELECT-TYPE-OF-REPORT	PAGE 5	D G	PRINT-INCOME-STATEMENT	PAGE 6
C A	SELECT-TYPE-ACC-UPDATE	PAGE 4	D B	PRINT-CHART-OF-ACC	PAGE 5	D H	PRINT-BALANCE-SHEET	PAGE 6
C B	UPDATE-G-L-FILE	PAGE 4	D C	PRINT-LIST-OF-ACC-ENTERED	PAGE 5			

OFF PAGE REFERENCE

1 A	MODULE - TYPE
1 B	ACCOUNT-MAINTAIN-TYPE
1 C	ADJUST-OR-NOT
1 D	ACC-UPDATE-TYPE
1 E	REPORT-TYPE

PARAMETER REFERENCE

Univ-of-Montana-VAX-11/750

Formatted Statements

Parameters: LANGUAGE=pds1 DB=olive.dbf FILE=par PRINT
NOPUNCH HSMARG=0 HNMARG=35 SMARG=5 NMARG=25 TMARG=0
SRMARG=75 ONE-PER-LINE DLC-COMMENT

```
1
2 DEFINE MODULE                                account-maintain;
3 # Last changed - May 26, 1984 16:03:08
4     SYNONYMS ARE                             a-m;
5     DESCRIPTION;
6 This module handles those things that relate to the
7 account informaiton , account entry and
8 adjust-account-entry.;
9     KEYWORD                                  'moduls';
10    INTERFACE ROUTINE                        account-maintain-process;
11    ROUTINE                                  take-type-of-acc-maintain,
12                                             append-to-entered-acc-file,
13                                             maintain-acc-info;
14    MODULE IN                                general-ledger-system;
15
16 DEFINE MODULE                                account-update;
17 # Last changed - May 26, 1984 16:03:08
18     SYNONYMS ARE                             a-u;
19     DESCRIPTION;
20 This process uses the entered-account-file to update
21 the general-ledger-file at the end of the period.
22 It cleans the entered-account-file and also appends
23 to the previous-entered-account-file. It also cleans
24 the revenues and expense accounts at the end of a period.
25 At the end of a year, it will close the accounts,;
26     KEYWORD                                  'moduls';
27     INTERFACE ROUTINE                        account-update-process;
28     ROUTINE                                  select-type-acc-update,
29                                             update-G-L-F,
30                                             clean-old-entries,
31                                             clean-revenues-expense,
32                                             end-of-year-update;
33     MODULE IN                                general-ledger-system;
34
35 DEFINE MODULE                                report-generator;
36 # Last changed - May 26, 1984 16:03:08
37     SYNONYMS ARE                             r-g;
38     DESCRIPTION;
39 This module generates the financial-report and
40 account-report, when requested.;
41     KEYWORD                                  'moduls';
42     INTERFACE ROUTINE                        report-generator-process;
43     ROUTINE                                  select-report-type,
44                                             print-chart-of-account,
45                                             print-list-of-account-entered,
46                                             print-audit-trail,
47                                             print-ledger-sheet,
48                                             print-trial-balance,
49                                             print-balance-sheet,
50                                             print-income-statement;
51     MODULE IN                                general-ledger-system;
```

```
52
53 DEFINE ROUTINE          account-maintain-process;
54 # Last changed - May 26, 1984 15:42:46
55     SYNONYMS ARE        a-m-p;
56     ALGORITHM;
57
58 MOVE 'n' to adjust-or-not.
59 REPEAT
60 PERFORM take-type-of-acc-maintain.
61 CASE account-maintain-type:
62     '1': PERFORM append-to-entered-acc-file
63     '2': MOVE 'y' to adjust-or-not
64         PERFORM append-to-entered-acc-file
65     '3': PERFORM maintain-acc-info.
66 UNTIL account-maintain-type = '*'.
67 ;
68     DESCRIPTION;
69 This a interface routine for
70 account-maintain module.;
71     CALLS                append-to-entered-acc-file,
72                          maintain-acc-info,
73                          take-type-of-acc-maintain;
74     KEYWORD               'routin-maintain';
75     LOCAL-DATA IS        adjust-or-not;
76     LOCAL-DATA IS        account-maintain-type;
77     CALLED-BY             general-ledger-process;
78     INTERFACE ROUTINE FOR
79         account-maintain;
80
81 DEFINE ROUTINE          account-update-process;
82 # Last changed - May 26, 1984 15:48:21
83     SYNONYMS ARE        a-u-p;
84     ALGORITHM;
85
86 REPEAT
87     PERFORM select-type-acc-update.
88     CASE acc-update-type:
89         '1': PERFORM update-G-L-F
90         '2': PERFORM clean-old-entries
91         '3': PERFORM clean-revenues-expense
92         '4': PERFORM end-of-year-update
93 UNTIL acc-update-type = '*'.
94 ;
95     DESCRIPTION;
96 This is the interface routine for the
97 account-update module.;
98     CALLS                select-type-acc-update,
99                          update-G-L-F,
100                          clean-revenues-expense,
101                          clean-old-entries,
102                          end-of-year-update;
103     KEYWORD               'update-routine';
104     LOCAL-DATA IS        acc-update-type;
105     CALLED-BY             general-ledger-process;
106     INTERFACE ROUTINE FOR
```

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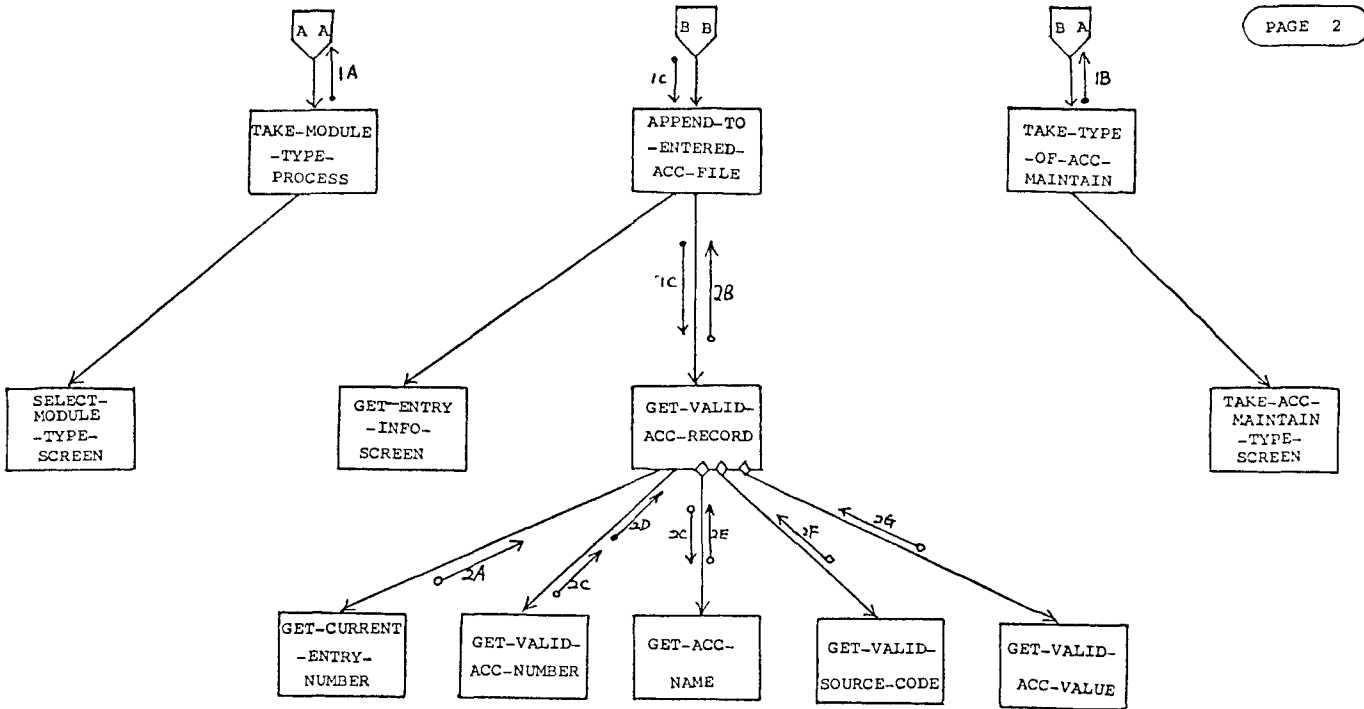
```
107 account-update;
108
109 DEFINE ROUTINE general-ledger-process;
110 # Last changed - May 26, 1984 16:03:08
111     SYNONYMS ARE g-l-p;
112     ALGORITHM;
113
114 REPEAT
115     PERFORM take-module-type-process.
116     CASE type-of-module:
117         '1': PERFORM account-maintain-process
118         '2': PERFORM account-update-process
119         '3': PERFORM report-generator-process.
120 UNTIL type-of-module = '*'.
121 ;
122     DESCRIPTION;
123 This is a interface routine of general-ledger-system.
124 ;
125     CALLS account-maintain-process,
126           account-update-process,
127           report-generator-process;
128     KEYWORD 'sub-sys';
129     LOCAL-DATA IS type-of-module;
130     MAIN ROUTINE FOR general-ledger-system;
131
132 DEFINE ROUTINE report-generator-process;
133 # Last changed - May 26, 1984 15:50:32
134     SYNONYMS ARE r-g-p;
135     ALGORITHM;
136
137 REPEAT
138     PERFORM select-report-type.
139     CASE report-type:
140         '1': PERFORM print-chart-of-account.
141         '2': PERFORM print-list-of-account-entered.
142         '3': PERFORM print-audit-trail.
143         '4': PERFORM print-ledger-sheet.
144         '5': PERFORM print-trial-balance.
145         '6': PERFORM print-income-statement.
146         '7': PERFORM print-balance-sheet.
147 UNTIL report-type = '*'.
148 ;
149     DESCRIPTION;
150 This routine is interface routine of report-genreator
151 module. It calls the requested report routine.;
152     CALLS select-report-type,
153           print-chart-of-account,
154           print-list-of-account-entered,
155           print-audit-trail,
156           print-ledger-sheet,
157           print-trial-balance,
158           print-income-statement,
159           print-balance-sheet;
160     KEYWORD 'report-routine';
161     LOCAL-DATA IS report-type;
```


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```
162     CALLED-BY          general-ledger-process;
163     INTERFACE ROUTINE FOR
164         report-generator;
165
166 DEFINE SUBSYSTEM      general-ledger-system;
167 # Last changed - May 26, 1984 16:03:08
168     SYNONYMS ARE      g-l-s;
169     DESCRIPTION;
170 The general-ledger system is part of accounting
171 system. It keeps the accounts in balance and
172 produce the financial reports according to the
173 request.;
174     DESIGNER;
175 Chung-Chieh Wu;
176     KEYWORD           'subsystem';
177     MAIN ROUTINE IS   general-ledger-process;
178     MODULE            report-generator,
179                     account-update,
180                     account-maintain;
```

180 lines printed. 64 statements printed.



PAGE 2

2 A	VALID-CURRENT-ENTRY-NUMBER	2 E	ACC-NAME
2 B	ENTERED-ACCOUNT-RECORD	2 F	VALID-SOURCE-CODE
2 C	VALID-ACC-NUMBER	2 G	VALID-ACCOUNT-VALUE
2 D	ACC-NUMBER-ERROR	1 C	ADJUST-OR-NOT
1 A	MODULE-TYPE	1 B	ACCOUNT-MAINTAIN-TYPE

PARAMETER REFERENCE

Univ-of-Montana-VAX-11/750

Formatted Statements

Parameters: LANGUAGE=pds1 DB=olive.dbf FILE=par PRINT
NOPUNCH HSMARG=0 HNMARG=20 SMARG=1 NMARG=25 TMARG=0
SRMARG=80 ONE-PER-LINE DLC-COMMENT

```
1
2 DEFINE LIBRARY      general-ledger-library;
3 # Last changed - May 26, 1984 15:50:32
4 SYNONYMS ARE       g-l-l;
5 DESCRIPTION;
6 This is a library routine for the General ledger system.;
7 COLLECTION OF      get-valid-acc-number,
8                    print-company-title;
9 KEYWORD            'maintain-routine';
10
11 DEFINE LIBRARY-ROUTINE
12     get-valid-acc-number;
13 # Last changed - May 26, 1984 15:42:46
14 SYNONYMS ARE      g-v-a-n;
15 ALGORITHM;
16
17 REPEAT
18     MOVE 'n' to acc-number-error.
19     MOVE 'y' to try-again.
20     ACCEPT acc-number.
21     IF acc-number length <> 6 THEN
22         acc-number-error = 'y'
23     ELSE IF acc-number not in general-ledger-file
24         THEN acc-number-error = 'y'
25             display 'account number error'
26             ACCEPT try-again
27     ELSE move acc-number to valid-acc-number.
28 UNTIL acc-number-error = 'n' OR try-again= 'n'.
29 erase error message.
30 ;
31 DESCRIPTION;
32 This routine gets the valid account number.;
33 KEYWORD            'routin-maintain';
34 LOCAL-DATA IS     acc-number;
35 LOCAL-DATA IS     acc-number-error;
36 PARAMETER         try-again PASSED-BY
37                   result;
38 PARAMETER         valid-acc-number
39 PASSED-BY         result;
40 COLLECTED IN     general-ledger-library;
41 UTILIZED BY      get-valid-acc-record,
42                   delete-g-l-record,
43                   modify-g-l-record;
44
45 DEFINE MODULE      take-module-type;
46 # Last changed - May 26, 1984 15:41:45
47 SYNONYMS ARE      p-t-s;
48 DESCRIPTION;
49 This module handles the selection of the type of the
50 module to be processed,
51 ;
```

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```
52 KEYWORD 'moduls';
53 INTERFACE ROUTINE take-module-type-process;
54
55 DEFINE ROUTINE append-to-entered-acc-file;
56 # Last changed - May 26, 1984 15:42:46
57 SYNONYMS ARE a-t-e-a-f;
58 ALGORITHM;
59
60 IF adjust-or-not = 'y' THEN source-code:= '4'.
61 PERFORM get-entry-info-screen.
62 OPEN entered-account-file
63 previous-entered-account-file
64 general-ledger-file.
65 WHILE not eof(entered-acc-file)
66 BEGIN
67 read (entered-acc-file)
68 END.{while}
69 REPEAT
70 PERFORM get-valid-acc-record
71 IF try-again = 'y' THEN
72 write(entered-acc-file)
73 ACCEPT stop-enter
74 UNTIL stop-enter = 'y' OR try-again = 'n'.
75 CLOSE entered-account-file
76 previous-entered-account-file
77 general-ledger-file.
78 ;
79 DESCRIPTION;
80 This routine accept entered account entries
81 or adjust account entries and append to the
82 end of entered-account-file.;
83 CALLS get-entry-info-screen,
84 get-valid-acc-record;
85 KEYWORD 'routin-maintain';
86 LOCAL-DATA IS stop-enter;
87 PARAMETER adjust-or-not PASSED-BY
88 result;
89 CALLED-BY account-maintain-process;
90 ROUTINE IN account-maintain;
91
92 DEFINE ROUTINE get-current-entry-number;
93 # Last changed - May 26, 1984 15:42:46
94 SYNONYMS ARE g-c-e-n;
95 ALGORITHM;
96 REPEAT
97 READ (entered-account-file).
98 UNTIL EOF(entered-account-file).
99 IF E-entry-number = ' ' THEN
100 REPEAT
101 READ (pre-entered-account-file)
102 UNTIL EOF(pre-entered-account-file)
103 MOVE P-entry-number to valid-current-entry-number
104 ELSE Move E-entry-number to valid-current-entry-number.
105 ;
106 DESCRIPTION;
```

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Formatted Statements

```
107 This routine gets the current entry number.;
108 KEYWORD 'routin-maintain';
109 KNOWS-OF P-entry-number,
110 E-entry-number;
111 PARAMETER valid-current-entry-number
112 PASSED-BY result;
113 CALLED-BY get-valid-acc-record;
114
115 DEFINE ROUTINE get-entry-info-screen;
116 # Last changed - May 26, 1984 15:54:08
117 SYNONYMS ARE g-e-i-s;
118 ALGORITHM;
119
120 DISPLAY SCREEN(2,33).
121 DISPLAY 'ENTER ACCOUNT '.
122 DISPLAY SCREEN(5,10)
123 DISPLAY '++++++++++++++++++++++++++++++++++++++++'.
124 DISPLAY SCREEN(6,10) .
125 DISPLAY 'DATE ** ** **'.
126 DISPLAY SCREEN(6,60) .
127 DISPLAY 'SOURCE CODE _'.
128 DISPLAY SCREEN(8,10) .
129 DISPLAY 'ENTRY NUMBER _____'.
130 DISPLAY SCREEN(10,10) .
131 DISPLAY 'ACCOUNT NUMBER _____'.
132 DISPLAY SCREEN(12,10) .
133 DISPLAY 'ACCOUNT NAME _____'.
134 DISPLAY SCREEN(14,10) .
135 DISPLAY 'ACCOUNT VALUE _____.'.
136 ;
137 DESCRIPTION;
138 This routine shows the screen for enter entries
139 or enter adjusting entries.
140 ;
141 CALLED-BY append-to-entered-acc-file;
142
143 DEFINE ROUTINE get-valid-acc-record;
144 # Last changed - May 26, 1984 15:42:46
145 SYNONYMS ARE g-v-a-r;
146 ALGORITHM;
147
148 MOVE 'y' to try-again.
149 PERFORM get-current-entry-number.
150 PERFORM get-valid-acc-number.
151 IF try-again = 'y' THEN
152 MOVE G-account-name to account-name.
153 IF adjust-or-not <> 'y' THEN
154 PERFORM get-valid-acc-value.
155 IF source-code <> '4' THEN
156 PERFORM get-valid-source-code.
157 ;
158 DESCRIPTION;
159 This routine accept the valid entered account entry
160 or valid adjust account entry.;
161 CALLS get-current-entry-number,
```

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```
162 get-valid-acc-value,
163 get-valid-source-code;
164 KEYWORD 'routin-maintain';
165 LOCAL-DATA IS current-entry-number;
166 LOCAL-DATA IS acc-name;
167 LOCAL-DATA IS source-code;
168 LOCAL-DATA IS acc-value;
169 PARAMETER adjust-or-not PASSED-BY
170 result;
171 PARAMETER try-again PASSED-BY
172 result;
173 UTILIZES get-valid-acc-number;
174 CALLED-BY append-to-entered-acc-file;
175
176 DEFINE ROUTINE get-valid-acc-value;
177 # Last changed - May 26, 1984 15:42:46
178 SYNONYMS ARE g-v-a-v;
179 ALGORITHM;
180
181 REPEAT
182 MOVE 'n' to acc-value-error.
183 MOVE 'y' to try-again.
184 ACCEPT acc-value.
185 IF acc-value length <> 11 THEN
186 acc-value-error = 'y'
187 ELSE IF acc-value < -100000000 OR
188 acc-value > 100000000
189 THEN acc-value-error = 'y'
190 display 'account value error'
191 ACCEPT try-again
192 ELSE move acc-value to valid-acc-value.
193 UNTIL acc-value-error = 'n' OR try-again= 'n'.
194 erase error message.
195 ;
196 DESCRIPTION;
197 This routine gets the valid account value.;
198 KEYWORD 'routin-maintain';
199 LOCAL-DATA IS acc-value;
200 LOCAL-DATA IS acc-value-error;
201 PARAMETER try-again PASSED-BY
202 result;
203 PARAMETER valid-acc-value PASSED-BY
204 result;
205 CALLED-BY get-valid-acc-record;
206
207 DEFINE ROUTINE get-valid-source-code;
208 # Last changed - May 26, 1984 15:42:46
209 SYNONYMS ARE g-v-s-c;
210 ALGORITHM;
211
212 REPEAT
213 MOVE 'n' to source-code-error.
214 MOVE 'y' to try-again.
215 ACCEPT source-code.
216 IF source-code length <> 1 THEN
```

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```
217     source-code-error = 'y'
218     ELSE IF source-code not in general-ledger-file
219         THEN acc-number-error = 'y'
220             display 'source code error'
221             ACCEPT try-again
222     ELSE move source-code to valid-source-code.
223 UNTIL source-code-error = 'n' OR try-again= 'n'.
224 erase error message.
225 ;
226 DESCRIPTION;
227 This routine gets the valid source code.;
228 KEYWORD      'routin-maintain';
229 LOCAL-DATA IS source-code;
230 LOCAL-DATA IS source-code-error;
231 PARAMETER    try-again PASSED-BY
232             result;
233 PARAMETER    valid-source-code PASSED-BY
234             result;
235 CALLED-BY    get-valid-acc-record;
236
237 DEFINE ROUTINE      select-module-type-screen;
238 # Last changed - May 26, 1984 15:54:08
239 SYNONYMS ARE      s-m-t-s;
240 ALGORITHM;
241
242 DISPLAY SCREEN(2,30) .
243 DISPLAY 'GENERAL LEDGER SYSTEM'.
244 DISPLAY SCREEN(4,20) .
245 DISPLAY 'SELECT ONE OF FOLLOWING TYPE TO PROCESS '.
246 DISPLAY SCREEN(5,32) .
247 DISPLAY 'ENTER SELECTION _'.
248 DISPLAY SCREEN(7,18) .
249 DISPLAY '====='.
250 DISPLAY SCREEN(9,18) .
251 DISPLAY ' * : FOR EXIT THE G-L-S.'
252 DISPLAY SCREEN(11,18) .
253 DISPLAY ' 1 : ACCOUNT MAINTAIN PROCESS'.
254 DISPLAY SCREEN(13,18) .
255 DISPLAY ' 2 : ACCOUNT UPDATE PROCESS'.
256 DISPLAY SCREEN(15,18) .
257 DISPLAY ' 3 : REPORT GENERATOR PROCESS'.
258 DISPLAY 'SCREEN(17,18) .
259 DISPLAY '====='.
260 ;
261 DESCRIPTION;
262 This screen shows the three categorys process type.
263 ;
264 CALLED-BY      take-module-type-process;
265
266 DEFINE ROUTINE      take-acc-maintain-type-screen;
267 # Last changed - May 26, 1984 15:54:08
268 SYNONYMS ARE      t-a-m-t-s;
269 ALGORITHM;
270
271 DISPLAY SCREEN(2,27) .
```

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```
272 DISPLAY '*** ACCOUNT MAINTAIN ***'.
273 DISPLAY SCREEN(4,20) .
274 DISPLAY 'SELECT ONE OF FOLLOWING TYPE TO PROCESS '.
275 DISPLAY SCREEN(5,32) .
276 DISPLAY 'ENTER SELECTION _'.
277 DISPLAY SCREEN(7,15) .
278 DISPLAY '====='.
279 DISPLAY SCREEN(9,15) .
280 DISPLAY ' * : FOR EXIT THE ACCOUNT MAINTAIN.
281 DISPLAY SCREEN(11,15) .
282 DISPLAY ' 1 : ENTER ENTRIES '.
283 DISPLAY SCREEN(13,15).
284 DISPLAY ' 2 : ENTERE ADJUST ENTRIES'.
285 DISPLAY SCREEN(15,15) .
286 DISPLAY ' 3 : ACCOUNT INFORMATION MAINTAIN'.
287 DISPLAY 'SCREEN(17,15).
288 DISPLAY '====='.
289 ;
290 DESCRIPTION;
291 This screen shows the three types for account maintain.
292 ;
293 CALLED-BY          take-type-of-acc-maintain;
294
295 DEFINE ROUTINE     take-module-type-process;
296 # Last changed - May 26, 1984 15:41:45
297 SYNONYMS ARE      t-m-t-p;
298 ALGORITHM;
299
300 PERFORM select-module-type-screen.
301 MOVE 'n' to value-error.
302 REPEAT
303     ACCEPT type-of-process
304     IF type-of-process length <> 1
305     THEN display 'accept value not correct'
306     MOVE 'y' to value-error
307     ELSE IF (type-of-process<>'*') and
308             (type-of-process<>'1') and
309             (type-of-process<>'2') and
310             (type-of-process<>'3')
311     THEN MOVE 'y' to value-error
312     ELSE display 'process type unproper'.
313 UNTIL value-error = 'n'.
314 ;
315 DESCRIPTION;
316 This is a interface routine for the
317 take-module-type module.
318 ;
319 CALLS              select-module-type-screen;
320 KEYWORD             'inter-routine';
321 LOCAL-DATA IS      value-error;
322 PARAMETER           type-of-module PASSED-BY
323                     result;
324 INTERFACE ROUTINE FOR take-module-type;
325
326 DEFINE ROUTINE     take-type-of-acc-maintain;
```


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327 # Last changed - May 26, 1984 15:42:46

328 SYNONYMS ARE t-t-o-a-m;

329 ALGORITHM;

330

331 PERFORM take-acc-maintain-type-screen.

332 MOVE 'n' to value-error.

333 REPEAT

334 ACCEPT acc-maintain-type.

335 IF acc-maintain-type length <> 1

336 THEN MOVE 'y' to value-error .

337 display 'accept value incorrect'

338 ELSE IF (account-maintain-type<>'*') and

339 (account-maintain-type<>'1') and

340 (account-maintain-type<>'2') and

341 (account-maintain-type<>'3')

342 THEN MOVE 'y' to value-error

343 display 'process type improper'.

344 UNTIL value-error='n'.

345 ;

346 DESCRIPTION;

347 This routine desides the type of account

348 maintain type.;

349 CALLS take-acc-maintain-type-screen;

350 KEYWORD 'routin-maintain';

351 LOCAL-DATA IS value-error;

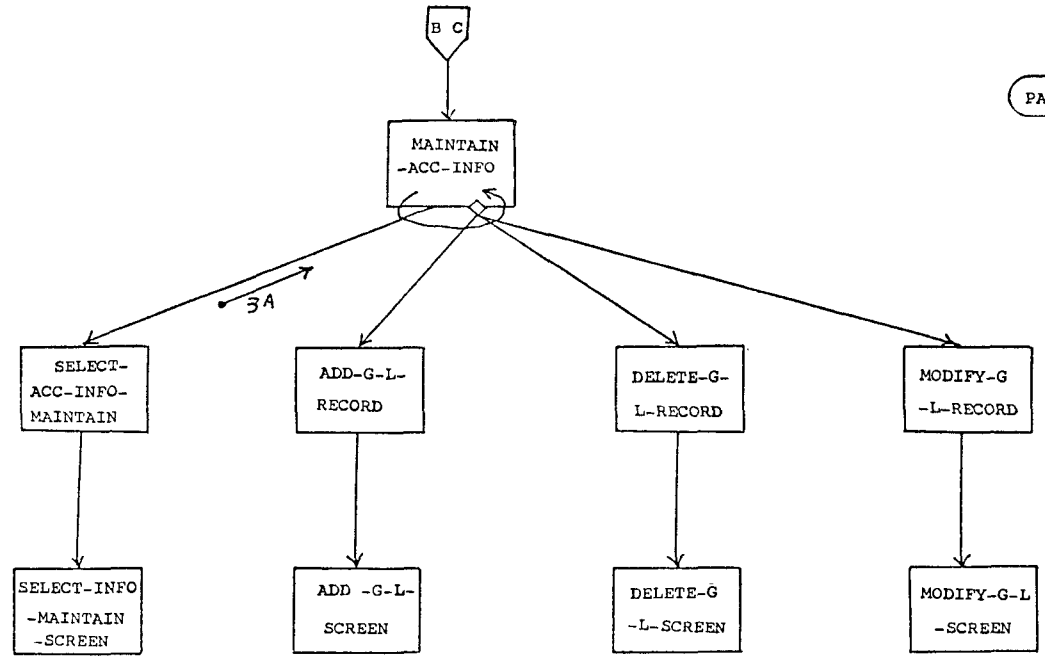
352 PARAMETER account-maintain-type

353 PASSED-BY result;

354 CALLED-BY account-maintain-process;

355 ROUTINE IN account-maintain;

355 lines printed. 107 statements printed.



3 A	MAINTAIN-ACC-INFO-TYPE
	PARAMETER REFERENCE

Univ-of-Montana-VAX-11/750

Formatted Statements

Parameters: LANGUAGE=pds1 DB=olive.dbf FILE=par3 PRINT
NOPUNCH HSMARG=0 HNMARG=20 SMARG=1 NMARG=25 TMARG=0
SRMARG=80 ONE-PER-LINE DLC-COMMENT

```
1
2 DEFINE ROUTINE      add-g-l-record;
3 # Last changed - May 26, 1984 15:42:46
4   SYNONYMS ARE      a-g-l-r;
5   ALGORITHM;
6
7 PERFORM add-g-l-screen.
8 REPEAT
9   MOVE 'n' to acc-number-error.
10  MOVE 'y' to try-more.
11  ACCEPT acc-number.
12  IF acc-number length <> 6
13  THEN acc-number-error = 'y' ELSE
14  IF 50000 < acc-number < 100000 THEN
15    acc-number-error = 'y'
16  ELSE READ (general-ledger-file)
17  IF eneral-ledger-record exist THEN
18    acc-number-error = 'y'.
19  UNTIL acc-number-error = 'n' OR
20    try-more = 'n'.
21 REPEAT
22  MOVE 'N' to account-name-error.
23  ACCEPT acc-name.
24  IF acc-name length < 30 THEN
25    MOVE acc-name to G-acc-name
26  ELSE acc-name-error = 'y'.
27  UNTIL acc-name-error = 'n'.
28 REPEAT
29  MOVE 'n' to acc-type-error.
30  ACCEPT acc-type.
31  IF acc-type length <> 1 THEN
32    MOVE 'Y' to acc-type-error
33    ELSE IF (account-type <> '0')
34      AND (account-type <> '1')
35      AND (account-type <> '2')
36      AND (account-type <> '3')
37      THEN acc-type-error = 'y'
38    ELSE MOVE acc-type to G-acc-type.
39  UNTIL acc-type-error = 'n'.
40  WRITE (general-ledger-record).
41 ;
42 DESCRIPTION;
43 This routine add a new general ledger account to
44 the general ledger file.;
45 CALLS      add-g-l-screen;
46 KEYWORD    'routine-maintain';
47 KNOWS-OF  G-acc-number,
48           G-acc-type,
49           G-acc-name;
50 LOCAL-DATA IS  acc-number-error;
51 LOCAL-DATA IS  acc-type-error;
```

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Formatted Statements

```
52 LOCAL-DATA IS          acc-name;
53 LOCAL-DATA IS          acc-number;
54 LOCAL-DATA IS          acc-type;
55 CALLED-BY              maintain-acc-info;
56
57 DEFINE ROUTINE          add-g-l-screen;
58 # Last changed - May 26, 1984 15:54:08
59 SYNONYMS ARE           a-g-l-s;
60 ALGORITHM;
61
62 DISPLAY SCREEN(2,27).
63 DISPLAY 'ADD GENERAL LEDGER RECORD'.
64 DISPLAY SCREEN(4,10) .
65 DISPLAY '+++++'.
66 DISPLAY SCREEN(6,10) .
67 DISPLAY 'ACCOUNT NUMBER _____'.
68 DISPLAY SCREEN(10,10) .
69 DISPLAY 'ACCOUNT NAME _____'.
70 DISPLAY SCREEN(12,10) .
71 DISPLAY 'ACCOUNT TYPE ' .
72 DISPLAY '+++++'.
73 ;
74 DESCRIPTION;
75 This routine shows the screen for adding general
76 ledger record.
77 ;
78 CALLED-BY              add-g-l-record;
79
80 DEFINE ROUTINE          delete-g-l-record;
81 # Last changed - May 26, 1984 15:42:46
82 SYNONYMS ARE           d-g-l-r;
83 ALGORITHM;
84
85     PERFORM delete-g-l-screen.
86     PERFORM get-valid-acc-number.
87     READ (general-ledger-file).
88     DISPLAY general-ledger-record content.
89     ACCEPT delete-confirm.
90     IF delete-confirm = 'y' THEN
91     DELETE (general-ledger-record).
92 ;
93 DESCRIPTION;
94 This routine deletes the existed general ledger
95 account from the general ledger file.;
96 CALLS                  delete-g-l-screen;
97 KEYWORD                 'routine-maintain';
98 LOCAL-DATA IS          delete-confirm;
99 UTILIZES                get-valid-acc-number;
100 CALLED-BY              maintain-acc-info;
101
102 DEFINE ROUTINE          delete-g-l-screen;
103 # Last changed - May 26, 1984 15:54:08
104 SYNONYMS ARE           d-g-l-s;
105 ALGORITHM;
106
```

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Formatted Statements

```

107 DISPLAY SCREEN(2,27) .
108 DISPLAY 'DELETE GENERAL LEDGER RECORD'.
109 DISPLAY SCREEN(4,10) .
110 DISPLAY ' ENTER ACCOUNT NUMBER ARE GOING TO BE DELETE'
111 DISPLAY ' ENTER HERE _____'.
112 DISPLAY SCREEN(6,10)
113 DISPLAY '====='.
114 DISPLAY SCREEN(7,10) .
115 DISPLAY 'ACCOUNT NUMBER _____'.
116 DISPLAY SCREEN(9,10) .
117 DISPLAY 'ACCOUNT NAME _____'.
118 DISPLAY SCREEN(12,10) .
119 DISPLAY 'ACCOUNT TYPE ' .
120 DISPLAY SCREEN(14,10) .
121 DISPLAY 'ACCOUNT CURRENT TOTAL _____'.
122 DISPLAY '+++++'.
123 ;
124 DESCRIPTION;
125 This routine shows the screen for deleteing
126 general ledger file.
127 ;
128 CALLED-BY          delete-g-l-record;
129
130 DEFINE ROUTINE      maintain-acc-info;
131 # Last changed - May 26, 1984 15:42:46
132 SYNONYMS ARE        m-a-i;
133 ALGORITHM;
134
135 OPEN I/O general-ledger-file.
136 REPEAT
137     PERFORM select-acc-info-maintain.
138     MOVE 'y' to maintain-more.
139     CASE maintain-acc-info-type:
140         '1': PERFORM add-g-l-record
141         '2': PERFORM delete-g-l-record
142         '3': PERFORM modify-g-l-record
143     ACCEPT maintain-more.
144 UNTIL maintain-more= 'n'
145     OR maintain-acc-info-maintain ='*'.
146 CLOSE general-ledger-file.
147 ;
148 DESCRIPTION;
149 This process maintains the general-ledger-file. It adds,
150 deletes and modifies the account in the general-ledger-file.;
151 CALLS          select-acc-info-maintain,
152                add-g-l-record,
153                delete-g-l-record,
154                modify-g-l-record;
155 KEYWORD        'routine-maintain';
156 LOCAL-DATA IS maintain-more;
157 LOCAL-DATA IS maintain-acc-info-type;
158 CALLED-BY      account-maintain-process;
159 ROUTINE IN     account-maintain;
160
161 DEFINE ROUTINE      modify-g-l-record;

```

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Formatted Statements

```
162 # Last changed - May 26, 1984 15:42:46
163 SYNONYMS ARE m-g-l-r;
164 ALGORITHM;
165
166 PERFORM modify-g-l-screen.
167 PERFORM get-valid-acc-number.
168 IF try-again <> 'n' THEN READ (general-ledger-file)
169 display general-ledger-record content
170 REPEAT
171 ACCEPT modify-type.
172 CASE modify-type:
173 '1': ACCEPT acc-name
174 IF acc-name length < 30
175 THEN MOVE acc-name to G-acc-name.
176 '2': ACCEPT acc-type
177 IF (acc-type = '0')
178 OR (acc-type = '1' )
179 OR (acc-type = '2' )
180 OR (acc-type = '3' )
181 THEN MOVE acc-type to G-acc-type.
182 UNTIL modify-type = '*'.
183 REWRITE (general-ledger-file).
184 ;
185 DESCRIPTION;
186 This routine modify the exist general ledger account
187 from the general ledger file.;
188 CALLS modify-g-l-screen;
189 KEYWORD 'routine-maintain';
190 LOCAL-DATA IS modify-type;
191 LOCAL-DATA IS try-again;
192 LOCAL-DATA IS acc-name;
193 LOCAL-DATA IS acc-type;
194 UTILIZES get-valid-acc-number;
195 CALLED-BY maintain-acc-info;
196
197 DEFINE ROUTINE modify-g-l-screen;
198 # Last changed - May 26, 1984 15:54:08
199 SYNONYMS ARE m-g-l-s;
200 ALGORITHM;
201
202 DISPLAY SCREEN(2,27).
203 DISPLAY 'MODIFY GENERAL LEDGER RECORD'.
204 DISPLAY SCREEN(4,10) .
205 DISPLAY ' ENTER ACCOUNT NUMBER ARE GOING TO BE MODIFY'
206 DISPLAY ' ENTER HERE _____'.
207 DISPLAY SCREEN(6,10)
208 DISPLAY '====='.
209 DISPLAY SCREEN(7,32).
210 DISPLAY 'ORIGINAL RECORD DATA'.
211 DISPLAY SCREEN(8,10) .
212 DISPLAY 'ACCOUNT NUMBER _____'.
213 DISPLAY SCREEN(9,10) .
214 DISPLAY 'ACCOUNT NAME _____'.
215 DISPLAY SCREEN(10,10) .
216 DISPLAY 'ACCOUNT TYPE ' .
```

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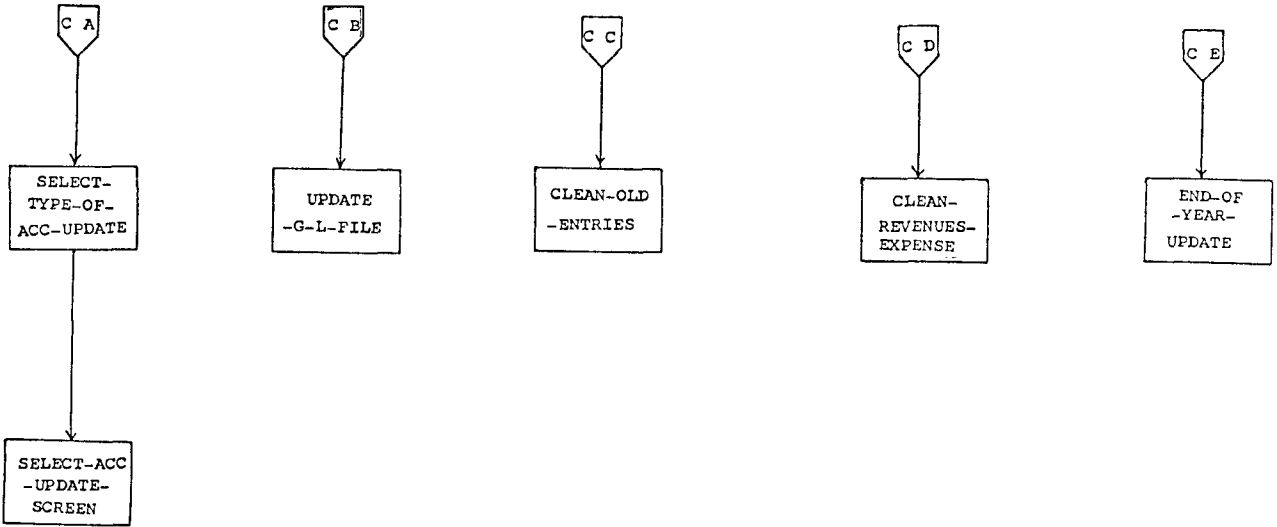
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```
217 DISPLAY SCREEN(11,10) .
218 DISPLAY 'ACCOUNT CURRENT TOTAL _____.'
219 DISPLAY '+++++.'
220 DISPLAY SCREEN(14,10)
221 DISPLAY 'ENTERED NEW VALUE FOR EACH FIELD'.
222 DISPLAY SCREEN(16,10) .
223 DISPLAY 'ACCOUNT NAME _____'.
224 DISPLAY SCREEN(18,10) .
225 DISPLAY 'ACCOUNT TYPE _'.
226 ;
227 DESCRIPTION;
228 This routine shows the screen for modifying
229 general ledger file.
230 ;
231 CALLED-BY          modify-g-l-record;
232
233 DEFINE ROUTINE      select-acc-info-maintain;
234 # Last changed - May 26, 1984 15:42:46
235 SYNONYMS ARE        s-a-i-m;
236 ALGORITHM;
237
238 PERFORM select-info-maintain-screen.
239 REPEAT
240     MOVE 'n' to value-error.
241     ACCEPT maintain-acc-info-type.
242     IF maintain-acc-info-type length <> 1
243     THEN MOVE 'y' to value-error
244     ELSE IF (maintain-acc-info-type <>'*') and
245             (maintain-acc-info-type <>'1') and
246             (maintain-acc-info-type <>'2') and
247             (maintain-acc-info-type <>'3')
248     THEN MOVE 'y' to value-error
249             display 'maintain type improper'.
250 UNTIL value-error='n'.
251 ;
252 DESCRIPTION;
253 This routine decides the type of account information
254 maintain type.;
255 CALLS                select-info-maintain-screen;
256 KEYWORD              'routine-maintain';
257 LOCAL-DATA IS        value-error;
258 PARAMETER            maintain-acc-info-type
259 PASSED-BY            result;
260 CALLED-BY            maintain-acc-info;
261
262 DEFINE ROUTINE      select-info-maintain-screen;
263 # Last changed - May 26, 1984 15:54:08
264 SYNONYMS ARE        s-i-m-s;
265 ALGORITHM;
266
267 DISPLAY SCREEN(2,26) .
268 DISPLAY 'ACCOUNT INFORMATION MAINTAIN'.
269 DISPLAY SCREEN(4,20) .
270 DISPLAY 'SELECT ONE OF FOLLOWING TYPE TO PROCESS '.
271 DISPLAY SCREEN(5,32) .
```

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```
272 DISPLAY 'ENTER SELECTION _'.
273 DISPLAY SCREEN(7,10) .
274 DISPLAY '====='.
275 DISPLAY SCREEN(9,10) .
276 DISPLAY ' * : FOR EXIT THE ACCOUNT INFORMATION MAINTAIN.'
277 DISPLAY SCREEN(11,10) .
278 DISPLAY ' 1 : ADD GENERAL LEDGER ACCOUNT'.
279 DISPLAY SCREEN(13,10) .
280 DISPLAY ' 2 : DELETTE GENERAL LEDGER ACCOUNT'.
281 DISPLAY SCREEN(15,10) .
282 DISPLAY ' 3 : MODIFY GENERAL LEDGER ACCOUNT'.
283 DISPLAY SCREEN(17,10) .
284 DISPLAY '====='.
285 ;
286 DESCRIPTION;
287 This routine shows the types of
    288 account-information-maintain.;
289 CALLED-BY          select-acc-info-maintain;
289 lines printed. 73 statements printed.
```

1 D	ACC-UPDATE-TYPE
-----	-----------------

PARAMETER REFERENCE

Parameters: LANGUAGE=pdsl DB=olive.dbf FILE=par4 PRINT
HSMARG=0 HNMARG=20 SMARG=1 NMARG=25 TMARG=0 SRMARG=80
ONE-PER-LINE DLC-COMMENT

```
1
2 DEFINE ROUTINE          clean-old-entries;
3 # Last changed - May 26, 1984  15:48:21
4   SYNONYMS ARE          c-o-e;
5   ALGORITHM;
6
7 OPEN entered-account-file,
8   pre-entered-account-file.
9 REPEAT
10  READ (pre-entered-account-file)
11 UNTIL eof(pre-entered-account-file).
12 MOVE 'n' to clean-old-entry-error.
13 WHILE not eof(entered-account-file)
14 BEGIN
15   READ (entered-account-file)
16   IF E-update-indicator = 'n' THEN
17   display 'entered account record not updated '
18     MOVE 'y' to clean-old-entry-error
19   ELSE MOVE entered-account-record to
20     pre-entered-account-record
21   WRITE (pre-entered-account-file)
22 END.{while}
23 IF clean-old-entry-error THEN
24   close entered-account-file,
25   pre-entered-account-file
26 ELSE close entered-account-file
27   open input entered-account-file
28   read entered-account-file.
29   write pre-entered-account-file from
30     entered-account-record.
31   close entered-account-file
32   close pre-entered-account-file.
33 ;
34 DESCRIPTION;
35 This process cleans the entered-account-file
36 after the entered accounts are posted to the
37 general-ledger-file. It appends the
38 entered-account to theprevious-entered-
39 account-file to keep theaudit trail.;
40 KEYWORD          'update-routine';
41 KNOWS-OF         E-update-indicator;
42 LOCAL-DATA IS   clean-old-entry-error;
43 CALLED-BY        account-update-process;
44 ROUTINE IN       account-update;
45
46 DEFINE ROUTINE          clean-revenues-expense;
47 # Last changed - May 26, 1984  15:48:21
48   SYNONYMS ARE          c-r-e;
49   ALGORITHM;
50
51 OPEN general-ledger-file.
```

Formatted Statements

```
52 MOVE 0 to total-income.
53 WHILE not eof(general-ledger-file)
54 BEGIN
55     READ (general-ledger-file)
56     IF G-acc-number => 300000
57     THEN ADD G-acc-current-total to total-income
58         MOVE 0 to G-acc-current-total
59 END.{while}
60 IF total-income <> 0
61 THEN
62     READ (general-ledger-file) which is
63         account <retain earnings>
64     ADD total-income to G-acc-current-total
65     REWRITE (general-ledger-file).
66 CLOSE general-ledger-file.
67 ;
68 DESCRIPTION;
69 This process cleans all the revenues and expense
70 accounts in the general-ledger-file at the end
71 of the period according to the request.;
72 KEYWORD          'update-routine';
73 KNOWS-OF        G-acc-number,
74                 G-acc-current-total;
75 LOCAL-DATA IS   total-income;
76 CALLED-BY       account-update-process;
77 ROUTINE IN      account-update;
78
79 DEFINE ROUTINE   end-of-year-update;
80 # Last changed - May 26, 1984 15:48:21
81 SYNONYMS ARE    e-o-y-u;
82 ALGORITHM;
83
84 OPEN entered-account-file,
85     pre-entered-account-file,
86     general-ledger-file.
87 MOVE 'n' end-of-year-update-error.
88 WHILE not eof(entered-acc-file) OR
89     end-of-year-update-error 'y'
90 BEGIN
91     READ (entered-account-file)
92     IF E-update-indicator = 'n' THEN
93     MOVE 'Y' to end-of-year-update-error.
94 END.{while}
95 IF end-of-year-update-error = 'n' THEN
96     clean entered-account-file.
97 WHILE not eof(general-ledger-file) OR
98     end-of-year-update-error 'y'
99 BEGIN
100     READ (general-ledger-file)
101     IF G-acc-number < 300000
102     THEN MOVE G-acc-current-total to G-acc-pre-total
103     ELSE IF G-acc-current-total <> 0
104     THEN MOVE 'y' TO end-of-year-update-error
105     display 'revenues and expense not clean yet'
106 END.{while}
```

Formatted Statements

```
107 IF end-of-year-update-error = 'n' THEN
108     clean pre-entered-acc-file.
109 CLOSE entered-account-file,
110     pre-entered-account-file,
111     general-ledger-file.
112 ;
113 DESCRIPTION;
114 This routine close all the assets and liability
115 accounts in the general-ledger-file at the end of
116 the year.;
117 KEYWORD                'update-routine';
118 KNOWS-OF               E-update-indicator,
119                        G-acc-number,
120                        G-acc-current-total,
121                        G-acc-pre-total;
122 LOCAL-DATA IS         end-of-year-update-error;
123 CALLED-BY              account-update-process;
124 ROUTINE IN             account-update;
125
126 DEFINE ROUTINE         general-ledger-process;
127 # Last changed - May 26, 1984 16:03:08
128 SYNONYMS ARE          g-l-p;
129 ALGORITHM;
130
131 REPEAT
132     PERFORM take-module-type-process.
133     CASE type-of-module:
134         '1': PERFORM account-maintain-process
135         '2': PERFORM account-update-process
136         '3': PERFORM report-generator-process.
137 UNTIL type-of-module = '*'.
138 ;
139 DESCRIPTION;
140 This is a interface routine of general-ledger-system.
141 ;
142 CALLS                  account-maintain-process,
143                        account-update-process,
144                        report-generator-process;
145 KEYWORD                'sub-sys';
146 LOCAL-DATA IS         type-of-module;
147 MAIN ROUTINE FOR      general-ledger-system;
148
149 DEFINE ROUTINE         select-acc-update-screen;
150 # Last changed - May 26, 1984 15:54:08
151 SYNONYMS ARE          s-a-u-s;
152 ALGORITHM;
153
154 DISPLAY SCREEN(2,33) .
155 DISPLAY 'ACCOUNT UPDATE'.
156 DISPLAY SCREEN(4,20) .
157 DISPLAY 'SELECT ONE OF FOLLOWING TYPE TO PROCESS '.
158 DISPLAY SCREEN(5,32) .
159 DISPLAY 'ENTER SELECTION _'.
160 DISPLAY SCREEN(7,17) .
161 DISPLAY '====='.

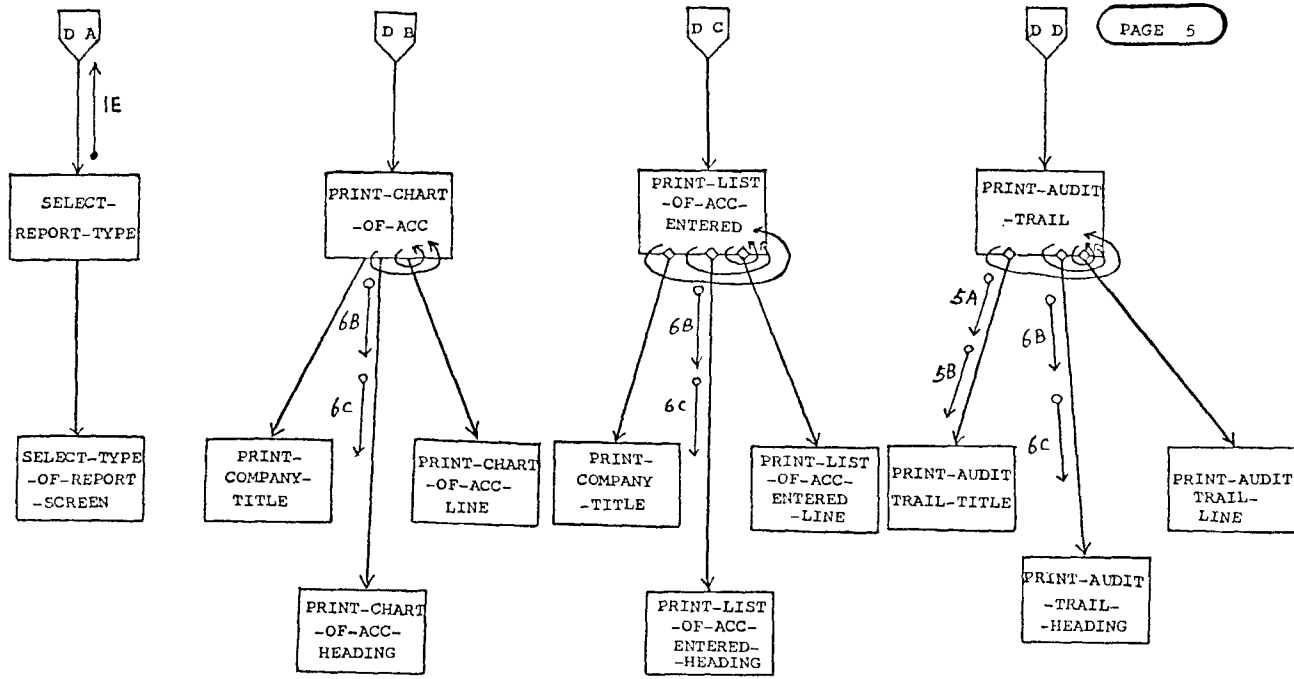
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```
162 DISPLAY SCREEN(9,17) .
163 DISPLAY ' * : FOR EXIT THE ACCOUNT UPDATE'.
164 DISPLAY SCREEN(11,17) .
165 DISPLAY ' 1 : UPDATE GENERAL LEDGER FILE'.
166 DISPLAY SCREEN(13,17) .
167 DISPLAY ' 2 : CLEAN REVENUES AND EXPENSE'.
168 DISPLAY SCREEN(15,17) .
169 DISPLAY ' 3 : CLEAN OLD ENTRIES'.
170 DISPLAY SCREEN(17,17) .
171 DISPLAY ' 4 : END OF YEAR PROCESS'.
172 DISPLAY SCREEN(19,17) .
173 DISPLAY '====='.
174 ;
175 DESCRIPTION;
176 This routine shows the type of account update process.
177 ;
178 CALLED-BY          select-type-acc-update;
179
180 DEFINE ROUTINE      select-type-acc-update;
181 # Last changed - May 26, 1984 15:48:21
182 SYNONYMS ARE        s-t-a-u;
183 ALGORITHM;
184
185 PERFORM select-acc-update-screen.
186 MOVE 'n' to value-error.
187 REPEAT
188     ACCEPT acc-update-type.
189     IF acc-update-type length <> 1 THEN
190         MOVE 'y' to value-error
191         display 'accept value incorrect'
192     ELSE IF (acc-update-type <> '*') and
193             (acc-update-type <> '1') and
194             (acc-update-type <> '2') and
195             (acc-update-type <> '3') and
196             (acc-update-type <> '4')
197     THEN MOVE 'y' to value-error
198     display 'update type inproper'.
199 Until value-error='n'.
200 ;
201 DESCRIPTION;
202 This routine decides the type of account update.;
203 CALLS                select-acc-update-screen;
204 KEYWORD              'update-routine';
205 LOCAL-DATA IS        value-error;
206 PARAMETER            acc-update-type PASSED-BY
207                      result;
208 CALLED-BY            account-update-process;
209 ROUTINE IN           account-update;
210
211 DEFINE ROUTINE        update-G-L-F;
212 # Last changed - May 26, 1984 15:48:21
213 SYNONYMS ARE          u-g-l-f;
214 ALGORITHM;
215
216 OPEN general-ledger-file, entered-acc-file.
```

Formatted Statements

```
217 WHILE not enf(entered-acc-file)
218 BEGIN
219   READ (entered-acc-file).
220   IF E-update-indicator = 'y' THEN
221     display entered-acc-record
222     display 'this record updated already'
223   ELSE READ (general-ledger-file) with same E-acc-number
224     IF E-acc-number not in general-ledger-file
225     THEN display 'this account number not in
226           general-ledger-file'
227     ELSE ADD E-acc-value to G-acc-current-total
228     MOVE 'y' to E-update-indicator
229     REWRITE (general-ledger-file)
230     REWRITE (entered-acc-file)
231 END.{while}
232 CLOSE general-ledger-file, entered-acc-file.
233 ;
234 DESCRIPTION;
235 If the trial balance shows that the account is
236 balance,the entered account entries in entered
237 account file will be posted to geneal ledger file.
238 ;
239 KEYWORD           'update-routine';
240 KNOWS-OF          E-update-indicator,
241                   E-acc-number,
242                   G-acc-number,
243                   E-acc-value,
244                   G-acc-current-total;
245 CALLED-BY         account-update-process;
246 ROUTINE IN        account-update;
246 lines printed. 58 statements printed.
```



PAGE 5

5 A	BEGIN-DATE
5 B	END-DATE
1 E	REPORT-TYPE
6 B	PAGE-NUMBER
6 C	TOTAL-PAGE-NUMBER

PARAMETER REFERENCE

Formatted Statements

Parameters: LANGUAGE=pds1 DB=olive.dbf FILE=par5 PRINT
HSMARG=0 HNMARG=20 SMARG=1 NMARG=25 TMARG=0 SRMARG=80
ONE-PER-LINE DLC-COMMENT

```
1
2 DEFINE LIBRARY-ROUTINE
3         print-company-title;
4 # Last changed - May 26, 1984 15:50:32
5     SYNONYMS ARE             p-c-t;
6     ALGORITHM;
7
8 2 blank lines.
9 DISPLAY 29 spaces, '***** COMPANY'.
10 ;
11 DESCRIPTION;
12 This routine prints the company title .;
13 KEYWORD             'report-routine';
14 COLLECTED IN        general-ledger-library;
15 UTILIZED BY         print-balance-sheet,
16                     print-chart-of-account,
17                     print-income-statement,
18                     print-ledger-sheet,
19                     print-list-of-account-entered,
20                     print-trial-balance;
21
22 DEFINE ROUTINE      print-audit-trail;
23 # Last changed - May 26, 1984 15:50:32
24 SYNONYMS ARE        p-a-t;
25 ALGORITHM;
26
27 MOVE 0 TO repeat-counter.
28 MOVE 0 to total-page-number.
29 REPEAT
30 ACCEPT begin-date, end-date.
31 OPEN pre-entered-acc-file.
32 MOVE 1 to page-number.
33 MOVE 0 TO line-number.
34 IF repeat-counter = 1 THEN
35     PERFORM print-audit-trail-title.
36 ADD 7 to line-number.
37 REPEAT
38     READ (pre-entered-acc-file).
39 UNTIL P-date-of-entry = begin-date.
40 REPEAT
41     PERFORM print-audit-trail-heading.
42     ADD 10 line-number.
43     WHILE (line-number <> 50) or
44         not(eof(pre-entered-acc-file))
45     BEGIN
46         IF repeat-counter = 1 THEN
47             PERFORM print-audit-trail-line.
48         ADD 1 to line-number.
49         READ (pre-entered-acc-file).
50     END.
51 MOVE 0 to line-number.
```


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```
52 UNTIL eof(pre-entered-acc-file) or
53     P-date-of-entry > end-date.
54 CLOSE pre-entered-acc-file.
55 ADD 1 to repeat-counter.
56 MOVE page-number to total-page-number.
57 UNTIL repeat-counter = 2.
58 ;
59 DESCRIPTION;
60 This routine prints the audit trail.;
61 CALLS          print-audit-trail-title,
62                print-audit-trail-heading,
63                print-audit-trail-line;
64 KEYWORD        'report-routine';
65 LOCAL-DATA IS  repeat-counter;
66 LOCAL-DATA IS  begin-date;
67 LOCAL-DATA IS  end-date;
68 LOCAL-DATA IS  line-number;
69 LOCAL-DATA IS  page-number;
70 LOCAL-DATA IS  total-page-number;
71 CALLED-BY      report-generator-process;
72 ROUTINE IN     report-generator;
73
74 DEFINE ROUTINE  print-audit-trail-heading;
75 # Last changed - May 26, 1984 15:50:32
76 SYNONYMS ARE   p-a-t-h;
77 ALGORITHM;
78
79 1 balnk line.
80 DISPLAY 54 spaces, 'AUDIT          TRAIL',
81     with no advancing.
82 DISPLAY 30 spaces, 'PAGE', page-number, 'OF',
83     total-page-number.
84 3 blank lines.
85 DISPLAY ' JOURNAL          ENTRY          ACCOUNT  SOURCE'
86     with no advancing.
87 DISPLAY 47 spaces, 'AMOUNT'.
88 DISPLAY '  ENTRY NO.      DATE          NO.      CODE'
89     with no advancing.
90 DISPLAY 12 spaces, 'ACCOUNT  NAME          DR'
91     with no advancing.
92 DISPLAY 11 spaces, 'CR'.
93 DISPLAY ' _____'
94 DISPLAY '-----'with no advancing.
95 DISPLAY '-----'.
96 2 blank lines.
97 ;
98 DESCRIPTION;
99 This routine prints the heading of audit trail .;
100 KEYWORD        'report-routine';
101 PARAMETER      page-number PASSED-BY
102     value;
103 PARAMETER      total-page-number PASSED-BY
104     value;
105 CALLED-BY      print-audit-trail;
106
```

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```
107 DEFINE ROUTINE          print-audit-trail-line;
108 # Last changed - May 26, 1984 15:50:32
109 SYNONYMS ARE             p-a-t-l;
110 ALGORITHM;
111
112 DISPLAY '                ',P-enentry-nnumber,with no advancing.
113 DISPLAY '                ',P-date-of-enter,with no advancing.
114 DISPLAY '                ', P-account-number,with no advancing.
115 DISPLAY '                ', with no advancing.
116 CASE P-source-code:
117     '1' : DISPLAY 'A/R' with no advancing.
118     '2' : DISPLAY 'A/P' with no advancing.
119     '3' : DISPLAY 'P/R' with no advancing.
120     '4' : DISPLAY 'ADJ' with no advancing.
121 DISPLAY '                ', P-account-name, with no advancing.
122 IF P-account-value < 0 THEN
123     DISPLAY '                ',P-account-value,with no advancing.
124     ELSE DISPLAY '                ',P-account-value
125         ,with no advancing.
126 ;
127 DESCRIPTION;
128 This routine prints a line of audit trail .;
129 KEYWORD                    'report-routine';
130 KNOWS-OF                   P-entry-number,
131                             P-date-of-entry,
132                             P-acc-number,
133                             P-source-code,
134                             P-acc-value,
135                             P-acc-name;
136 CALLED-BY                  print-audit-trail;
137
138 DEFINE ROUTINE             print-audit-trail-title;
139 # Last changed - May 26, 1984 15:50:32
140 SYNONYMS ARE             p-a-t-t;
141 ALGORITHM;
142
143 3 blanks line.
144 DISPLAY 50 spaces,'*****          COMPANY'.
145 DISPLAY 104 spaces ,begin-date.
146 DISPLAY 107 spaces, 'TO'.
147 DISPLAY 104 spaces, end-date.
148 ;
149 DESCRIPTION;
150 This routine prints the title of audit trail .;
151 KEYWORD                    'report-routine';
152 PARAMETER                  end-date PASSED-BY
153                             value;
154 PARAMETER                  begin-date PASSED-BY
155                             value;
156 CALLED-BY                  print-audit-trail;
157
158 DEFINE ROUTINE             print-chart-of-acc-heading;
159 # Last changed - May 26, 1984 15:50:32
160 SYNONYMS ARE             p-c-o-a-h;
161 ALGORITHM;
```

```
162
163 1 blank line.
164 DISPLAY 23 spaces,'CHART OF ACCOUNT AS OF ',
165                               with no advancing.
166 DISPLAY sys-date,'           ','PAGE ',page-number,
167           'OF ',total-page-number.
168 4 balnk lines.
169 DISPLAY 10 spaces,'ACCT NO           ACCT           NAME',
170                               with no advancing.
171 DISPLAY '           TYPE',15 spaces,'AMOUNT'.
172 1 blank line.
173 ;
174 DESCRIPTION;
175 This routine prints the heading of the chart of account.;
176 KEYWORD           'report-routine';
177 PARAMETER         total-page-number PASSED-BY
178                   value;
179 PARAMETER         page-number PASSED-BY
180                   value;
181 CALLED-BY         print-chart-of-account;
182
183 DEFINE ROUTINE     print-chart-of-acc-line;
184 # Last changed - May 26, 1984 15:50:32
185 SYNONYMS ARE      p-c-o-a-l;
186 ALGORITHM;
187
188 DISPLAY 10 spaces,G-acc-number,'   ',G-acc-name,
189                               with no advancing.
190 CASE G-acc-type :
191   '0' : DISPLAY 'REGULAR' with no advancing.
192   '1' : DISPLAY 'TITLE' with no advancing.
193   '2' : DISPLAY 'TOTAL' with no advancing.
194   '3' : DISPLAY 'HEADING' with no advancing.
195 IF G-acc-current-total < 0 THEN
196   DISPLAY abs(G-acc-current-total),'DR'.
197   ELSE DISPLAY G-acc-current-total,'CR'.
198 ;
199 DESCRIPTION;
200 This routine prints a line of the chart of account.;
201 KEYWORD           'report-routine';
202 KNOWS-OF         G-acc-current-total,
203                   G-acc-name,
204                   G-acc-number,
205                   G-acc-type;
206 CALLED-BY         print-chart-of-account;
207
208 DEFINE ROUTINE     print-chart-of-account;
209 # Last changed - May 26, 1984 15:50:32
210 SYNONYMS ARE      p-c-o-a;
211 ALGORITHM;
212
213 OPEN general-ledger-file.
214 MOVE 1 to page-number.
215 MOVE 0 TO line-number.
216 PERFORM print-company-title.
```

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```
217 ADD 5 to line-number.
218 WHILE not EOF(general-ledger-file)
219 BEGIN
220     PERFORM print-chart-of-acc-heading.
221     ADD 6 line-number.
222     WHILE line-number <> 50 or
223         not.eof(general-ledger-file))
224     BEGIN
225         READ (general-ledger-file)
226         PERFORM print-chart-of-acc-line.
227         ADD 1 to line-number.
228     END.
229     MOVE 0 to line-number.
230     ADD 1 to page-number.
231 END.
232 CLOSE general-ledger-file.
233 ;
234 DESCRIPTION;
235 This routine prints the chart of account.;
236 CALLS                print-chart-of-acc-heading,
237                       print-chart-of-acc-line;
238 KEYWORD               'report-routine';
239 LOCAL-DATA IS        line-number;
240 LOCAL-DATA IS        page-number;
241 UTILIZES              print-company-title;
242 CALLED-BY            report-generator-process;
243 ROUTINE IN           report-generator;
244
245 DEFINE ROUTINE        print-list-acc-entered-heading;
246 # Last changed - May 26, 1984 15:50:32
247 SYNONYMS ARE         p-l-a-e-h;
248 ALGORITHM;
249
250 3 blank lines.
251 DISPLAY 102 spaces, 'PAGE 'page-number,' OF ',
252         total-page-number.
253 2 blank lines.
254 DISPLAY 30 spaces, 'JOURNAL  ENTRY  LIST  AS  OF',
255         sys-date.
256 DISPLAY 10 spaces, 'JOURNAL  ENTRY  ACCOUNT  SOURCE',
257         48 spaces, 'AMOUNT'.
258 DISPLAY 10 spaces, 'ENTRY NO.  DATE      NO.      CODE',
259                                     with no advancing.
260 DISPLAY 11 spaces, 'ACCOUNT      NAME',14 spaces, 'DR',
261         17 spaces, 'CR'.
262 DISPLAY 10 spaces, ' _____ ',
263                                     with no advancing.
264 DISPLAY ' _____ ',
265                                     with no advancing.
266 DISPLAY ' _____ '.
267 ;
268 DESCRIPTION;
269 This routine prints the heading of list
270 of account entered.;
271 KEYWORD               'report-routine';
```

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```
272 PARAMETER          total-page-number PASSED-BY
273                   value;
274 PARAMETER          page-number PASSED-BY
275                   value;
276 CALLED-BY          print-list-of-account-entered;
277
278 DEFINE ROUTINE      print-list-acc-entered-line;
279 # Last changed - May 26, 1984 15:50:32
280 SYNONYMS ARE        p-l-a-e-l;
281 ALGORITHM;
282
283 DISPLAY '           ',E-entry-number,' ',
284         E-date-of-entry,' ',E-acc-number,
285         with no advancing.
286 CASE E-source-code :
287     '1' : DISPLAY 'A/R' with no advancing.
288     '2' : DISPLAY 'A/P' with no advancing.
289     '3' : DISPLAY 'P/R' with no advancing.
290     '4' : DISPLAY 'ADJ' with no advancing.
291 DISPLAY '           ',E-acc-name with no advance.
292 IF E-acc-value < 0 THEN
293     DISPLAY '           ', E-acc-value
294     ELSE
295     DISPLAY '           ', E-acc-value.
296 ;
297 DESCRIPTION;
298 This routine prints a line of list of account entered.;
299 KEYWORD              'report-routine';
300 CALLED-BY          print-list-of-account-entered;
301
302 DEFINE ROUTINE      print-list-of-account-entered;
303 # Last changed - May 26, 1984 15:50:32
304 SYNONYMS ARE        p-l-o-a-e;
305 ALGORITHM;
306
307 MOVE 0 TO repeat-counter.
308 MOVE 0 TO total-page-number.
309 REPEAT
310     ACCEPT sys-date.
311     OPEN entered-acc-file.
312     MOVE 1 to page-number.
313     MOVE 0 TO line-number.
314     IF repeat-counter = 1 THEN
315     PERFORM print-company-title.
316     ADD 4 to line-number.
317     REPEAT
318         READ (entered-acc-file).
319     UNTIL E-date-of-entry = sys-date.
320     REPEAT
321         PERFORM print-list-acc-entered-heading.
322         ADD 7 to line-number. to line-number.
323         WHILE (line-number <> 50) or
324             not(eof(entered-acc-file))
325         BEGIN
326             IF repeat-counter = 1 THEN
```

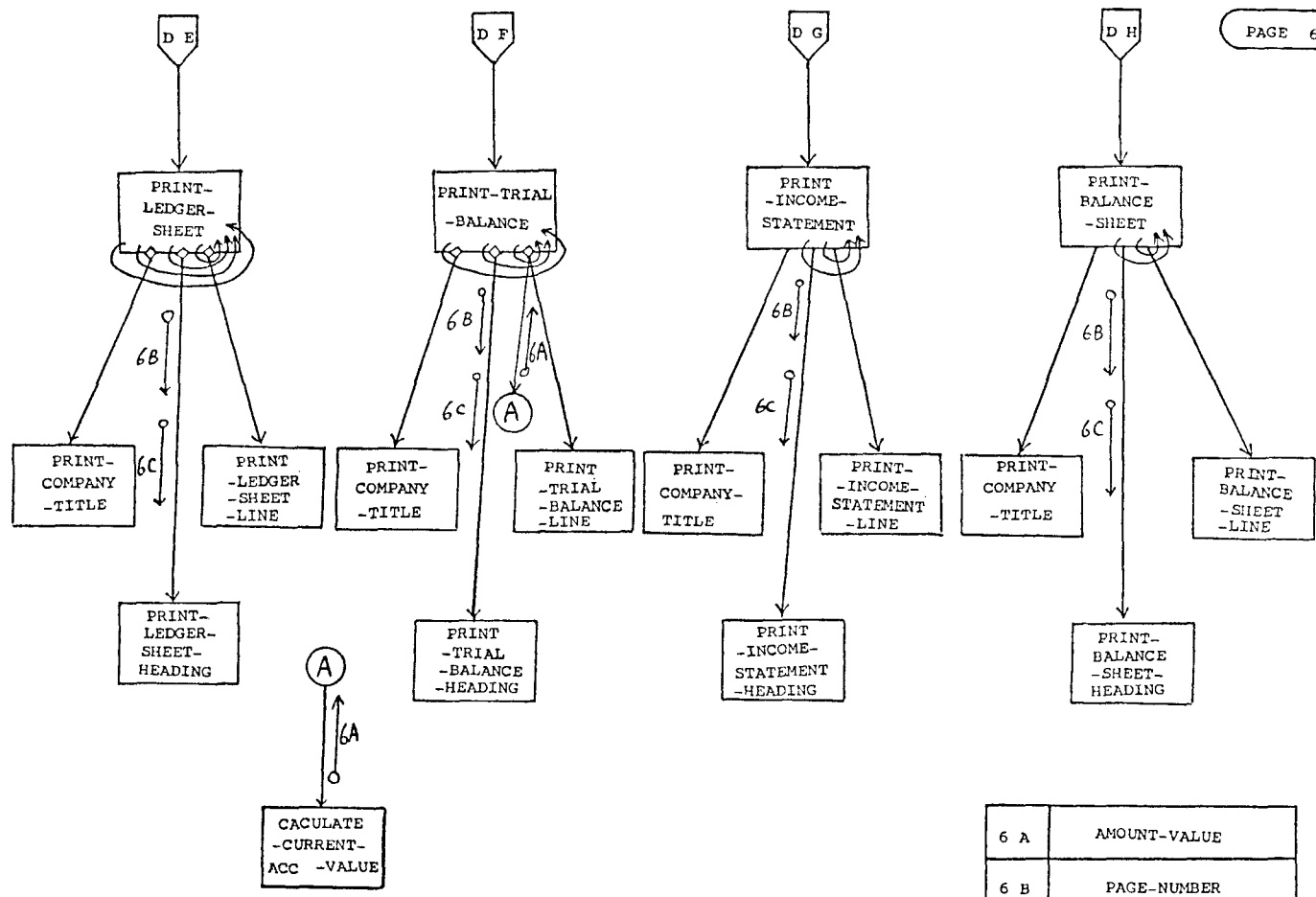
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```
327         PERFORM print-list-acc-entered-line.
328         ADD 1 to line-number.
329         READ (entered-acc-file).
330     END.
331     MOVE 0 to line-number.
332     ADD 1 to page-number.
333     UNTIL eof(entered-acc-file) or
334         E-date-of-entry <> sys-date.
335     CLOSE entered-acc-file.
336     ADD 1 to repeat-counter.
337     MOVE page-number to total-page-number.
338 UNTIL repeat-counter = 2.
339 ;
340 DESCRIPTION;
341 This routine prints the list of account entered.;
342 CALLS    print-list-acc-entered-heading,
343         print-list-acc-entered-line;
344 KEYWORD  'report-routine';
345 KNOWS-OF sys-date;
346 LOCAL-DATA IS page-number;
347 LOCAL-DATA IS line-number;
348 LOCAL-DATA IS total-page-number;
349 LOCAL-DATA IS repeat-counter;
350 UTILIZES print-company-title;
351 CALLED-BY report-generator-process;
352 ROUTINE IN report-generator;
353
354 DEFINE ROUTINE    select-report-type;
355 # Last changed - May 26, 1984 15:50:32
356 SYNONYMS ARE    s-r-t;
357 ALGORITHM;
358
359 PERFORM select-report-type-screen.
360 MOVE 'n' to value-error.
361 REPEAT
362     ACCEPT report-type.
363     IF report-type length <> 1
364     THEN MOVE 'y' to value-error
365         display 'value length error'
366     ELSE
367     IF (report-type<>'*') and
368         (report-type<>'1') and
369         (report-type<>'2') and
370         (report-type<>'3') and
371         (report-type<>'4') and
372         (report-type<>'5') and
373         (report-type<>'6') and
374         (report-type<>'7')
375     THEN MOVE 'y' to value-error
376         display 'report type improper'.
377 UNTIL value-error='n'.
378 ;
379 DESCRIPTION;
380 This routine accepts report type.;
381 CALLS    select-type-of-report-screen;
```

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```
382 KEYWORD 'report-routine';
383 LOCAL-DATA IS value-error;
384 PARAMETER report-type PASSED-BY
385 result;
386 CALLED-BY report-generator-process;
387 ROUTINE IN report-generator;
388
389 DEFINE ROUTINE select-type-of-report-screen;
390 # Last changed - May 26, 1984 15:54:08
391 SYNONYMS ARE s-t-o-r-s;
392 ALGORITHM;
393
394 DISPLAY SCREEN(2,29) .
395 DISPLAY 'SELECT TYPE OF REPORT'.
396 DISPLAY SCREEN(4,20) .
397 DISPLAY 'SELECT ONE OF FOLLOWING TYPE TO PROCESS '.
398 DISPLAY SCREEN(5,32) .
399 DISPLAY 'ENTER SELECTION _'.
400 DISPLAY SCREEN(7,10) .
401 DISPLAY '====='.
402 DISPLAY SCREEN(9,10) .
403 DISPLAY ' * : FOR EXIT THE REPORT GENERATOR PROCESS .'
404 DISPLAY SCREEN(10,10) .
405 DISPLAY ' 1 : CHART OF ACCOUNT'.
406 DISPLAY SCREEN(11,10) .
407 DISPLAY ' 2 : LIST OF ACCOUNT ENTERED'.
408 DISPLAY SCREEN(12,10) .
409 DISPLAY ' 3 : AUDIT TRAIL '.
410 DISPLAY SCREEN(13,10) .
411 DISPLAY ' 4 : LEDGER SHEET '.
412 DISPLAY SCREEN(14,10) .
413 DISPLAY ' 5 : TRIAL BALANCE'.
414 DISPLAY SCREEN(15,10) .
415 DISPLAY ' 6 : INCOME STATEMENT'.
416 DISPLAY SCREEN(16,10) .
417 DISPLAY ' 7 : BALANCE SHEET'.
418 DISPLAY '====='.
419 ;
420 DESCRIPTION;
421 This routine shows the screen for report selection.
422 ;
423 CALLED-BY select-report-type;
423 lines printed. 113 statements printed.
```



6 A	AMOUNT-VALUE
6 B	PAGE-NUMBER
6 C	TOTAL-PAGE-NUMBER

PARAMETER REFERENCE

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Parameters: LANGUAGE=pds1 DB=olive.dbf FILE=par6 PRINT
NOPUNCH HSMARG=0 HNMARG=20 SMARG=1 NMARG=25 TMARG=0
SRMARG=80 ONE-PER-LINE DLC-COMMENT

```
1
2 DEFINE LIBRARY-ROUTINE
3         print-company-title;
4 # Last changed - May 26, 1984 15:50:32
5     SYNONYMS ARE         p-c-t;
6     ALGORITHM;
7
8 2 blank lines.
9 DISPLAY 29 spaces, '***** COMPANY'.
10 ;
11 DESCRIPTION;
12 This routine prints the company title .;
13 KEYWORD         'report-routine';
14 COLLECTED IN     general-ledger-library;
15 UTILIZED BY     print-balance-sheet,
16                 print-chart-of-account,
17                 print-income-statement,
18                 print-ledger-sheet,
19                 print-list-of-account-entered,
20                 print-trial-balance;
21
22 DEFINE ROUTINE     caculate-current-acc-value;
23 # Last changed - May 26, 1984 15:50:32
24 SYNONYMS ARE     c-c-a-v;
25 ALGORITHM;
26
27 OPEN entered-account-file.
28 MOVE G-acc-current-total to amount-value.
29 WHILE not eof(entered-account-file)
30 BEGIN
31     READ (entered-account-file)
32     IF E-acc-number = G-acc-number THEN
33         ADD E-acc-value to amount-value .
34 END. {while}
35 CLOSE enntered-account-file.
36 ;
37 DESCRIPTION;
38 This routine caculate the current value for each account;
39 KEYWORD         'report-routine';
40 PARAMETER       amount-value PASSED-BY
41                 result;
42 CALLED-BY       print-trial-balance;
43
44 DEFINE ROUTINE     print-balance-sheet;
45 # Last changed - May 26, 1984 15:50:32
46 SYNONYMS ARE     p-b-s;
47 ALGORITHM;
48
49 OPEN general-ledger-file.
50 MOVE 1 to page-number.
51 MOVE 0 TO line-number.
```

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```
52 PERFORM print-company-title.
53 ADD 3 to line-number.
54 WHILE not EOF(general-ledger-file)
55 BEGIN
56     PERFORM print-balance-sheet-heading.
57     ADD 7 line-number.
58     WHILE line-number <> 50 or
59         not(eof(general-ledger-file))
60     BEGIN
61         READ (general-ledger-file).
62         IF G-acc-number < 300000 THEN
63             PERFORM print-balance-sheet-line
64             ADD 1 to line-number.
65     END.
66     MOVE 0 to line-number.
67     ADD 1 to page-number.
68 END.
69 CLOSE general-ledger-file.
70 ;
71 DESCRIPTION;
72 This routine prints the balance sheet.;
73 CALLS                print-balance-sheet-heading,
74                       print-balance-sheet-line;
75 KEYWORD               'report-routine';
76 LOCAL-DATA IS        line-number;
77 LOCAL-DATA IS        page-number;
78 UTILIZES              print-company-title;
79 CALLED-BY             report-generator-process;
80 ROUTINE IN            report-generator;
81
82 DEFINE ROUTINE        print-balance-sheet-heading;
83 # Last changed - May 26, 1984 15:50:32
84 ALGORITHM;
85
86 2 blank lines.
87 DISPLAY 33 spaces, 'BALANCE SHEET'.
88 DISPLAY 73 spaces, 'PAGE ',page-number,' OF ',
89                       total-page-number.
90 DISPLAY 33 spaces, 'AS OF ',sys-date.
91 2 blank lines.
92 ;
93 DESCRIPTION;
94 This routine prints the heading of the balance sheet;
95 SYNONYM p-b-s-h;
96 KEYWORD               'report-routine';
97 KNOWS-OF              sys-date;
98 PARAMETER             total-page-number
99 PASSED-BY             value;
100 PARAMETER             page-number PASSED-BY
101                       value;
102 CALLED-BY             print-balance-sheet;
103
104 DEFINE ROUTINE        print-balance-sheet-line;
105 # Last changed - May 26, 1984 15:50:32
106 SYNONYMS ARE          p-b-s-l;
```

```
107 ALGORITHM;
108
109 DISPLAY 10 spaces,G-acc-name ,15 spaces,with no advancing.
110 CASE G-ACC-TYPE :
111     '0' : IF G-acc-current-total > 0 THEN
112           DISPLAY G-acc-current-total
113           ELSE DISPLAY '<',abs(G-acc-current-total),'>'.
114           FOR INDEX = index to 8 DO
115             ADD G-acc-current-total to total(INDEX).
116     '2' : IF total(index) > 0 THEN
117           DISPLAY '                ',total(index)
118           ELSE
119             DISPLAY '                <',abs(total(index)), '>'.
120             ADD 1 to the index.
121     '3' : DECREASE index by 1.
122 ;
123 DESCRIPTION;
124 This routine prints a line of the balance sheet .;
125 KEYWORD          'report-routine';
126 CALLED-BY        print-balance-sheet;
127
128 DEFINE ROUTINE    print-income-statement;
129 # Last changed - May 26, 1984 15:50:32
130 SYNONYMS ARE     p-i-s;
131 ALGORITHM;
132
133 OPEN general-ledger-file.
134 MOVE 1 to page-number.
135 MOVE 0 TO line-number.
136 PERFORM print-company-title.
137 ADD 3 to line-number.
138 WHILE not EOF(general-ledger-file)
139 BEGIN
140     PERFORM print-income-statement-heading.
141     ADD 7 line-number.
142     WHILE line-number <> 50 or
143           not(eof(general-ledger-file))
144     BEGIN
145         READ (general-ledger-file).
146         IF G-acc-number => 300000 THEN
147             PERFORM print-income-statement-line
148             ADD 1 to line-number.
149     END.
150     MOVE 0 to line-number.
151     ADD 1 to page-number.
152 END.
153 CLOSE general-ledger-file.
154 ;
155 DESCRIPTION;
156 This routine prints the income statement.;
157 CALLS          print-income-statement-heading,
158                print-income-statement-line;
159 KEYWORD        'report-routine';
160 LOCAL-DATA IS  line-number;
161 LOCAL-DATA IS  page-number;
```

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```
162 UTILIZES          print-company-title;
163 CALLED-BY         report-generator-process;
164 ROUTINE IN        report-generator;
165
166 DEFINE ROUTINE    print-income-statement-heading;
167 # Last changed - May 26, 1984 15:50:32
168 SYNONYMS ARE      p-i-s-h;
169 ALGORITHM;
170
171 2 blank lines.
172 DISPLAY 39 spaces,'INCOME STATEMENT'.
173 DISPLAY 77 spaces,'PAGE ',page-number,' OF ',
174     total-page-number.
175 DISPLAY 30 spaces,'FOR THE PERIOD ENDING ',
176     sys-date.
177 2 blank lines.
178 ;
179 DESCRIPTION;
180 This routine prints the heading of the income statement.;
181 KEYWORD            'report-routine';
182 PARAMETER          total-page-number PASSED-BY
183     value;
184 PARAMETER          page-number PASSED-BY
185     value;
186 CALLED-BY          print-income-statement;
187
188 DEFINE ROUTINE    print-income-statement-line;
189 # Last changed - May 26, 1984 15:50:32
190 SYNONYMS ARE      p-i-s-l;
191 ALGORITHM;
192
193 DISPLAY 10 spaces,G-acc-name ,15 spaces,with no advancing.
194 CASE G-ACC-TYPE :
195     '0' : IF G-acc-current-total > 0 THEN
196         DISPLAY G-acc-current-total
197         ELSE DISPLAY '<',abs(G-acc-current-total),'>'.
198         FOR INDEX = index to 8 DO
199             ADD G-acc-current-total to total(INDEX).
200     '2' : IF total(index) > 0 THEN
201         DISPLAY '          ',total(index)
202         ELSE
203             DISPLAY '          <',abs(total(index)),'>'.
204         ADD 1 to the index.
205     '3' : DECREASE index by 1.
206 ;
207 DESCRIPTION;
208 This routine prints a line of the income statement.;
209 KEYWORD            'report-routine';
210 KNOWS-OF          G-acc-name,
211     G-acc-type,
212     G-acc-current-total;
213 CALLED-BY          print-income-statement;
214
215 DEFINE ROUTINE    print-ledger-sheet;
216 # Last changed - May 26, 1984 15:50:32
```

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```
217 SYNONYMS ARE          p-l-s;
218 ALGORITHM;
219
220 WHILE not eof(general-ledger-file)
221 BEGIN
222     OPEN general-ledger-file.
223     MOVE 1 to page-number.
224     MOVE 0 TO line-number.
225     READ (general-ledger-file).
226     PERFORM print-company-title.
227     ADD 4 to line-number.
228     MOVE 0 to repeat-counter.
229     MOVE 0 to total-page-number.
230     REPEAT
231         OPEN (entered-acc-file).
232         MOVE 0 TO net-change.
233         REPEAT
234             PERFORM print-ledger-sheet-heading.
235             ADD 7 to line-number.
236             REPEAT
237                 READ (entered-account-file).
238                 IF E-acc-number = G-acc-number THEN
239                     ADD 1 to line-number
240                 IF repeat-counter = 1 THEN
241                     ADD E-account-value TO net-change
242                     PERFORM print-ledger-sheet-line.
243             UNTIL line-number=50 or eof(entered-account-file).
244             ADD 1 to page-number.
245             MOVE 0 to line-number.
246             UNTIL eof(entered-account-file).
247             CLOSE (entered-account-file).
248             ADD 1 to repeat-counter.
249             IF repeat-counter = 2 THEN
250                 DISPLAY 'NET CHANGE ' net-change
251                 DISPLAY 'ACCOUNT NAME'
252                 DISPLAY account-name
253                 DISPLAY 'OPEN BALANCE ' G-current-value
254                 DISPLAY 'CLOSING BALANCE '
255                 G-current-value + net-change.
256             IF repeat-counter = 1 THEN MOVE page-number to
257             total-page-number.
258         UNTIL repeat-counter = 2.
259     END .{while}
260 CLOSE (general-ledger-file).
261 ;
262 DESCRIPTION;
263 This routine prints the ledger sheet.;
264 CALLS          print-ledger-sheet-heading,
265                print-ledger-sheet-line;
266 KEYWORD        'report-routine';
267 LOCAL-DATA IS  repeat-counter;
268 LOCAL-DATA IS  net-change;
269 LOCAL-DATA IS  line-number;
270 LOCAL-DATA IS  total-page-number;
271 LOCAL-DATA IS  page-number;
```

Univ-of-Montana-VAX-11/750

Formatted Statements

```

272 UTILIZES          print-company-title;
273 CALLED-BY        report-generator-process;
274 ROUTINE IN       report-generator;
275
276 DEFINE ROUTINE    print-ledger-sheet-heading;
277 # Last changed - May 26, 1984 15:50:32
278 SYNONYMS ARE     p-l-s-h;
279 ALGORITHM;
280
281 2 blank lines.
282 DISPLAY '          ' , sys-date.
283 DISPLAY '          'with no advancing.
284 DISPLAY 'LEDGER SHEET 'with no advancing.
285 DISPLAY ' PAGE',page-number,' OF ',
286          total-page-number.
287 2 blank lines.
288 DISPLAY ' ACCOUNT SOURCE JOURNAL'
289          with no advancing.
290 DISPLAY '          AMOUNT'.
291 DISPLAY '          NO. CODE ENTRY NO.'
292          with no advancing.
293 DISPLAY ' DATE DR CR'.
294 DISPLAY ' -----'
295          with no advancing.
296 DISPLAY '-----'
297 ;
298 DESCRIPTION;
299 This routine prints the heading of ledger sheet.;
300 KEYWORD          'report-routine';
301 PARAMETER        page-number PASSED-BY
302          value;
303 PARAMETER        total-page-number PASSED-BY
304          value;
305 CALLED-BY        print-ledger-sheet;
306
307 DEFINE ROUTINE    print-ledger-sheet-line;
308 # Last changed - May 26, 1984 15:50:32
309 SYNONYMS ARE     p-l-s-l;
310 ALGORITHM;
311
312 DISPLAY '          'E-account-number,with no advancing.
313 DISPLAY '          ' , with no advancing.
314 CASE E-source-code :
315     '1' : DISPLAY 'A/R' with no advancing.
316     '2' : DISPLAY 'A/P' with no advancing.
317     '3' : DISPLAY 'P/R' with no advancing.
318     '4' : DISPLAY 'ADJ' with no advancing.
319 DISPALY '          ' E-entry-number , with no advancing.
320 DISPLAY '          ' E-date-of-entry , with no advancing.
321 IF E-acc-value < 0 THEN
322     DISPLAY '          ' , E-acc-value
323 ELSE
324     DISPLAY '          ' , E-acc-value.
325 ;
326 DESCRIPTION;

```

Univ-of-Montana-VAX-11/750

Formatted Statements

```
327 This routine prints a line of ledger sheet.;
328 KEYWORD 'report-routine';
329 KNOWS-OF E-source-code,
330 E-date-of-entry,
331 E-acc-value,
332 E-entry-number,
333 E-acc-number,
334 E-acc-name;
335 CALLED-BY print-ledger-sheet;
336
337 DEFINE ROUTINE print-trial-balance;
338 # Last changed - May 26, 1984 15:50:32
339 SYNONYMS ARE p-t-b;
340 ALGORITHM;
341
342 MOVE 0 to repeat-counter.
343 REPEAT
344 MOVE 0 to total-CR,total-DR.
345 OPEN general-ledger-file.
346 MOVE 1 to page-number.
347 MOVE 0 TO line-number.
348 IF repeat-counter = 1 THEN
349 PERFORM print-company-title.
350 ADD 4 to line-number.
351 WHILE not EOF(general-ledger-file)
352 BEGIN
353 IF repeat-counter = 1 THEN
354 PERFORM print-trial-balance-heading.
355 ADD 6 line-number.
356 REPEAT
357 READ (general-ledger-file).
358 IF G-acc-type = 0 THEN
359 PERFORM caculate-current-acc-value.
360 IF repeat-counter = 1 THEN
361 IF amount < 0 THEN
362 ADD amount-value to total-DR
363 ELSE
364 ADD amount-value to total-CR.
365 IF amount-value <> 0 THEN
366 ADD 1 to line-number
367 IF repeat-counter = 1 THEN
368 PERFORM print-trial-balance-line.
369 UNTIL line-number = 50.
370 ADD 1 to page-number.
371 MOVE 0 to line-number.
372 END.
373 CLOSE general-ledger-file.
374 ADD 1 to repesat-counter.
375 MOVE page-number to total-page-number.
376 UNTIL repeat-counter = 2.
377 IF total-CR = total-DR THEN
378 DISPLAY ' ', 75 '='.
379 DISPLAY 'TOTAL 'total-DR,' = ',total-CR.
380 ELSE
381 DISPLAY 'TOTAL 'total-DR,' <> 'total-CR.
```

```

382 ;
383 DESCRIPTION;
384 This routine prints the trial balance.;
385 CALLS          print-trial-balance-heading,
386                print-trial-balance-line,
387                caculate-current-acc-value;
388 KEYWORD        'report-routine';
389 LOCAL-DATA IS  page-number;
390 LOCAL-DATA IS  line-number;
391 LOCAL-DATA IS  total-page-number;
392 LOCAL-DATA IS  repeat-counter;
393 LOCAL-DATA IS  total-CR;
394 LOCAL-DATA IS  total-DR;
395 LOCAL-DATA IS  amount-value;
396 UTILIZES      print-company-title;
397 CALLED-BY     report-generator-process;
398 ROUTINE IN    report-generator;
399
400 DEFINE ROUTINE print-trial-balance-heading;
401 # Last changed - May 26, 1984 15:50:32
402 SYNONYMS ARE  p-t-b-h;
403 ALGORITHM;
404
405 DISPLAY 37 spaces,'TRIAL    BALANCE    SHEET',
406         15 spaces,'PAGE ',page-number,' OF ',
407         total-page-number.
408 2 balnk lines.
409 DISPLAY 10 spaces,'ACCOUNT',12 spaces,'ACCOUNT',
410         27 spaces,'AMOUNT'.
411 DISPLAY 12 spaces,'no.','17 spaces,'NAME',20 spaces,
412         'DR          CR'.
413 DISPLAY 10 spaces,' _____ ',30 '_',' ',
414         31 ' '.
415 ;
416 DESCRIPTION;
417 This routine prints the heading of the trial balance .;
418 KEYWORD        'report-routine';
419 PARAMETER      total-page-number PASSED-BY
420                value;
421 PARAMETER      page-number PASSED-BY
422                value;
423 CALLED-BY     print-trial-balance;
424
425 DEFINE ROUTINE print-trial-balance-line;
426 # Last changed - May 26, 1984 15:50:32
427 SYNONYMS ARE  p-t-b-l;
428 ALGORITHM;
429
430 DISPLAY '          ',G-acc-number,'          ',G-acc-name
431                with no advancing.
432 IF amount-value > 0 THEN
433     DISPLAY '          ',amount-value
434 ELSE
435     DISPLAY '          ',amount-value.
436 ;

```


Univ-of-Montana-VAX-11/750

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```
437 DESCRIPTION;
438 This routine prints a line of the trial balance .;
439 KEYWORD          'report-routine';
440 PARAMETER        amount-value PASSED-BY
441                  value;
442 CALLED-BY        print-trial-balance;
443
444 DEFINE ROUTINE   print-trial-balance-title;
445 # Last changed - May 26, 1984 15:50:32
446 SYNONYMS ARE    p-t-b-t;
447 ALGORITHM;
448
449 3 blank lines.
450 DISPLAY 36 spaces, '*****          COMPANY',
451          18 spaces, sys-date.
452 DISPLAY 37 spaces, 'TRIAL    BALANCE    SHEET',
453          15 spaces, 'PAGE ', page-number, ' OF ',
454          total-page-number.
455 ;
456 DESCRIPTION;
457 This routine prints the tital of the trial balance .;
458 KEYWORD          'report-routine';
459 PARAMETER        total-page-number
460 PASSED-BY        value;
461 PARAMETER        page-number PASSED-BY
462                  value;
462 lines printed. 132 statements printed.
```

=====
APPENDIX C PROGRAMS
=====

*

 IDENTIFICATION DIVISION.
 *-----

PROGRAM-ID.
 SCREEN.
 AUTHOR.
 CHUNG-CHIEH WU.
 DATE-WRITTEN.
 FEB 22,1984.

*

 ENVIRONMENT DIVISION.
 *-----

CONFIGURATION SECTION.

SOURCE-COMPUTER.
 DECSYSTEM-20.

OBJECT-COMPUTER.
 DECSYSTEM-20.

*

 DATA DIVISION.
 *-----

*

 WORKING-STORAGE SECTION.
 *-----

01 CHARACTER-VALUES

			USAGE	IS	DISPLAY-7.
05	FILLER	PIC	X	VALUE	' ' .
05	FILLER	PIC	X	VALUE	'!' .
05	FILLER	PIC	X	VALUE	'" ' .
05	FILLER	PIC	X	VALUE	'# ' .
05	FILLER	PIC	X	VALUE	'\$ ' .
05	FILLER	PIC	X	VALUE	'% ' .
05	FILLER	PIC	X	VALUE	'& ' .
05	FILLER	PIC	X	VALUE	'" ' .
05	FILLER	PIC	X	VALUE	'(' .
05	FILLER	PIC	X	VALUE	')' .
05	FILLER	PIC	X	VALUE	'*' .
05	FILLER	PIC	X	VALUE	'+' .
05	FILLER	PIC	X	VALUE	' , ' .
05	FILLER	PIC	X	VALUE	'-' .
05	FILLER	PIC	X	VALUE	'.' .
05	FILLER	PIC	X	VALUE	'/' .
05	FILLER	PIC	X	VALUE	'0' .
05	FILLER	PIC	X	VALUE	'1' .
05	FILLER	PIC	X	VALUE	'2' .
05	FILLER	PIC	X	VALUE	'3' .
05	FILLER	PIC	X	VALUE	'4' .
05	FILLER	PIC	X	VALUE	'5' .
05	FILLER	PIC	X	VALUE	'6' .

05	FILLER	PIC	X VALUE	'7' .
05	FILLER	PIC	X VALUE	'8' .
05	FILLER	PIC	X VALUE	'9' .
05	FILLER	PIC	X VALUE	':' .
05	FILLER	PIC	X VALUE	',' .
05	FILLER	PIC	X VALUE	'<' .
05	FILLER	PIC	X VALUE	'=' .
05	FILLER	PIC	X VALUE	'>' .
05	FILLER	PIC	X VALUE	'?' .
05	FILLER	PIC	X VALUE	'@' .
05	FILLER	PIC	X VALUE	'A' .
05	FILLER	PIC	X VALUE	'B' .
05	FILLER	PIC	X VALUE	'C' .
05	FILLER	PIC	X VALUE	'D' .
05	FILLER	PIC	X VALUE	'E' .
05	FILLER	PIC	X VALUE	'F' .
05	FILLER	PIC	X VALUE	'G' .
05	FILLER	PIC	X VALUE	'H' .
05	FILLER	PIC	X VALUE	'I' .
05	FILLER	PIC	X VALUE	'J' .
05	FILLER	PIC	X VALUE	'K' .
05	FILLER	PIC	X VALUE	'L' .
05	FILLER	PIC	X VALUE	'M' .
05	FILLER	PIC	X VALUE	'N' .
05	FILLER	PIC	X VALUE	'O' .
05	FILLER	PIC	X VALUE	'P' .
05	FILLER	PIC	X VALUE	'Q' .
05	FILLER	PIC	X VALUE	'R' .
05	FILLER	PIC	X VALUE	'S' .
05	FILLER	PIC	X VALUE	'T' .
05	FILLER	PIC	X VALUE	'U' .
05	FILLER	PIC	X VALUE	'V' .
05	FILLER	PIC	X VALUE	'W' .
05	FILLER	PIC	X VALUE	'X' .
05	FILLER	PIC	X VALUE	'Y' .
05	FILLER	PIC	X VALUE	'Z' .
05	FILLER	PIC	X VALUE	'[' .
05	FILLER	PIC	X VALUE	'\' .
05	FILLER	PIC	X VALUE	']' .
05	FILLER	PIC	X VALUE	'^' .
05	FILLER	PIC	X VALUE	'_'
05	FILLER	PIC	X VALUE	'~' .
05	FILLER	PIC	X VALUE	'a' .
05	FILLER	PIC	X VALUE	'b' .
05	FILLER	PIC	X VALUE	'c' .
05	FILLER	PIC	X VALUE	'd' .
05	FILLER	PIC	X VALUE	'e' .
05	FILLER	PIC	X VALUE	'f' .
05	FILLER	PIC	X VALUE	'g' .
05	FILLER	PIC	X VALUE	'h' .
05	FILLER	PIC	X VALUE	'i' .
05	FILLER	PIC	X VALUE	'j' .
05	FILLER	PIC	X VALUE	'k' .
05	FILLER	PIC	X VALUE	'l' .
05	FILLER	PIC	X VALUE	'm' .
05	FILLER	PIC	X VALUE	'n' .

```

05          FILLER      PIC      X VALUE 'o' .

01 SCREEN-TABLE-C REDEFINES CHARACTER-VALUES
                        USAGE IS DISPLAY-7.
    05 SCREEN-POSITION PIC      X
                        OCCURS 80 TIMES .

01 CONTRO-CHARACTER   PIC      XX
                        VALUES '^{'Y'
                        USAGE IS DISPLAY-7.

77 COLUMN-NUMBER     PIC      99.

77 ROW-NUMBER        PIC      99.

LINKAGE SECTION.

01 SCREEN-TABLE.
    05 SCREEN-ROWS           OCCURS 24 TIMES.
    10 SCREEN-LOCATION       PIC X(4)
                            USAGE IS DISPLAY-7
                            OCCURS 80 TIMES.

01 CLEAR-SCREEN        PIC  XX   DISPLAY-7.

01 RING-BELL          PIC  X    DISPLAY-7.

01 REVERSE-VEDIO     PIC  XX   DISPLAY-7.

01 EXIT-REVERSE      PIC  XX   DISPLAY-7.

```

```

*
-----
PROCEDURE DIVISION , USING SCREEN-TABLE
    CLEAR-SCREEN RING-BELL
    REVERSE-VEDIO EXIT-REVERSE.
*
-----

```

MAIN-PROGRAM.

```

    PERFORM BUILD-SCREEN-TABLE .
    PERFORM DEFINE-CLEAR-BELL.
    EXIT PROGRAM.

```

BUILD-SCREEN-TABLE.

```

    MOVE 1 TO ROW-NUMBER.
    PERFORM BUILD-ROW UNTIL ROW-NUMBER IS
        GREATER THAN 24.

```

BUILD-ROW.

```

    MOVE 1 TO COLUMN-NUMBER.
    PERFORM BUILD-COLUMN UNTIL COLUMN-NUMBER
        IS GREATER THAN 80.
    ADD 1 TO ROW-NUMBER.

```

BUILD-COLUMN.

```

    STRING CONTRO-CHARACTER DELIMITED BY SIZE
        SCREEN-POSITION(ROW-NUMBER) DELIMITED BY SIZE

```

SCREEN-POSITION(COLUMN-NUMBER) DELIMITED BY SIZE
INTO SCREEN-LOCATION(ROW-NUMBER , COLUMN-NUMBER).
ADD 1 TO COLUMN-NUMBER.

DEFINE-CLEAR-BELL.

MOVE '^[E' TO CLEAR-SCREEN.
MOVE '^G' TO RING-BELL.
MOVE '^[p' TO REVERSE-VIDEO.
MOVE '^[q' TO EXIT-REVERSE.

*-----
 IDENTIFICATION DIVISION.
 *-----

PROGRAM-ID.
 MODULE
 AUTHOR. CCW
 DATE-WRITTEN.
 25-MAR-1984

*-----
 ENVIRONMENT DIVISION.
 *-----

INPUT-OUTPUT SECTION.

*-----
 DATA DIVISION.
 *-----

WORKING-STORAGE SECTION.

01 TEST-VALUE-A.			
05 FRONT-A	PIC	X.	
05 BEHIND-A	PIC	X(9).	
01 MODULE-TYPE	PIC	X.	
01 SCREEN-TABLE.			
05 SCREEN-ROWS			OCCURS 24 TIMES.
10			SCREEN PIC X(4)
			USAGE IS DISPLAY-7
			OCCURS 80 TIMES.
01 VALUE-ERROR	PIC	X.	
01 REVERSE-VIDEO	PIC	XX DISPLAY-7.	
01 EXIT-REVERSE	PIC	XX DISPLAY-7.	
01 CLEAR-SCREEN	PIC	XX DISPLAY-7.	
01 RING-BELL	PIC	X DISPLAY-7.	
77 TAKE-TYPE	PIC	X VALUE 'N'.	
88 TAKE-TYPE-OK		VALUE 'Y'.	

*-----
 PROCEDURE DIVISION.
 *-----

MAIN.
 CALL 'SCREEN' USING SCREEN-TABLE CLEAR-SCREEN
 RING-BELL REVERSE-VIDEO EXIT-REVERSE.
 PERFORM GENERAL-LEDGER-PROCESS UNTIL

MODULE-TYPE EQUAL '*'.

STOP RUN.

GENERAL-LEDGER-PROCESS.

```

PERFORM SELECT-MODULE-TYPE-SCREEN.
MOVE 'N' TO TAKE-TYPE.
MOVE 'N' TO VALUE-ERROR.
PERFORM TAKE-MODULE-TYPE-PROCESS UNTIL
                                TAKE-TYPE-OK.

IF MODULE-TYPE = '1'
    PERFORM ACCOUNT-MAINTAIN-PROCESS
ELSE IF MODULE-TYPE = '2'
    PERFORM ACCOUNT-UPDATE-PROCESS
ELSE IF MODULE-TYPE = '3'
    PERFORM REPORT-GENERATOR-PROCESS.
DISPLAY CLEAR-SCREEN WITH NO ADVANCING.

```

SELECT-MODULE-TYPE-SCREEN.

```

DISPLAY CLEAR-SCREEN WITH NO ADVANCING.
DISPLAY REVERSE-VIDEO WITH NO ADVANCING.
DISPLAY SCREEN(1,32) WITH NO ADVANCING.
DISPLAY 'SCREEN - 1.0'
                                WITH NO ADVANCING.
DISPLAY SCREEN(2,27) WITH NO ADVANCING.
DISPLAY 'GENERAL LEDGER SYSTEM'
                                WITH NO ADVANCING.
DISPLAY EXIT-REVERSE WITH NO ADVANCING.
DISPLAY SCREEN (4,20) WITH NO ADVANCING.
DISPLAY
'SELECT ONE OF THE FOLLOWING TYPE TO PROCESS'
                                WITH NO ADVANCING.
DISPLAY SCREEN (5,32) WITH NO ADVANCING.
DISPLAY 'ENTER SELECTION: _' WITH NO ADVANCING.
    DISPLAY SCREEN(7,18) WITH NO ADVANCING.
DISPLAY '===== '
                                WITH NO ADVANCING.
DISPLAY SCREEN(9,18) WITH NO ADVANCING.
DISPLAY ' * : FOR EXIT GENERAL LEDGER SYSTEM '
                                WITH NO ADVANCING.
DISPLAY SCREEN(11,18) WITH NO ADVANCING.
DISPLAY ' 1 : FOR ACCOUNT MAINTAIN PROCESS '
                                WITH NO ADVANCING.
DISPLAY SCREEN(13,18) WITH NO ADVANCING.
DISPLAY ' 2 : FOR ACCOUNT UPDATE PROCESS '
                                WITH NO ADVANCING.
DISPLAY SCREEN(15,18) WITH NO ADVANCING.
DISPLAY ' 3 : FOR REPORT GENERATOR PROCESS '
                                WITH NO ADVANCING.
DISPLAY SCREEN(17,18) WITH NO ADVANCING.
DISPLAY '===== '
                                WITH NO ADVANCING.

```

TAKE-MODULE-TYPE-PROCESS.

```

MOVE SPACES TO TEST-VALUE-A.
MOVE 'N' TO TAKE-TYPE.

```



```

IF VALUE-ERROR EQUAL 'Y'
    PERFORM VALUE-ERROR-HANDLE-1.
DISPLAY RING-BELL WITH NO ADVANCING.
DISPLAY SCREEN(5,49) WITH NO ADVANCING.
ACCEPT TEST-VALUE-A.
IF BEHIND-A EQUAL ' '
IF FRONT-A EQUAL '1' OR EQUAL '2' OR EQUAL '3'
    OR EQUAL '*'
    MOVE 'Y' TO TAKE-TYPE
    MOVE FRONT-A TO MODULE-TYPE.
IF TAKE-TYPE = 'N' MOVE 'Y' TO VALUE-ERROR.
DISPLAY SCREEN(22,7) WITH NO ADVANCING.
DISPLAY ' '
    WITH NO ADVANCING.
DISPLAY SCREEN(23,7) WITH NO ADVANCING.
DISPLAY ' '
    WITH NO ADVANCING.

```

VALUE-ERROR-HANDLE-1.

```

DISPLAY SCREEN(22,7) WITH NO ADVANCING.
DISPLAY REVERSE-VIDEO WITH NO ADVANCING.
DISPLAY 'ERROR MESSAGE::' WITH NO ADVANCING.
DISPLAY EXIT-REVERSE WITH NO ADVANCING.
DISPLAY SCREEN(23,7) WITH NO ADVANCING.
DISPLAY 'INVALID RESPONSE . PLEASE REENTER'
    WITH NO ADVANCING.
DISPLAY SCREEN(5,49) WITH NO ADVANCING.
DISPLAY ' _ ' WITH NO ADVANCING.
DISPLAY SCREEN(5,49) WITH NO ADVANCING.

```

ACCOUNT-MAINTAIN-PROCESS.

```

CALL 'MTAN' USING SCREEN-TABLE
CLEAR-SCREEN RING-BELL
REVERSE-VIDEO EXIT-REVERSE.

```

ACCOUNT-UPDATE-PROCESS.

```

CALL 'UPDAT' USING SCREEN-TABLE
CLEAR-SCREEN RING-BELL
REVERSE-VIDEO EXIT-REVERSE.

```

REPORT-GENERATOR-PROCESS.

```

CALL 'REPOT' USING SCREEN-TABLE
CLEAR-SCREEN RING-BELL
REVERSE-VIDEO EXIT-REVERSE.

```

*-----
 IDENTIFICATION DIVISION.
 *-----

PROGRAM-ID.
 REPOT
 AUTHOR.
 CCW
 DATE-WRITTEN.
 23-MAR-1984

*-----
 ENVIRONMENT DIVISION.
 *-----

INPUT-OUTPUT SECTION.
 FILE-CONTROL.

 SELECT ENTERED-ACCOUNT-FILE,
 ASSIGN TO DSK,
 RECORDING MODE IS ASCII.

 SELECT PRE-ENTERED-ACCOUNT-FILE,
 ASSIGN TO DSK,
 RECORDING MODE IS ASCII.

 SELECT GENERAL-LEDGER-FILE
 ASSIGN TO DSK
 ORGANIZATION IS INDEXED
 ACCESS MODE IS DYNAMIC
 RECORD KEY IS G-ACCOUNT-NUMBER
 RECORDING MODE IS ASCII.

 SELECT PRINT-FILE
 ASSIGN TO LPT
 RECORDING MODE IS ASCII.

*-----
 DATA DIVISION.
 *-----

FILE SECTION.

FD GENERAL-LEDGER-FILE,
 BLOCK CONTAINS 128 RECORDS,
 VALUE OF ID IS 'GENFILINX'.

01 GENERAL-LEDGER-RECORD.
 05 G-ACCOUNT-NUMBER PIC 9(6).
 05 G-ACCOUNT-NAME PIC X(30).
 05 G-ACCOUNT-TYPE PIC X.
 05 G-CURRENT-TOTAL PIC S99999999V99.
 05 G-YEAR-TO-NOW-TOTAL PIC S99999999V99.
 05 G-PREVIOUS-YEAR-TOTAL PIC S99999999V99.

FD ENTERED-ACCOUNT-FILE,
 BLOCK CONTAINS 128 RECORDS,

LABEL RECORDS ARE STANDARD,
VALUE OF ID IS 'ACCONFIL'.

01 ENTERED-ACCOUNT-RECORD.
 05 ENTRY-NO PIC 999999.
 05 ACC-NUMBER.
 08 CATAGORY-NO PIC 9.
 08 SUBCATAGORY-NO PIC 99999.
 05 ACC-NAME PIC X(30) .
 05 SOURCE-CODE PIC 9.
 05 ACCOUNT-VALUE PIC S999999999V99.
 05 DATE-OF-ENTRY PIC XXXXXX.
 05 UPDATE-CODE PIC X.

FD PRE-ENTERED-ACCOUNT-FILE,
 BLOCK CONTAINS 128 RECORDS,
 LABEL RECORDS ARE STANDARD,
 VALUE OF ID IS 'PREVI FIL'.

01 PRE-ENTERED-ACCOUNT-RECORD.
 05 PRE-ENTRY-NO PIC 999999.
 05 PRE-ACC-NO.
 08 PRE-CATAGORY-NO PIC 9.
 08 PRE-SUBCATAGORY-NO PIC 99999.
 05 PRE-ACC-NAME PIC X(30) .
 05 PRE-SOURCE-CODE PIC 9.
 05 PRE-ACCOUNT-VALUE PIC S999999999V99.
 05 PRE-DATE-OF-ENTRY PIC XXXXXX.
 05 PRE-UPDATE-CODE PIC X.

FD PRINT-FILE,
 VALUE OF ID IS 'OUTPT OUT',
 LABEL RECORDS ARE STANDARD.

01 PRINT-RECORD PIC X(132).

*-----
 WORKING-STORAGE SECTION.
 *-----

01 LEDGER-TABLE.
 05 LEDGER-COUNTER PIC X(6)
 OCCURS 200 TIMES.

01 TRIAL-BALANCE-TABLE OCCURS 200 TIMES.
 05 TRIAL-TABLE-ACCOUNT PIC X(6).
 05 TRIAL-TABLE-VALUE PIC S999999999V99.

01 TOATL-AMOUNT-TABLE.
 05 TOTAL-AMOUNT PIC S999999999V99
 OCCURS 8 TIMES.

01 SCREEN-SYS-DATE.
 05 SCREEN-SYS-YEAR PIC X(2).
 05 FILLER PIC X(1) VALUE '/'.
 05 SCREEN-SYS-MONTH PIC X(2).

	05 FILLER	PIC X(1) VALUE '/'.
	05 SCREEN-SYS-DAY	PIC X(2).
01	SYS-DATE.	
	05 SYS-YEAR	PIC 9(2).
	05 SYS-MONTH	PIC 9(2).
	05 SYS-DAY	PIC 9(2).
01	TEST-VALUE-A.	
	05 FRONT-A	PIC X.
	05 BEHIND-A	PIC X(9).
01	TEST-VALUE-B.	
	05 FRONT-B	PIC XX.
	05 BEHIND-B	PIC X.
01	COMPANY-TITLE.	
	05 FILLER	PIC X(24).
	05 COMPANY-NAME	PIC X(14)
	VALUE '*****'	
	05 FILLER	PIC X(8).
	05 FILLER	PIC X(7)
	VALUE 'COMPANY'.	
	05 FILLER	PIC X(79).
01	CHART-OF-ACC-HEADING-LINE.	
	05 FILLER	PIC X(22).
	05 FILLER	PIC X(28)
	VALUE 'CHART OF ACCOUNT AS OF '.	
	05 CHART-SYSDATE	PIC X(8).
	05 FILLER	PIC X(13)
	VALUE ' PAGE '.	
	05 CHART-PAGE-NUMBER	PIC Z9.
	05 FILLER	PIC X(6)
	VALUE ' OF 5 '.	
	05 FILLER	PIC X(53).
01	CHART-BALANCE-LINE.	
	05 FILLER	PIC X(27).
	05 FILLER	PIC X(21)
	VALUE '*** BALANCE SHEET ***'.	
	05 FILLER	PIC X(84).
01	CHART-INCOME-LINE.	
	05 FILLER	PIC X(27).
	05 FILLER	PIC X(24)
	VALUE '*** INCOME STATEMENT ***'.	
	05 FILLER	PIC X(81).
01	CHART-IDENTIFY-LINE.	
	05 FILLER	PIC X(17)
	VALUE ' ACCT NO'.	
	05 FILLER	PIC X(15)
	VALUE ' ACCT'.	
	05 FILLER	PIC X(11)
	VALUE ' NAME'.	

	05 FILLER	PIC X(14)
	VALUE ' TYPE'.	
	05 FILLER	PIC X(22)
	VALUE ' AMOUNT'.	
	05 FILLER	PIC X(53).
01	CHART-ACCOUNT-BODY-LINE.	
	05 FILLER	PIC X(10).
	05 CHART-ACCOUNT-NUMBER	PIC X(6).
	05 FILLER	PIC X(4).
	05 CHART-ACCOUNT-NAME	PIC X(30).
	05 FILLER	PIC X(3).
	05 CHART-ACCOUNT-TYPE	PIC X(7).
	05 FILLER	PIC X(6).
	05 CHART-ACCOUNT-VALUE	PIC ZZ,ZZZ,ZZ9.99.
	05 CHART-ACCOUNT-VALUE-MARK	PIC X(2).
	05 FILLER	PIC X(51).
01	AUDIT-TRAIL-LINE.	
	05 FILLER	PIC X(10).
	05 AUDIT-ENTRY-NUMBER	PIC X(6).
	05 FILLER	PIC X(6).
	05 AUDIT-DATE-OF-ENTRY.	
	10 AUDIT-TRAIL-YEAR	PIC XX.
	10 FILLER	PIC X VALUE '/'.
	10 AUDIT-TRAIL-MONTH	PIC XX.
	10 FILLER	PIC X VALUE '/'.
	10 AUDIT-TRAIL-DAY	PIC XX.
	05 FILLER	PIC X(3).
	05 AUDIT-ACCOUNT-NUMBER	PIC X(6).
	05 FILLER	PIC X(6).
	05 AUDIT-SOURCE-CODE	PIC X(3).
	05 FILLER	PIC X(5).
	05 AUDIT-ACCOUNT-NAME	PIC X(30).
	05 FILLER	PIC X(3).
	05 AUDIT-ACCOUNT-DR	PIC ZZZ,ZZZ,ZZZ.ZZ.
	05 FILLER	PIC X(3).
	05 AUDIT-ACCOUNT-CR	PIC ZZZ,ZZZ,ZZZ.ZZ.
	05 FILLER	PIC X(13).
01	COMPANY-TITLE-2.	
	05 FILLER	PIC X(40).
	05 FILLER	PIC X(14)
	VALUE '*****'.	
	05 FILLER	PIC X(15)
	VALUE ' COMPANY'.	
	05 FILLER	PIC X(63).
01	LIST-ENTERED-ACC-HEADING.	
	05 FILLER	PIC X(30).
	05 FILLER	PIC X(11)
	VALUE 'JOURNAL'.	
	05 FILLER	PIC X(9)
	VALUE 'ENTRY'.	
	05 FILLER	PIC X(8)
	VALUE 'LIST'.	

05 FILLER		PIC X(7)
VALUE 'AS	'.	
05 FILLER		PIC X(6)
VALUE 'OF	'.	
05 LIST-ACC-ENTERED-HEADING-YEAR		PIC X(2).
05 FILLER		PIC X(1) VALUE '/'.
05 LIST-ACC-ENTERED-HEADING-MONTH		PIC X(2).
05 FILLER		PIC X(1) VALUE '/'.
05 LIST-ACC-ENTERED-HEADING-DAY		PIC X(2).
05 FILLER		PIC X(22).
05 FILLER		PIC X(5) VALUE 'PAGE '.
05 LIST-ACC-ENTERED-HEADING-PAGE		PIC ZZ.
05 FILLER		PIC X(4) VALUE ' OF '.
05 LIST-ACC-HEADING-TOTAL-PAGE		PIC ZZ.
05 FILLER		PIC X(18).
01 AUDIT-HEADING-1.		
05 FILLER		PIC X(104).
05 AUDIT-HEADING-YEAR		PIC X(2).
05 FILLER		PIC X(1) VALUE '/'.
05 AUDIT-HEADING-MONTH		PIC X(2).
05 FILLER		PIC X(1) VALUE '/'.
05 AUDIT-HEADING-DAY		PIC X(2).
01 AUDIT-HEADING-2.		
05 FILLER		PIC X(107).
05 FILLER		PIC X(2) VALUE 'TO'.
05 FILLER		PIC X(23).
01 AUDIT-HEADING-3.		
05 FILLER		PIC X(54).
05 FILLER		PIC X(15)
VALUE 'AUDIT	'.	
05 FILLER		PIC X(5)
VALUE 'TRAIL'.		
05 FILLER		PIC X(30).
05 FILLER		PIC X(5)
VALUE 'PAGE '.		
05 AUDIT-HEADING-PAGE		PIC ZZ9.
05 FILLER		PIC X(4)
VALUE ' OF '.		
05 AUDIT-HEADING-TOTAL-PAGE		PIC ZZ9.
05 FILLER		PIC X(13).
01 AUDIT-HEADING-4.		
05 FILLER		PIC X(17)
VALUE ' JOURNAL'.		
05 FILLER		PIC X(10)
VALUE ' ENTRY'.		
05 FILLER		PIC X(14)
VALUE ' ACCOUNT'.		
05 FILLER		PIC X(9)
VALUE ' SOURCE'.		
05 FILLER		PIC X(45).
05 FILLER		PIC X(6)
VALUE 'AMOUNT'.		

05 FILLER		PIC X(31).
01 AUDIT-HEADING-5.		
05 FILLER		PIC X(19)
VALUE ' ENTRY NO.'		
05 FILLER		PIC X(7)
VALUE ' DATE'		
05 FILLER		PIC X(13)
VALUE ' NO.'		
05 FILLER		PIC X(9)
VALUE ' CODE'		
05 FILLER		PIC X(19)
VALUE ' ACCOUNT'		
05 FILLER		PIC X(9)
VALUE ' NAME'		
05 FILLER		PIC X(23).
05 FILLER		PIC X(15)
VALUE 'DR CR'		
05 FILLER		PIC X(18).
01 AUDIT-HEADING-6.		
05 FILLER		PIC X(10).
05 FILLER		PIC X(23)
VALUE ' _____ ' .		
05 FILLER		PIC X(20)
VALUE ' _____ ' .		
05 FILLER		PIC X(30)
VALUE ' _____ ' .		
05 FILLER		PIC X(32)
VALUE ' _____ ' .		
05 FILLER		PIC X(17).
01 LEDGER-SHEET-HEADING.		
05 FILLER		PIC X(28).
05 FILLER		PIC X(14)
VALUE ' LEDGER ' .		
05 FILLER		PIC X(5)
VALUE ' SHEET ' .		
05 FILLER		PIC X(23).
05 FILLER		PIC X(5)
VALUE ' PAGE ' .		
05 LEDGER-HEADING-PAGE		PIC ZZ.
05 FILLER		PIC X(4)
VALUE ' OF ' .		
05 LEDGER-HEADING-TOTAL-PAGE		PIC ZZ.
05 FILLER		PIC X(49).
01 LEDGER-SHEET-TITLE-LINE.		
05 FILLER		PIC X(73).
05 LEDGER-SHEET-TITLE-DATE		PIC X(8).
05 FILLER		PIC X(51).
01 LEDGER-SHEET-LINE.		
05 FILLER		PIC X(11).
05 LEDGER-SHEET-ACCOUNT-NUMBER		PIC X(6).
05 FILLER		PIC X(5).

05	LEDGER-SHEET-SOURCE-CODE	PIC X(3).
05	FILLER	PIC X(5).
05	LEDGER-SHEET-ENTRY-NUMBER	PIC X(6).
05	FILLER	PIC X(5).
05	LEDGER-SHEET-DATE-OF-ENTRY.	
08	LEDGER-SHEET-YEAR	PIC XX.
08	FILLER	PIC X VALUE '/'.
08	LEDGER-SHEET-MONTH	PIC XX.
08	FILLER	PIC X VALUE '/'.
08	LEDGER-SHEET-DAY	PIC XX.
08	FILLER	PIC XXX.
05	LEDGER-SHEET-ACCOUNT-DR	PIC ZZZ,ZZZ,ZZZ.ZZ.
05	FILLER	PIC X(3).
05	LEDGER-SHEET-ACCOUNT-CR	PIC ZZZ,ZZZ,ZZZ.ZZ.
05	FILLER	PIC X(49).

01 LEDGER-SHEET-LINE-2.

05	FILLER	PIC X(21)
	VALUE ' ACCOUNT '.	
05	FILLER	PIC X(9)
	VALUE 'SOURCE '.	
05	FILLER	PIC X(7)
	VALUE 'JOURNAL'.	
05	FILLER	PIC X(27).
05	FILLER	PIC X(19)
	VALUE 'AMOUNT '.	

01 LEDGER-SHEET-LINE-3.

05	FILLER	PIC X(16)
	VALUE ' NO.'.	
05	FILLER	PIC X(14)
	VALUE ' CODE '.	
05	FILLER	PIC X(9)
	VALUE 'ENTRY NO.'.	
05	FILLER	PIC X(7)
	VALUE ' DATE'.	
05	FILLER	PIC X(12)
	VALUE ' DR'.	
05	FILLER	PIC X(17)
	VALUE ' CR'.	
05	FILLER	PIC X(38).

01 LEDGER-SHEET-LINE-4.

05	FILLER	PIC X(11).
05	FILLER	PIC X(10)
	VALUE ' _____ '.	
05	FILLER	PIC X(9)
	VALUE ' _____ '.	
05	FILLER	PIC X(11)
	VALUE ' _____ '.	
05	FILLER	PIC X(11)
	VALUE ' _____ '.	
05	FILLER	PIC X(28)
	VALUE ' _____ '.	
05	FILLER	PIC X(52).


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01 LEDGER-SHEET-LINE-5.
    05 FILLER PIC X(42).
    05 FILLER PIC X(14)
        VALUE 'NTE CHANGE '.
    05 LEDGER-SHEET-LINE5-BALANCE PIC ZZZ,ZZZ,ZZZ.ZZ.
    05 LEDGER-SHEET-LINE5-MARK PIC XX.
    05 FILLER PIC X(60).

01 LEDGER-SHEET-LINE-6.
    05 FILLER PIC X(20).
    05 FILLER PIC X(12)
        VALUE 'ACCOUNT NAME'.
    05 FILLER PIC X(100).

01 LEDGER-SHEET-LINE-7.
    05 FILLER PIC X(11).
    05 LEDGER-SHEET-LINE7-NAME PIC X(30).
    05 FILLER PIC X(91).

01 LEDGER-SHEET-LINE-8.
    05 FILLER PIC X(11).
    05 LEDGER-SHEET-LINE8-LABEL PIC X(16).
    05 FILLER PIC X(2).
    05 LEDGER-SHEET-LINE8-VALUE PIC ZZZ,ZZZ,ZZZ.ZZ.
    05 LEDGER-SHEET-LINE8-MARK PIC X(2).
    05 FILLER PIC X(87).

01 TRIAL-BALANCE-TITLE.
    05 FILLER PIC X(35).
    05 FILLER PIC X(14)
        VALUE 'XXXXXXXXXXXXX'.
    05 FILLER PIC X(11)
        VALUE 'COMPANY'.
    05 FILLER PIC X(18).
    05 TRIAL-BALANCE-TITLE-DATE PIC X(8).
    05 FILLER PIC X(46).

01 TRIAL-BALANCE-LINE-1.
    05 FILLER PIC X(36).
    05 FILLER PIC X(9)
        VALUE 'TRIAL '.
    05 FILLER PIC X(15)
        VALUE 'BALANCE SHEET'.
    05 FILLER PIC X(20)
        VALUE 'PAGE '.
    05 TRIAL-LINE1-PAGE-NUMBER PIC ZZ.
    05 FILLER PIC X(6)
        VALUE ' OF 4'.
    05 FILLER PIC X(44).

01 TRIAL-BALANCE-LINE-2.
    05 FILLER PIC X(17)
        VALUE 'ACCOUNT'.
    05 FILLER PIC X(19)
        VALUE 'ACCOUNT'.

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05 FILLER PIC X(31).
05 FILLER PIC X(6)
VALUE 'AMOUNT'.
05 FILLER PIC X(59).

01 TRIAL-BALANCE-LINE-3.
05 FILLER PIC X(15)
VALUE ' NO.'.
05 FILLER PIC X(18)
VALUE ' NAME'.
05 FILLER PIC X(26).
05 FILLER PIC X(15)
VALUE 'DR CR'.
05 FILLER PIC X(58).

01 TRIAL-BALANCE-LINE-4.
05 FILLER PIC X(10).
05 FILLER PIC X(11)
VALUE ' _____ '.
05 FILLER PIC X(30)
VALUE ' _____ '
05 FILLER PIC X(4).
05 FILLER PIC X(30)
VALUE ' _____ '
05 FILLER PIC X(47).

01 TRIAL-BALANCE-LINE-5.
05 FILLER PIC X(10).
05 TRIAL-LINE5-ACC-NUMBER PIC X(6).
05 FILLER PIC X(4).
05 TRIAL-LINE5-ACC-NAME PIC X(30).
05 FILLER PIC X(4).
05 TRIAL-LINE5-ACCOUNT-DR PIC X(14).
05 FILLER PIC X(4).
05 TRIAL-LINE5-ACCOUNT-CR PIC X(14).
05 FILLER PIC X(46).

01 TRIAL-BALANCE-LINE-6.
05 FILLER PIC X(16).
05 FILLER PIC X(38)
VALUE '====='.
05 FILLER PIC X(37)
VALUE '====='.
05 FILLER PIC X(41).

01 TRIAL-BALANCE-LINE-7.
05 FILLER PIC X(45).
05 FILLER PIC X(9)
VALUE 'TOTAL '.
05 TRIAL-LINE7-DR-VALUE PIC ZZZ,ZZZ,ZZZ.ZZ.
05 FILLER PIC X(3)
VALUE ' = '.
05 TRIAL-LINE7-CR-VALUE PIC ZZZ,ZZZ,ZZZ.ZZ.
05 FILLER PIC X(47).

01 BALANCE-SHEET-LINE.

```

05	FILLER	PIC X(5).
05	BALANCE-SHEET-ACC-NAME	PIC X(48).
05	FILLER	PIC X(4).
05	BALANCE-DOLLAR-SIGN-1	PIC X.
05	FILLER	PIC X(2).
05	BALANCE-SHEET-MARK-1	PIC X.
05	BALANCE-SHEET-ACC-VALUE	PIC ZZZ,ZZZ,ZZ9.99.
05	BALANCE-SHEET-MARK-2	PIC X.
05	FILLER	PIC X(5).
05	BALANCE-DOLLAR-SIGN-2	PIC X.
05	FILLER	PIC X(2).
05	BALANCE-SHEET-MARK-3	PIC X.
05	BALANCE-SHEET-TOTAL	PIC ZZZ,ZZZ,ZZ9.99.
05	BALANCE-SHEET-MARK-4	PIC X.
05	FILLER	PIC X(32).
01	BALANCE-SHEET-HEADING-1.	
05	FILLER	PIC X(38).
05	FILLER	PIC X(13)
	VALUE 'BALANCE SHEET'.	
05	FILLER	PIC X(27)
	VALUE ' PAGE '.	
05	BALANCE-SHEET-PAGE-NUMBER	PIC Z9.
05	FILLER	PIC X(6)
	VALUE ' OF 3 '.	
05	FILLER	PIC X(31).
01	BALANCE-SHEET-HEADING-2.	
05	FILLER	PIC X(40).
05	FILLER	PIC X(8)
	VALUE 'AS OF '.	
05	BALANCE-SHEET-HEADING-DATE	PIC X(8).
05	FILLER	PIC X(76).
01	INCOME-STATEMENT-HEADING-2.	
05	FILLER	PIC X(46).
05	FILLER	PIC X(8)
	VALUE 'AS OF '.	
05	INCOME-STATEMENT-DATE	PIC X(8).
05	FILLER	PIC X(70).
01	INCOME-STATEMENT-HEADING-1.	
05	FILLER	PIC X(38).
05	FILLER	PIC X(16)
	VALUE 'INCOME STATEMENT'.	
05	FILLER	PIC X(27)
	VALUE ' PAGE '.	
05	INCOME-STATEMENT-PAGE-NUMBER	PIC Z9.
05	FILLER	PIC X(6)
	VALUE ' OF 3 '.	
05	FILLER	PIC X(28).
01	TRIAL-LINE5-ACCOUNT-TEMPLE	PIC ZZZ,ZZZ,ZZ9.99.
01	LINE-NUMBER	PIC 9(2).

01 TOTAL-PAGE-NUMBER	PIC 99.
01 PAGE-NUMBER	PIC 9(2).
01 REPORT-TYPE	PIC X.
01 TABLE-INDEX	PIC 999.
01 INDEX-A	PIC 999.
01 INDENT-1-OUTPUT.	
05 INDENT-1	PIC X(30).
05 FILLER	PIC X(18).
01 INDENT-2-OUTPUT.	
05 FILLER	PIC X(3).
05 INDENT-2	PIC X(30).
05 FILLER	PIC X(15).
01 INDENT-3-OUTPUT.	
05 FILLER	PIC X(6).
05 INDENT-3	PIC X(30).
05 FILLER	PIC X(12).
01 INDENT-4-OUTPUT.	
05 FILLER	PIC X(9).
05 INDENT-4	PIC X(30).
05 FILLER	PIC X(9).
01 INDENT-5-OUTPUT.	
05 FILLER	PIC X(12).
05 INDENT-5	PIC X(30).
05 FILLER	PIC X(6).
01 INDENT-6-OUTPUT.	
05 FILLER	PIC X(15).
05 INDENT-6	PIC X(30).
05 FILLER	PIC X(3).
01 INDENT-7-OUTPUT.	
05 FILLER	PIC X(18).
05 INDENT-7	PIC X(30).
01 INDENT-LEVEL-INDEX	PIC 9.
01 TOTAL-LEVEL-INDEX	PIC 9.
01 PRE-ACC-TYPE	PIC X(6).
01 REPEAT-COUNTER	PIC 9.
01 CHECK-DATA	PIC 99.
01 NET-CHANGE	PIC S99999999V99.

APPENDIX C
01 CR-TOTAL

PIC S999999999V99.

01 DR-TOTAL

PIC S999999999V99.

01 INPUT-DATE.

05 I-YEAR PIC 99.
05 I-MONTH PIC 99.
05 I-DAY PIC 99.

01 END-DATE.

05 E-YEAR PIC 99.
05 E-MONTH PIC 99.
05 E-DAY PIC 99.

01 BEGIN-DATE.

05 B-YEAR PIC 99.
05 B-MONTH PIC 99.
05 B-DAY PIC 99.

77 EOF-PRE-FILE-OR-NOT
88 EOF-PRE-FILE

PIC X VALUE 'N'.
VALUE 'Y'.

77 EOF-ENTERED-ACC-FILE-OR-NOT
88 EOF-ENTERED-ACC-FILE

PIC X VALUE 'N'.
VALUE 'Y'.

77 ACCOUNT-EXIST-OR-NOT
88 ACCOUNT-EXIST

PIC X VALUE 'N'.
VALUE 'Y'.

77 OVER-END-DATE-OR-NOT
88 OVER-END-DATE

PIC X VALUE 'N'.
VALUE 'Y'.

77 FIND-BEGIN-DATE-OK
88 FIND-BEGIN-DATE

PIC X VALUE 'N'.
VALUE 'Y'.

77 EXIT-GENERATE-REPORT-OR-NOT
88 EXIT-GENERATE-REPORT

PIC X VALUE 'N'.
VALUE 'Y'.

77 BUILD-TABLE-OK-OR-NOT
88 BUILD-TABLE-OK

PIC X VALUE 'N'.
VALUE 'Y'.

77 TAKE-TYPE-OK-OR-NOT
88 TAKE-TYPE-OK

PIC X VALUE 'N'.
VALUE 'Y'.

77 EOF-G-L-FILE-OR-NOT
88 EOF-G-L-FILE

PIC X VALUE 'N'.
VALUE 'Y'.

LINKAGE SECTION.

01 SCREEN-TABLE.

05 SCREEN-ROWS
10 SCREEN

OCCURS 24 TIMES.
PIC X(4)
USAGE IS DISPLAY-7
OCCURS 80 TIMES.

01 REVERSE-VIDEO

PIC XX DISPLAY-7.

APPENDIX C
01 EXIT-REVERSE

Page C-20
PIC XX DISPLAY-7.

01 CLEAR-SCREEN

PIC XX DISPLAY-7.

01 RING-BELL

PIC X DISPLAY-7.

*-----
PROCEDURE DIVISION USING SCREEN-TABLE
CLEAR-SCREEN RING-BELL
REVERSE-VIDEO EXIT-REVERSE.
*-----

MAIN.

ACCEPT SYS-DATE FROM DATE.
MOVE SYS-YEAR TO SCREEN-SYS-YEAR.
MOVE SYS-MONTH TO SCREEN-SYS-MONTH.
MOVE SYS-DAY TO SCREEN-SYS-DAY.
MOVE 'N' TO EXIT-GENERATE-REPORT-OR-NOT.
PERFORM SELECT-REPORT-TYPE-SCREEN.
PERFORM REPORT-GENERATOR-PROCESS UNTIL
EXIT-GENERATE-REPORT.

EXIT PROGRAM.

REPORT-GENERATOR-PROCESS.

MOVE 'N' TO TAKE-TYPE-OK-OR-NOT.
PERFORM TAKE-TYPE-OF-REPORT UNTIL TAKE-TYPE-OK.
IF REPORT-TYPE = '1'
PERFORM PRINT-CHART-OF-ACCOUNT-SCREEN
PERFORM PRINT-CHART-OF-ACCOUNT
ELSE IF REPORT-TYPE = '2'
PERFORM PRINT-LIST-ACC-ENTERED-SCREEN
PERFORM PRINT-LIST-OF-ACC-ENTERED
ELSE IF REPORT-TYPE = '3'
PERFORM PRINT-AUDIT-TRAIL-SCREEN
PERFORM PRINT-AUDIT-TRAIL
ELSE IF REPORT-TYPE = '4'
PERFORM PRINT-LEDGER-SHEET-SCREEN
PERFORM PRINT-LEDGER-SHEET
ELSE IF REPORT-TYPE = '5'
PERFORM PRINT-TRIAL-BALANCE-SCREEN
PERFORM PRINT-TRIAL-BALANCE
ELSE IF REPORT-TYPE = '6'
PERFORM PRINT-INCOME-STATEMENT-SCREEN
PERFORM PRINT-INCOME-STATEMENT
ELSE IF REPORT-TYPE = '7'
PERFORM PRINT-BALANCE-SHEET-SCREEN
PERFORM PRINT-BALANCE-SHEET
ELSE IF REPORT-TYPE = '*'
MOVE 'Y' TO EXIT-GENERATE-REPORT-OR-NOT.
DISPLAY SCREEN(22,7) WITH NO ADVANCING.
DISPLAY '

WITH NO ADVANCING.

SELECT-REPORT-TYPE-SCREEN.

DISPLAY CLEAR-SCREEN WITH NO ADVANCING.
DISPLAY REVERSE-VIDEO WITH NO ADVANCING.

```

DISPLAY SCREEN(1,28) WITH NO ADVANCING.
DISPLAY 'SCREEN - 1.3'
                                WITH NO ADVANCING.
DISPLAY SCREEN(2,21) WITH NO ADVANCING.
DISPLAY 'REPORT GENERATOR SELECTION'
                                WITH NO ADVANCING.
DISPLAY EXIT-REVERSE WITH NO ADVANCING.
DISPLAY SCREEN (4,17) WITH NO ADVANCING.
DISPLAY
'SELECT ONE OF THE FOLLOWING TYPE TO PROCESS'
                                WITH NO ADVANCING.
DISPLAY SCREEN (5,31) WITH NO ADVANCING.
DISPLAY 'ENTER SELECTION: _'
                                WITH NO ADVANCING.
DISPLAY SCREEN(7,16) WITH NO ADVANCING.
DISPLAY
'===== '
                                WITH NO ADVANCING.
DISPLAY SCREEN(9,16) WITH NO ADVANCING.
DISPLAY
' * : FOR EXIT ACCOUNT UPDATE PROCESS '
                                WITH NO ADVANCING.
DISPLAY SCREEN(10,16) WITH NO ADVANCING.
DISPLAY ' 1 : PRINT CHART OF ACCOUNT '
                                WITH NO ADVANCING.
DISPLAY SCREEN(11,16) WITH NO ADVANCING.
DISPLAY ' 2 : PRINT LIST OF ACCOUNT ENTERED'
                                WITH NO ADVANCING.
DISPLAY SCREEN(12,16) WITH NO ADVANCING.
DISPLAY ' 3 : PRINT AUDIT TRAIL '
                                WITH NO ADVANCING.
DISPLAY SCREEN(13,16) WITH NO ADVANCING.
DISPLAY ' 4 : PRINT LEDGER SHEET '
                                WITH NO ADVANCING.
DISPLAY SCREEN(14,16) WITH NO ADVANCING.
DISPLAY ' 5 : PRINT TRIAL BALANCE '
                                WITH NO ADVANCING.
DISPLAY SCREEN(15,16) WITH NO ADVANCING.
DISPLAY ' 6 : PRINT INCOME STATEMENT '
                                WITH NO ADVANCING.
DISPLAY SCREEN(16,16) WITH NO ADVANCING.
DISPLAY ' 7 : PRINT BALANCE SHEET '
                                WITH NO ADVANCING.
DISPLAY SCREEN(18,16) WITH NO ADVANCING.
DISPLAY '===== '
                                WITH NO ADVANCING.

```

TAKE-TYPE-OF-REPORT.

```

DISPLAY RING-BELL WITH NO ADVANCING.
DISPLAY SCREEN(5,49) WITH NO ADVANCING.
DISPLAY ' _ ' WITH NO ADVANCING.
DISPLAY SCREEN(5,49) WITH NO ADVANCING.
ACCEPT TEST-VALUE-A.
IF BEHIND-A NOT EQUAL SPACES PERFORM ERROR-HANDLE

```

```

ELSE MOVE FRONT-A TO REPORT-TYPE.
IF REPORT-TYPE EQUAL '1' OR EQUAL '2' OR
EQUAL '3' OR EQUAL '4' OR
EQUAL '5' OR EQUAL '6' OR
EQUAL '7' OR EQUAL '*'
MOVE 'Y' TO TAKE-TYPE-OK-OR-NOT
ELSE
PERFORM ERROR-HANDLE.
DISPLAY SCREEN(22,7) WITH NO ADVANCING.
DISPLAY '
WITH NO ADVANCING.
DISPLAY '
WITH NO ADVANCING.

```

ERROR-HANDLE.

```

DISPLAY SCREEN(22,7) WITH NO ADVANCING.
DISPLAY REVERSE-VIDEO WITH NO ADVANCING.
DISPLAY 'ERROR MESSAGE:.' WITH NO ADVANCING.
DISPLAY EXIT-REVERSE WITH NO ADVANCING.
DISPLAY 'INVALID RESPONSE . PLEASE REENTER
WITH NO ADVANCING.
DISPLAY RING-BELL WITH NO ADVANCING.
DISPLAY SCREEN(5,49) WITH NO ADVANCING.
DISPLAY ' _ ' WITH NO ADVANCING.
DISPLAY SCREEN(5,49) WITH NO ADVANCING.
PERFORM TAKE-TYPE-OF-REPORT.

```

PRINT-COMPANY-TITLE.

```

WRITE PRINT-RECORD FROM COMPANY-TITLE
AFTER ADVANCING 4 LINES.

```

PRINT-CHART-OF-ACCOUNT-SCREEN.

```

DISPLAY REVERSE-VIDEO WITH NO ADVANCING.
DISPLAY SCREEN(22,17) WITH NO ADVANCING.
DISPLAY 'PRINT CHART OF ACCOUNT PROCESSING'
WITH NO ADVANCING.
DISPLAY EXIT-REVERSE WITH NO ADVANCING.

```

PRINT-CHART-OF-ACCOUNT.

```

MOVE SCREEN-SYS-DATE TO CHART-SYS-DATE.
MOVE 'N' TO EOF-G-L-FILE-OR-NOT.
OPEN INPUT GENERAL-LEDGER-FILE
OUTPUT PRINT-FILE.
MOVE 1 TO PAGE-NUMBER.
MOVE 0 TO LINE-NUMBER.
PERFORM PRINT-COMPANY-TITLE.
ADD 4 TO LINE-NUMBER.
PERFORM CHART-OF-ACCOUNT-BODY UNTIL EOF-G-L-FILE.
CLOSE GENERAL-LEDGER-FILE
PRINT-FILE.

```

CHART-OF-ACCOUNT-BODY.

```

IF PAGE-NUMBER EQUAL 1 OR LINE-NUMBER
EQUAL 0 PERFORM CHART-OF-ACCOUNT-HEADING.
ADD 9 TO LINE-NUMBER.

```



```

READ GENERAL-LEDGER-FILE NEXT AT
  END MOVE 'Y' TO EOF-G-L-FILE-OR-NOT.
PERFORM CHART-OF-ACCOUNT-LINE
  UNTIL LINE-NUMBER GREATER THAN 50.
ADD 1 TO PAGE-NUMBER.
MOVE 0 TO LINE-NUMBER.

```

CHART-OF-ACCOUNT-HEADING.

```

MOVE PAGE-NUMBER TO CHART-PAGE-NUMBER.
IF PAGE-NUMBER GREATER THAN 1
  WRITE PRINT-RECORD FROM SPACES
    AFTER ADVANCING PAGE.
WRITE PRINT-RECORD FROM CHART-OF-ACC-HEADING-LINE
  AFTER ADVANCING 3 LINES.
IF G-ACCOUNT-NUMBER LESS THAN 300000
  WRITE PRINT-RECORD FROM CHART-BALANCE-LINE
    AFTER ADVANCING 5 LINES
ELSE
  WRITE PRINT-RECORD FROM CHART-INCOME-LINE
    AFTER ADVANCING 5 LINES.
WRITE PRINT-RECORD FROM CHART-IDENTIFY-LINE
  AFTER ADVANCING 3 LINES.
WRITE PRINT-RECORD FROM SPACES.

```

CHART-OF-ACCOUNT-LINE.

```

IF CHART-ACCOUNT-NUMBER LESS THAN 300000 AND
  G-ACCOUNT-NUMBER NOT LESS THAN 300000
WRITE PRINT-RECORD FROM CHART-INCOME-LINE
  AFTER ADVANCING 2 LINES
WRITE PRINT-RECORD FROM SPACES
ADD 3 TO LINE-NUMBER.
MOVE G-ACCOUNT-NAME TO CHART-ACCOUNT-NAME.
MOVE G-ACCOUNT-NUMBER TO CHART-ACCOUNT-NUMBER.
IF G-ACCOUNT-TYPE EQUAL 0
MOVE 'REGULAR' TO CHART-ACCOUNT-TYPE
ELSE IF G-ACCOUNT-TYPE EQUAL 1
  MOVE ' TITLE' TO CHART-ACCOUNT-TYPE
ELSE IF G-ACCOUNT-TYPE EQUAL 2
  MOVE ' TOTAL' TO CHART-ACCOUNT-TYPE
ELSE IF G-ACCOUNT-TYPE EQUAL 3
  MOVE 'HEADING' TO CHART-ACCOUNT-TYPE.
IF G-CURRENT-TOTAL GREATER THAN 0
  MOVE 'CR' TO CHART-ACCOUNT-VALUE-MARK
ELSE MOVE 'DR' TO CHART-ACCOUNT-VALUE-MARK
  MULTIPLY -1 BY G-CURRENT-TOTAL.
MOVE G-CURRENT-TOTAL TO CHART-ACCOUNT-VALUE.
WRITE PRINT-RECORD FROM CHART-ACCOUNT-BODY-LINE.
ADD 1 TO LINE-NUMBER.
READ GENERAL-LEDGER-FILE NEXT AT END
  MOVE 'Y' TO EOF-G-L-FILE-OR-NOT
  MOVE 51 TO LINE-NUMBER.

```

PRINT-LIST-ACC-ENTERED-SCREEN.

```

DISPLAY REVERSE-VIDEO WITH NO ADVANCING.
DISPLAY SCREEN(22,17) WITH NO ADVANCING.

```

DISPLAY 'PRINT LIST OF ACCOUNT ENTERED PROCESSING'
WITH NO ADVANCING.
DISPLAY EXIT-REVERSE WITH NO ADVANCING.

PRINT-LIST-OF-ACC-ENTERED.

MOVE 0 TO REPEAT-COUNTER.
MOVE 0 TO TOTAL-PAGE-NUMBER.
PERFORM LIST-ENTERED-ACCOUNT-PROCESS
UNTIL REPEAT-COUNTER EQUAL 2.
ACCEPT SYS-DATE FROM DATE.

LIST-ENTERED-ACCOUNT-PROCESS.

OPEN INPUT ENTERED-ACCOUNT-FILE.
IF REPEAT-COUNTER EQUAL 1
OPEN OUTPUT PRINT-FILE.
MOVE 1 TO PAGE-NUMBER.
MOVE 0 TO LINE-NUMBER.
IF REPEAT-COUNTER EQUAL 1
WRITE PRINT-RECORD FROM COMPANY-TITLE-2
AFTER ADVANCING 4 LINES.
ADD 4 TO LINE-NUMBER.
MOVE 'N' TO EOF-ENTERED-ACC-FILE-OR-NOT.
READ ENTERED-ACCOUNT-FILE AT END MOVE 'Y'
TO EOF-ENTERED-ACC-FILE-OR-NOT.
PERFORM LIST-ENTERED-ACC-BODY
UNTIL EOF-ENTERED-ACC-FILE.
CLOSE ENTERED-ACCOUNT-FILE.
IF REPEAT-COUNTER EQUAL 1
CLOSE PRINT-FILE.
ADD 1 TO REPEAT-COUNTER.
SUBTRACT 1 FROM PAGE-NUMBER GIVING PAGE-NUMBER.
MOVE PAGE-NUMBER TO TOTAL-PAGE-NUMBER.

LIST-ENTERED-ACC-BODY.

IF REPEAT-COUNTER EQUAL 1
PERFORM PRINT-LIST-ENTERED-ACC-HEADING.
ADD 10 TO LINE-NUMBER.
PERFORM LIST-ENTERED-ACC-LINE UNTIL
LINE-NUMBER EQUAL 50 OR EOF-ENTERED-ACC-FILE.
MOVE 0 TO LINE-NUMBER.
ADD 1 TO PAGE-NUMBER.

LIST-ENTERED-ACC-LINE.

MOVE ENTRY-NO TO AUDIT-ENTRY-NUMBER.
MOVE ACC-NAME TO AUDIT-ACCOUNT-NAME.
MOVE ACC-NUMBER TO AUDIT-ACCOUNT-NUMBER.
MOVE PRE-DATE-OF-ENTRY TO SYS-DATE.
MOVE SYS-YEAR TO AUDIT-TRAIL-YEAR.
MOVE SYS-MONTH TO AUDIT-TRAIL-MONTH.
MOVE SYS-DAY TO AUDIT-TRAIL-DAY.
IF SOURCE-CODE EQUAL 1 MOVE 'A/R' TO
AUDIT-SOURCE-CODE
ELSE IF SOURCE-CODE EQUAL 2 MOVE 'A/P' TO
AUDIT-SOURCE-CODE
ELSE IF SOURCE-CODE EQUAL 3 MOVE 'P/R' TO
AUDIT-SOURCE-CODE

```

ELSE IF SOURCE-CODE EQUAL 4 MOVE 'ADJ' TO
      AUDIT-SOURCE-CODE.
MOVE SPACES TO AUDIT-ACCOUNT-CR.
MOVE SPACES TO AUDIT-ACCOUNT-DR.
IF ACCOUNT-VALUE GREATER THAN 0
      MOVE ACCOUNT-VALUE TO AUDIT-ACCOUNT-CR
ELSE
      MULTIPLY -1 BY ACCOUNT-VALUE
      MOVE ACCOUNT-VALUE TO AUDIT-ACCOUNT-DR.
IF DATE-OF-ENTRY EQUAL SYS-DATE
      ADD 1 TO LINE-NUMBER.
IF DATE-OF-ENTRY EQUAL SYS-DATE AND
      REPEAT-COUNTER EQUAL 1
      WRITE PRINT-RECORD FROM AUDIT-TRAIL-LINE.
READ ENTERED-ACCOUNT-FILE AT END
      MOVE 'Y' TO EOF-ENTERED-ACC-FILE-OR-NOT.

```

PRINT-LIST-ENTERED-ACC-HEADING.

```

MOVE SYS-YEAR TO LIST-ACC-ENTERED-HEADING-YEAR.
MOVE SYS-MONTH TO LIST-ACC-ENTERED-HEADING-MONTH.
MOVE SYS-DAY TO LIST-ACC-ENTERED-HEADING-DAY.
MOVE PAGE-NUMBER TO
      LIST-ACC-ENTERED-HEADING-PAGE.
MOVE TOTAL-PAGE-NUMBER TO
      LIST-ACC-HEADING-TOTAL-PAGE.
IF PAGE-NUMBER GREATER THAN 1 WRITE
      PRINT-RECORD FROM SPACES AFTER ADVANCING PAGE.
WRITE PRINT-RECORD FROM LIST-ENTERED-ACC-HEADING
      AFTER ADVANCING 2 LINES.
WRITE PRINT-RECORD FROM AUDIT-HEADING-4
      AFTER ADVANCING 4 LINES.
WRITE PRINT-RECORD FROM AUDIT-HEADING-5.
WRITE PRINT-RECORD FROM AUDIT-HEADING-6
      BEFORE ADVANCING 3 LINES.

```

PRINT-AUDIT-TRAIL-SCREEN.

```

DISPLAY REVERSE-VIDEO WITH NO ADVANCING.
DISPLAY SCREEN(22,17) WITH NO ADVANCING.
DISPLAY 'PRINT AUDIT TRAIL PROCESSING'
      WITH NO ADVANCING.
DISPLAY EXIT-REVERSE WITH NO ADVANCING.

```

PRINT-AUDIT-TRAIL.

```

PERFORM GET-BEGIN-END-DATE.
MOVE 0 TO REPEAT-COUNTER.
MOVE 0 TO TOTAL-PAGE-NUMBER.
PERFORM PRINT-AUDIT-TRAIL-PROCESS UNTIL
      REPEAT-COUNTER EQUAL 2.
ACCEPT SYS-DATE FROM DATE.

```

PRINT-AUDIT-TRAIL-PROCESS.

```

OPEN INPUT PRE-ENTERED-ACCOUNT-FILE.
IF REPEAT-COUNTER EQUAL 1
OPEN OUTPUT PRINT-FILE.
MOVE 1 TO PAGE-NUMBER.
MOVE 0 TO LINE-NUMBER.

```

```

IF REPEAT-COUNTER EQUAL 1 PERFORM
    PRINT-AUDIT-TRAIL-TITLE.
ADD 7 TO LINE-NUMBER.
MOVE 'N' TO EOF-PRE-FILE-OR-NOT.
MOVE 'N' TO FIND-BEGIN-DATE-OK.
MOVE 'N' TO OVER-END-DATE-OR-NOT.
READ PRE-ENTERED-ACCOUNT-FILE AT END
    MOVE 'Y' TO EOF-PRE-FILE-OR-NOT.
PERFORM GO-TO-BEGIN-DATE UNTIL FIND-BEGIN-DATE
    OR EOF-PRE-FILE.
PERFORM PRINT-AUDIT-TRAIL-BODY UNTIL
    EOF-PRE-FILE OR OVER-END-DATE.
CLOSE PRE-ENTERED-ACCOUNT-FILE.
IF REPEAT-COUNTER EQUAL 1
    CLOSE PRINT-FILE.
ADD 1 TO REPEAT-COUNTER.
SUBTRACT 1 FROM PAGE-NUMBER GIVING PAGE-NUMBER.
MOVE PAGE-NUMBER TO TOTAL-PAGE-NUMBER.

```

PRINT-AUDIT-TRAIL-BODY.

```

IF REPEAT-COUNTER EQUAL 1
PERFORM PRINT-AUDIT-TRAIL-HEADING.
ADD 10 TO LINE-NUMBER.
PERFORM PRINT-AUDIT-TRAIL-LINE UNTIL OVER-END-DATE
    OR LINE-NUMBER EQUAL 50 OR EOF-PRE-FILE.
MOVE 0 TO LINE-NUMBER.
ADD 1 TO PAGE-NUMBER.

```

PRINT-AUDIT-TRAIL-LINE.

```

MOVE PRE-ENTRY-NO TO AUDIT-ENTRY-NUMBER.
MOVE PRE-ACC-NAME TO AUDIT-ACCOUNT-NAME.
MOVE PRE-ACC-NO TO AUDIT-ACCOUNT-NUMBER.
MOVE PRE-DATE-OF-ENTRY TO SYS-DATE.
MOVE SYS-YEAR TO AUDIT-TRAIL-YEAR.
MOVE SYS-MONTH TO AUDIT-TRAIL-MONTH.
MOVE SYS-DAY TO AUDIT-TRAIL-DAY.
IF PRE-SOURCE-CODE EQUAL 1 MOVE 'A/R' TO
    AUDIT-SOURCE-CODE
ELSE IF PRE-SOURCE-CODE EQUAL 2 MOVE 'A/P' TO
    AUDIT-SOURCE-CODE
ELSE IF PRE-SOURCE-CODE EQUAL 3 MOVE 'P/R' TO
    AUDIT-SOURCE-CODE
ELSE IF PRE-SOURCE-CODE EQUAL 4 MOVE 'ADJ' TO
    AUDIT-SOURCE-CODE.
MOVE SPACES TO AUDIT-ACCOUNT-CR.
MOVE SPACES TO AUDIT-ACCOUNT-DR.
IF PRE-ACCOUNT-VALUE GREATER THAN 0
    MOVE PRE-ACCOUNT-VALUE TO AUDIT-ACCOUNT-CR
ELSE
    MULTIPLY -1 BY PRE-ACCOUNT-VALUE
    MOVE PRE-ACCOUNT-VALUE TO AUDIT-ACCOUNT-DR.
IF REPEAT-COUNTER EQUAL 1
WRITE PRINT-RECORD FROM AUDIT-TRAIL-LINE.
ADD 1 TO LINE-NUMBER.
READ PRE-ENTERED-ACCOUNT-FILE AT END
    MOVE 'Y' TO EOF-PRE-FILE-OR-NOT.

```

```

IF PRE-DATE-OF-ENTRY GREATER THAN END-DATE
  MOVE 'Y' TO OVER-END-DATE-OR-NOT.

```

```

GET-BEGIN-END-DATE.

```

```

  PERFORM GET-BEGIN-DATE.
  PERFORM GET-END-DATE.
  IF BEGIN-DATE GREATER THAN END-DATE
  DISPLAY SCREEN(24,1) WITH NO ADVANCING
  DISPLAY
  'THE END DATE GREATER THAN BEGIN DATE REENTER'
    WITH NO ADVANCING
    PERFORM GET-BEGIN-END-DATE.
  DISPLAY SCREEN(23,17) WITH NO ADVANCING.
  DISPLAY '
    WITH NO ADVANCING.

```

```

GET-BEGIN-DATE.

```

```

  DISPLAY SCREEN(23,17) WITH NO ADVANCING.
  DISPLAY
  'ENTER BEGIN DATE: YEAR ___ MONTH ___ DATE ___'
    WITH NO ADVANCING.

  PERFORM GET-YEAR.
  PERFORM GET-MONTH.
  PERFORM GET-DAY.
  MOVE INPUT-DATE TO BEGIN-DATE.

```

```

GET-END-DATE.

```

```

  DISPLAY SCREEN(23,17) WITH NO ADVANCING.
  DISPLAY
  'ENTER END DATE: YEAR ___ MONTH ___ DATE ___'
    WITH NO ADVANCING.

  PERFORM GET-YEAR.
  PERFORM GET-MONTH.
  PERFORM GET-DAY.
  MOVE INPUT-DATE TO END-DATE.

```

```

GET-YEAR.

```

```

  MOVE SPACES TO TEST-VALUE-B.
  DISPLAY SCREEN(23,39) WITH NO ADVANCING.
  DISPLAY ' ___ ' WITH NO ADVANCING.
  DISPLAY SCREEN(24,17) WITH NO ADVANCING.
  DISPLAY 'ENTER LAST TWO DIGITAL
    WITH NO ADVANCING.
  DISPLAY SCREEN(23,40) WITH NO ADVANCING.
  ACCEPT TEST-VALUE-B.
  IF BEHIND-B NOT EQUAL SPACES
    DISPLAY SCREEN(24,17) WITH NO ADVANCING
    DISPLAY 'ENTER TOO LONG
      WITH NO ADVANCING

  PERFORM GET-YEAR.
  MOVE FRONT-B TO I-YEAR.
  SUBTRACT SYS-YEAR FROM I-YEAR GIVING CHECK-DATA.
  IF CHECK-DATA LESS THAN 2 AND CHECK-DATA
    GREATER THAN -1 MOVE FRONT-B TO I-YEAR
  ELSE

```

```

DISPLAY SCREEN(24,17) WITH NO ADVANCING
DISPLAY 'YEAR NOT WITHIN PROPER RANGE
                                WITH NO ADVANCING
PERFORM GET-YEAR.
DISPLAY SCREEN(24,17)WITH NO ADVANCING.
DISPLAY '
                                WITH NO ADVANCING.

```

GET-MONTH.

```

MOVE SPACES TO TEST-VALUE-B.
DISPLAY SCREEN(23,48) WITH NO ADVANCING.
DISPLAY ' _ ' WITH NO ADVANCING.
DISPLAY SCREEN(23,49)WITH NO ADVANCING.
ACCEPT TEST-VALUE-B.
IF BEHIND-B NOT EQUAL SPACES
  DISPLAY SCREEN(24,17) WITH NO ADVANCING
  DISPLAY 'ENTER TOO LONG
                                WITH NO ADVANCING
PERFORM GET-MONTH.
IF FRONT-B NOT GREATER THAN 13 AND FRONT-B GREATER
  THAN 0 MOVE FRONT-B TO I-MONTH
ELSE
  DISPLAY SCREEN(24,17) WITH NO ADVANCING
  DISPLAY 'MONTH NOT WITH PROPER RANGE'
                                WITH NO ADVANCING
PERFORM GET-MONTH.
DISPLAY SCREEN(24,17)WITH NO ADVANCING.
DISPLAY '
                                WITH NO ADVANCING.

```

GET-DAY.

```

MOVE SPACES TO TEST-VALUE-B.
DISPLAY SCREEN(23,56) WITH NO ADVANCING.
DISPLAY ' _ ' WITH NO ADVANCING.
DISPLAY SCREEN(23,57)WITH NO ADVANCING.
ACCEPT TEST-VALUE-B.
IF BEHIND-B NOT EQUAL SPACES
  DISPLAY SCREEN(24,17) WITH NO ADVANCING
  DISPLAY 'ENTER TOO LONG
                                WITH NO ADVANCING
PERFORM GET-DAY.
IF FRONT-B LESS THAN 32 AND FRONT-B GREATER THAN 0
  MOVE FRONT-B TO I-DAY
ELSE
  DISPLAY SCREEN(24,17) WITH NO ADVANCING
  DISPLAY 'DATE NOT WITH PROPER RANGE'
                                WITH NO ADVANCING
PERFORM GET-DAY.
DISPLAY SCREEN(24,17)WITH NO ADVANCING.
DISPLAY '
                                WITH NO ADVANCING.

```

PRINT-AUDIT-TRAIL-TITLE.

```
WRITE PRINT-RECORD FROM COMPANY-TITLE-2
      AFTER ADVANCING 4 LINES.
MOVE B-YEAR TO AUDIT-HEADING-YEAR.
MOVE B-MONTH TO AUDIT-HEADING-MONTH.
MOVE B-DAY TO AUDIT-HEADING-DAY.
WRITE PRINT-RECORD FROM AUDIT-HEADING-1.
WRITE PRINT-RECORD FROM AUDIT-HEADING-2.
MOVE E-YEAR TO AUDIT-HEADING-YEAR.
MOVE E-MONTH TO AUDIT-HEADING-MONTH.
MOVE E-DAY TO AUDIT-HEADING-DAY.
WRITE PRINT-RECORD FROM AUDIT-HEADING-1.
```

```
PRINT-AUDIT-TRAIL-HEADING.
MOVE PAGE-NUMBER TO AUDIT-HEADING-PAGE.
MOVE TOTAL-PAGE-NUMBER TO
      AUDIT-HEADING-TOTAL-PAGE.
IF PAGE-NUMBER GREATER THAN 1
  WRITE PRINT-RECORD FROM SPACES
      AFTER ADVANCING PAGE.
WRITE PRINT-RECORD FROM AUDIT-HEADING-3
      AFTER ADVANCING 2 LINES.
WRITE PRINT-RECORD FROM AUDIT-HEADING-4
      AFTER ADVANCING 4 LINES.
WRITE PRINT-RECORD FROM AUDIT-HEADING-5.
WRITE PRINT-RECORD FROM AUDIT-HEADING-6
      BEFORE ADVANCING 3 LINES.
```

```
GO-TO-BEGIN-DATE.
IF PRE-DATE-OF-ENTRY NOT GREATER B-DAY
  READ PRE-ENTERED-ACCOUNT-FILE AT END
  MOVE 'Y' TO EOF-PRE-FILE-OR-NOT
ELSE MOVE 'Y' TO FIND-BEGIN-DATE-OK.
```

```
PRINT-LEDGER-SHEET-SCREEN.
DISPLAY REVERSE-VIDEO WITH NO ADVANCING.
DISPLAY SCREEN(22,17) WITH NO ADVANCING.
DISPLAY 'PRINT LEDGER SHEET PROCESSING'
      WITH NO ADVANCING.
DISPLAY EXIT-REVERSE WITH NO ADVANCING.
```

```
PRINT-LEDGER-SHEET.
OPEN INPUT ENTERED-ACCOUNT-FILE.
MOVE 1 TO TABLE-INDEX.
MOVE 'N' TO BUILD-TABLE-OK-OR-NOT.
READ ENTERED-ACCOUNT-FILE AT END MOVE 'Y'
      TO BUILD-TABLE-OK-OR-NOT.
PERFORM BUILD-LEDGER-TABLE UNTIL
      BUILD-TABLE-OK.
CLOSE ENTERED-ACCOUNT-FILE.
SUBTRACT 1 FROM TABLE-INDEX GIVING TABLE-INDEX.
PERFORM PROCESS-LEDGER-ACCOUNT VARYING INDEX-A
      FROM 1 BY 1 UNTIL INDEX-A > TABLE-INDEX.
ACCEPT SYS-DATE FROM DATE.
```

```
BUILD-LEDGER-TABLE.
MOVE 'N' TO ACCOUNT-EXIST-OR-NOT.
```

```
IF TABLE-INDEX GREATER THAN 1
PERFORM CHECK-ACCOUNT-EXIST VARYING INDEX-A FROM
    1 BY 1 UNTIL INDEX-A > TABLE-INDEX - 1
OR ACCOUNT-EXIST
ELSE
MOVE ACC-NUMBER TO LEDGER-COUNTER(TABLE-INDEX).
IF NOT ACCOUNT-EXIST MOVE ACC-NUMBER TO
    LEDGER-COUNTER(TABLE-INDEX)
    ADD 1 TO TABLE-INDEX.
READ ENTERED-ACCOUNT-FILE AT END MOVE
'Y' TO BUILD-TABLE-OK-OR-NOT.
```

CHECK-ACCOUNT-EXIST.

```
IF ACC-NUMBER EQUAL LEDGER-COUNTER(INDEX-A)
MOVE 'Y' TO ACCOUNT-EXIST-OR-NOT.
```

PROCESS-LEDGER-ACCOUNT.

```
MOVE 0 TO REPEAT-COUNTER.
PERFORM LEDGER-SHEET-PROCESS UNTIL
REPEAT-COUNTER EQUAL 2.
```

LEDGER-SHEET-PROCESS.

```
OPEN INPUT ENTERED-ACCOUNT-FILE.
IF REPEAT-COUNTER EQUAL 1
    OPEN OUTPUT PRINT-FILE.
MOVE 1 TO PAGE-NUMBER.
MOVE 0 TO LINE-NUMBER.
IF REPEAT-COUNTER EQUAL 1 PERFORM
    PRINT-LEDGER-SHEET-TITLE.
ADD 7 TO LINE-NUMBER.
MOVE 0 TO NET-CHANGE.
MOVE 'N' TO EOF-ENTERED-ACC-FILE-OR-NOT.
READ ENTERED-ACCOUNT-FILE AT END MOVE
'Y' TO EOF-ENTERED-ACC-FILE-OR-NOT.
PERFORM PRINT-LEDGER-SHEET-BODY UNTIL
    EOF-ENTERED-ACC-FILE.
CLOSE ENTERED-ACCOUNT-FILE.
IF REPEAT-COUNTER EQUAL 1
    CLOSE PRINT-FILE.
ADD 1 TO REPEAT-COUNTER.
SUBTRACT 1 FROM PAGE-NUMBER GIVING PAGE-NUMBER.
MOVE PAGE-NUMBER TO TOTAL-PAGE-NUMBER.
```

PRINT-LEDGER-SHEET-BODY.

```
IF REPEAT-COUNTER EQUAL 1
PERFORM PRINT-LEDGER-SHEET-HEADING.
ADD 10 TO LINE-NUMBER.
PERFORM PRINT-LEDGER-SHEET-LINE UNTIL
LINE-NUMBER EQUAL 50 OR EOF-ENTERED-ACC-FILE.
IF EOF-ENTERED-ACC-FILE
    ADD 12 TO LINE-NUMBER
    IF REPEAT-COUNTER EQUAL 1
        PERFORM PRINT-NET-CHANGE-LINES.
MOVE 0 TO LINE-NUMBER.
ADD 1 TO PAGE-NUMBER.
```


PRINT-LEDGER-SHEET-HEADING.

```
MOVE PAGE-NUMBER TO LEDGER-HEADING-PAGE.
MOVE TOTAL-PAGE-NUMBER TO
      LEDGER-HEADING-TOTAL-PAGE.
IF PAGE-NUMBER GREATER THAN 1
  WRITE PRINT-RECORD FROM SPACES
      AFTER ADVANCING PAGE.
WRITE PRINT-RECORD FROM LEDGER-SHEET-HEADING
      AFTER ADVANCING 4 LINES.
WRITE PRINT-RECORD FROM LEDGER-SHEET-LINE-2
      AFTER ADVANCING 4 LINES.
WRITE PRINT-RECORD FROM LEDGER-SHEET-LINE-3
      AFTER ADVANCING 1 LINES.
WRITE PRINT-RECORD FROM LEDGER-SHEET-LINE-4
      BEFORE ADVANCING 1 LINES.
```

PRINT-NET-CHANGE-LINES.

```
OPEN INPUT GENERAL-LEDGER-FILE.
MOVE LEDGER-COUNTER(INDEX-A) TO G-ACCOUNT-NUMBER.
READ GENERAL-LEDGER-FILE INVALID KEY
DISPLAY SCREEN(24,17) WITH NO ADVANCING
DISPLAY 'ACCOUNT NUMBER ERROR '
      WITH NO ADVANCING.
IF NET-CHANGE GREATER THAN 0
  MOVE 'CR' TO LEDGER-SHEET-LINE5-MARK
  MOVE NET-CHANGE TO LEDGER-SHEET-LINE5-BALANCE
ELSE
  MOVE 'DR' TO LEDGER-SHEET-LINE5-MARK
  MULTIPLY -1 BY NET-CHANGE
  MOVE NET-CHANGE TO LEDGER-SHEET-LINE5-BALANCE
  MULTIPLY -1 BY NET-CHANGE.
WRITE PRINT-RECORD FROM LEDGER-SHEET-LINE-5
      AFTER ADVANCING 3 LINES.
WRITE PRINT-RECORD FROM LEDGER-SHEET-LINE-6
      AFTER ADVANCING 4 LINES.
MOVE G-ACCOUNT-NAME TO LEDGER-SHEET-LINE7-NAME.
WRITE PRINT-RECORD FROM LEDGER-SHEET-LINE-7
      AFTER ADVANCING 2 LINES.
IF G-CURRENT-TOTAL GREATER THAN 0
  MOVE 'CR' TO LEDGER-SHEET-LINE8-MARK
  MOVE G-CURRENT-TOTAL TO LEDGER-SHEET-LINE8-VALUE
ELSE
  MOVE 'DR' TO LEDGER-SHEET-LINE8-MARK
  MULTIPLY -1 BY G-CURRENT-TOTAL
  MOVE G-CURRENT-TOTAL TO LEDGER-SHEET-LINE8-VALUE
  MULTIPLY -1 BY G-CURRENT-TOTAL.
MOVE 'OPENING BALANCE ' TO LEDGER-SHEET-LINE8-LABEL.
WRITE PRINT-RECORD FROM LEDGER-SHEET-LINE-8
      AFTER ADVANCING 3 LINES.
ADD NET-CHANGE TO G-CURRENT-TOTAL.
IF G-CURRENT-TOTAL GREATER THAN 0
  MOVE 'CR' TO LEDGER-SHEET-LINE8-MARK
  MOVE G-CURRENT-TOTAL TO LEDGER-SHEET-LINE8-VALUE
ELSE
  MOVE 'DR' TO LEDGER-SHEET-LINE8-MARK
  MULTIPLY -1 BY G-CURRENT-TOTAL
```

```
MOVE G-CURRENT-TOTAL TO LEDGER-SHEET-LINE8-VALUE
MULTIPLY -1 BY G-CURRENT-TOTAL.
MOVE 'CLOSING BALANCE 'TO LEDGER-SHEET-LINE8-LABEL.
WRITE PRINT-RECORD FROM LEDGER-SHEET-LINE-8
AFTER ADVANCING 1 LINES.
CLOSE GENERAL-LEDGER-FILE.
```

PRINT-LEDGER-SHEET-LINE.

```
IF LEDGER-COUNTER(INDEX-A) EQUAL ACC-NUMBER
PERFORM PROCESS-LEDGER-SHEET-LINE.
READ ENTERED-ACCOUNT-FILE AT END
MOVE 'Y' TO EOF-ENTERED-ACC-FILE-OR-NOT.
```

PROCESS-LEDGER-SHEET-LINE.

```
MOVE ENTRY-NO TO LEDGER-SHEET-ENTRY-NUMBER.
IF LINE-NUMBER EQUAL 17 AND PAGE-NUMBER EQUAL 1
MOVE ACC-NUMBER TO LEDGER-SHEET-ACCOUNT-NUMBER
ELSE MOVE SPACES TO LEDGER-SHEET-ACCOUNT-NUMBER.
MOVE DATE-OF-ENTRY TO SYS-DATE.
MOVE SYS-YEAR TO LEDGER-SHEET-YEAR.
MOVE SYS-MONTH TO LEDGER-SHEET-MONTH.
MOVE SYS-DAY TO LEDGER-SHEET-DAY.
IF SOURCE-CODE EQUAL 1 MOVE 'A/R'
TO LEDGER-SHEET-SOURCE-CODE
ELSE IF SOURCE-CODE EQUAL 2 MOVE 'A/P'
TO LEDGER-SHEET-SOURCE-CODE
ELSE IF SOURCE-CODE EQUAL 3 MOVE 'P/R'
TO LEDGER-SHEET-SOURCE-CODE
ELSE IF SOURCE-CODE EQUAL 4 MOVE 'ADJ'
TO LEDGER-SHEET-SOURCE-CODE.
ADD ACCOUNT-VALUE TO NET-CHANGE.
MOVE SPACES TO LEDGER-SHEET-ACCOUNT-CR.
MOVE SPACES TO LEDGER-SHEET-ACCOUNT-DR.
IF ACCOUNT-VALUE GREATER THAN 0 MOVE
ACCOUNT-VALUE TO LEDGER-SHEET-ACCOUNT-CR
ELSE
MULTIPLY -1 BY ACCOUNT-VALUE
MOVE ACCOUNT-VALUE TO LEDGER-SHEET-ACCOUNT-DR
MULTIPLY -1 BY ACCOUNT-VALUE.
IF REPEAT-COUNTER EQUAL 1
WRITE PRINT-RECORD FROM LEDGER-SHEET-LINE.
ADD 1 TO LINE-NUMBER.
```

PRINT-LEDGER-SHEET-TITLE.

```
WRITE PRINT-RECORD FROM SPACES AFTER ADVANCING PAGE.
PERFORM PRINT-COMPANY-TITLE.
MOVE SCREEN-SYS-DATE TO LEDGER-SHEET-TITLE-DATE.
WRITE PRINT-RECORD FROM LEDGER-SHEET-TITLE-LINE
AFTER ADVANCING 2 LINES.
```

PRINT-TRIAL-BALANCE-SCREEN.

```
DISPLAY REVERSE-VIDEO WITH NO ADVANCING.
DISPLAY SCREEN(22,17) WITH NO ADVANCING.
DISPLAY 'PRINT TRIAL BALANCE PROCESSING'
WITH NO ADVANCING.
```

DISPLAY EXIT-REVERSE WITH NO ADVANCING.

PRINT-TRIAL-BALANCE.

OPEN INPUT ENTERED-ACCOUNT-FILE.
MOVE 1 TO TABLE-INDEX.
MOVE 'N' TO BUILD-TABLE-OK-OR-NOT.
READ ENTERED-ACCOUNT-FILE AT END MOVE 'Y'
TO BUILD-TABLE-OK-OR-NOT.
PERFORM BUILD-TRIAL-BALANCE-TABLE UNTIL
BUILD-TABLE-OK.
CLOSE ENTERED-ACCOUNT-FILE.
SUBTRACT 1 FROM TABLE-INDEX GIVING TABLE-INDEX.
OPEN INPUT GENERAL-LEDGER-FILE
OUTPUT PRINT-FILE.
MOVE 0 TO DR-TOTAL.
MOVE 0 TO CR-TOTAL.
MOVE 1 TO PAGE-NUMBER.
MOVE 0 TO LINE-NUMBER.
MOVE 'N' TO EOF-G-L-FILE-OR-NOT.
READ GENERAL-LEDGER-FILE NEXT AT END
MOVE 'Y' TO EOF-G-L-FILE-OR-NOT.
PERFORM PROCESS-TRIAL-BALANCE UNTIL EOF-G-L-FILE.
PERFORM PRINT-TRIAL-TOTAL-LINE.
CLOSE GENERAL-LEDGER-FILE
PRINT-FILE.
ACCEPT SYS-DATE FROM DATE.

BUILD-TRIAL-BALANCE-TABLE.

MOVE 'N' TO ACCOUNT-EXIST-OR-NOT.
IF TABLE-INDEX GREATER THAN 1
PERFORM CHECK-ENTERED-ACCOUNT-EXIST VARYING
INDEX-A FROM 1 BY 1 UNTIL INDEX-A >
TABLE-INDEX - 1 OR ACCOUNT-EXIST
ELSE
IF UPDATE-CODE EQUAL 'N'
MOVE ACC-NUMBER TO LEDGER-COUNTER(TABLE-INDEX)
ADD 1 TO TABLE-INDEX.
IF TABLE-INDEX NOT EQUAL 1
IF NOT ACCOUNT-EXIST AND UPDATE-CODE EQUAL 'N' MOVE
ACC-NUMBER TO TRIAL-TABLE-ACCOUNT(TABLE-INDEX)
MOVE ACCOUNT-VALUE TO
TRIAL-TABLE-VALUE(TABLE-INDEX)
ADD 1 TO TABLE-INDEX.
READ ENTERED-ACCOUNT-FILE AT END MOVE
'Y' TO BUILD-TABLE-OK-OR-NOT.

CHECK-ENTERED-ACCOUNT-EXIST.

IF ACC-NUMBER EQUAL TRIAL-TABLE-ACCOUNT(INDEX-A)
MOVE 'Y' TO ACCOUNT-EXIST-OR-NOT
IF UPDATE-CODE EQUAL 'N'
ADD ACCOUNT-VALUE TO TRIAL-TABLE-VALUE(INDEX-A).

PROCESS-TRIAL-BALANCE.

IF PAGE-NUMBER EQUAL 1 AND LINE-NUMBER EQUAL 0
PERFORM PRINT-TRIAL-BALANCE-TITLE
PERFORM PRINT-TRIAL-BALANCE-HEADING

```

ADD 14 TO LINE-NUMBER.
IF PAGE-NUMBER NOT EQUAL 1 AND LINE-NUMBER EQUAL 0
PERFORM PRINT-TRIAL-BALANCE-HEADING
ADD 11 TO LINE-NUMBER.
PERFORM PRINT-TRIAL-BALANCE-BODY UNTIL
    LINE-NUMBER GREATER THAN 50 OR
    EOF-G-L-FILE.
ADD 1 TO PAGE-NUMBER.
MOVE 0 TO LINE-NUMBER.

```

```

PRINT-TRIAL-BALANCE-BODY.
IF G-ACCOUNT-TYPE EQUAL 0
    PERFORM PRINT-TRIAL-BALANCE-LINE.
READ GENERAL-LEDGER-FILE NEXT AT END
    MOVE 'Y' TO EOF-G-L-FILE-OR-NOT.

```

```

PRINT-TRIAL-BALANCE-LINE.
MOVE 'N' TO ACCOUNT-EXIST-OR-NOT.
PERFORM ADD-ACCOUNT-VALUE VARYING INDEX-A
    FROM 1 BY 1 UNTIL INDEX-A >
    TABLE-INDEX OR ACCOUNT-EXIST.
MOVE G-ACCOUNT-NUMBER TO TRIAL-LINE5-ACC-NUMBER.
MOVE G-ACCOUNT-NAME TO TRIAL-LINE5-ACC-NAME.
IF G-CURRENT-TOTAL GREATER THAN 0 MOVE
    G-CURRENT-TOTAL TO TRIAL-LINE5-ACCOUNT-TEMPLE
MOVE TRIAL-LINE5-ACCOUNT-TEMPLE TO
    TRIAL-LINE5-ACCOUNT-CR
MOVE SPACES TO TRIAL-LINE5-ACCOUNT-DR
ADD G-CURRENT-TOTAL TO CR-TOTAL
ELSE
    ADD G-CURRENT-TOTAL TO DR-TOTAL
    MULTIPLY -1 BY G-CURRENT-TOTAL
    MOVE G-CURRENT-TOTAL TO
        TRIAL-LINE5-ACCOUNT-TEMPLE
    MOVE TRIAL-LINE5-ACCOUNT-TEMPLE TO
        TRIAL-LINE5-ACCOUNT-DR
    MOVE SPACES TO TRIAL-LINE5-ACCOUNT-CR.
IF G-CURRENT-TOTAL EQUAL 0
MOVE '      0.00' TO TRIAL-LINE5-ACCOUNT-CR
MOVE SPACES TO TRIAL-LINE5-ACCOUNT-DR.
WRITE PRINT-RECORD FROM TRIAL-BALANCE-LINE-5.
    ADD 1 TO LINE-NUMBER.

```

```

ADD-ACCOUNT-VALUE.
IF TRIAL-TABLE-ACCOUNT(INDEX-A) EQUAL
    G-ACCOUNT-NUMBER
    ADD TRIAL-TABLE-VALUE(INDEX-A) TO G-CURRENT-TOTAL
    MOVE 'Y' TO ACCOUNT-EXIST-OR-NOT.

```

```

PRINT-TRIAL-TOTAL-LINE.
WRITE PRINT-RECORD FROM TRIAL-BALANCE-LINE-6
    AFTER ADVANCING 1 LINES.
MOVE CR-TOTAL TO TRIAL-LINE7-CR-VALUE.
MOVE DR-TOTAL TO TRIAL-LINE7-DR-VALUE.
WRITE PRINT-RECORD FROM TRIAL-BALANCE-LINE-7

```

AFTER ADVANCING 4 LINES.

PRINT-TRIAL-BALANCE-TITLE.

WRITE PRINT-RECORD FROM SPACES AFTER ADVANCING PAGE.
MOVE SCREEN-SYS-DATE TO TRIAL-BALANCE-TITLE-DATE.
WRITE PRINT-RECORD FROM TRIAL-BALANCE-TITLE
AFTER ADVANCING 4 LINES.

PRINT-TRIAL-BALANCE-HEADING.

IF PAGE-NUMBER GREATER THAN 1 WRITE
PRINT-RECORD FROM SPACES AFTER ADVANCING PAGE.
MOVE PAGE-NUMBER TO TRIAL-LINE1-PAGE-NUMBER.
WRITE PRINT-RECORD FROM TRIAL-BALANCE-LINE-1
AFTER ADVANCING 4 LINES.
WRITE PRINT-RECORD FROM TRIAL-BALANCE-LINE-2
AFTER ADVANCING 4 LINES.
WRITE PRINT-RECORD FROM TRIAL-BALANCE-LINE-3
AFTER ADVANCING 1 LINES.
WRITE PRINT-RECORD FROM TRIAL-BALANCE-LINE-4
BEFORE ADVANCING 1 LINES.

PRINT-INCOME-STATEMENT-SCREEN.

DISPLAY REVERSE-VIDEO WITH NO ADVANCING.
DISPLAY SCREEN(22,17) WITH NO ADVANCING.
DISPLAY 'PRINT INCOME STATEMENT PROCESSING'
WITH NO ADVANCING.
DISPLAY EXIT-REVERSE WITH NO ADVANCING.

PRINT-INCOME-STATEMENT.

MOVE 1 TO PAGE-NUMBER.
MOVE 0 TO LINE-NUMBER.
MOVE SPACES TO PRE-ACC-TYPE.
MOVE 4 TO INDENT-LEVEL-INDEX.
MOVE 8 TO TOTAL-LEVEL-INDEX.
OPEN INPUT GENERAL-LEDGER-FILE
OUTPUT PRINT-FILE.
MOVE 'N' TO EOF-G-L-FILE-OR-NOT.
PERFORM CLEAN-TOTAL-TABLE VARYING INDEX-A
FROM 1 BY 1 UNTIL INDEX-A EQUAL 9.
MOVE 'N' TO TAKE-TYPE-OK-OR-NOT.
PERFORM GET-EXPENSE-ACCOUNT UNTIL TAKE-TYPE-OK.
PERFORM INCOME-STATEMENT-PROCESS UNTIL EOF-G-L-FILE.
CLOSE GENERAL-LEDGER-FILE
PRINT-FILE.

GET-EXPENSE-ACCOUNT.

READ GENERAL-LEDGER-FILE NEXT AT END MOVE 'Y'
TO TAKE-TYPE-OK-OR-NOT.
IF G-ACCOUNT-NUMBER EQUAL '300000' MOVE
'Y' TO TAKE-TYPE-OK-OR-NOT.

INCOME-STATEMENT-PROCESS.

IF PAGE-NUMBER EQUAL 1 PERFORM
PRINT-INCOME-STATEMENT-TITLE.
PERFORM PRINT-INCOME-STATEMENT-HEADING.
IF G-ACCOUNT-NUMBER NOT EQUAL '300000'

```
READ GENERAL-LEDGER-FILE NEXT AT END MOVE 'Y'  
  TO EOF-G-L-FILE-OR-NOT.  
PERFORM GET-INCOME-STATEMENT-BODY UNTIL  
  EOF-G-L-FILE OR LINE-NUMBER GREATER THAN 55.  
ADD 1 TO PAGE-NUMBER.  
MOVE 0 TO LINE-NUMBER.
```

```
GET-INCOME-STATEMENT-BODY.  
  PERFORM DECIDE-TOTAL-LEVEL.  
  PERFORM DECIDE-INDENT-LEVEL.  
  IF G-ACCOUNT-TYPE EQUAL '0' OR  
    G-ACCOUNT-TYPE EQUAL '2'  
  PERFORM TOTAL-AMOUNT-PROCESS  
  PERFORM DECIDE-DOLLAR-SIGN.  
  IF G-ACCOUNT-TYPE EQUAL '2' AND  
  PRE-ACC-TYPE EQUAL '2'  
    WRITE PRINT-RECORD FROM SPACES  
      ADD 1 TO LINE-NUMBER.  
  IF G-ACCOUNT-TYPE EQUAL '3' AND  
  PRE-ACC-TYPE EQUAL '2'  
    WRITE PRINT-RECORD FROM SPACES  
      ADD 1 TO LINE-NUMBER.  
  WRITE PRINT-RECORD FROM BALANCE-SHEET-LINE  
    ADD 1 TO LINE-NUMBER.  
  MOVE SPACES TO BALANCE-SHEET-LINE.  
  MOVE G-ACCOUNT-TYPE TO PRE-ACC-TYPE.  
  READ GENERAL-LEDGER-FILE NEXT AT END MOVE 'Y' TO  
    EOF-G-L-FILE-OR-NOT.
```

```
PRINT-INCOME-STATEMENT-TITLE.  
  WRITE PRINT-RECORD FROM COMPANY-TITLE-2  
    AFTER ADVANCING 3 LINES.  
  ADD 3 TO LINE-NUMBER.
```

```
PRINT-INCOME-STATEMENT-HEADING.  
  IF PAGE-NUMBER GREATER THAN 1  
  WRITE PRINT-RECORD FROM SPACES  
    AFTER ADVANCING PAGE.  
  MOVE PAGE-NUMBER TO INCOME-STATEMENT-PAGE-NUMBER.  
  MOVE SCREEN-SYS-DATE TO INCOME-STATEMENT-DATE.  
  WRITE PRINT-RECORD FROM INCOME-STATEMENT-HEADING-1  
    AFTER ADVANCING 2 LINES.  
  WRITE PRINT-RECORD FROM INCOME-STATEMENT-HEADING-2  
    AFTER ADVANCING 2 LINES.  
  WRITE PRINT-RECORD FROM SPACES AFTER ADVANCING  
    4 LINES.  
  ADD 8 TO LINE-NUMBER.
```

```
PRINT-BALANCE-SHEET-SCREEN.  
  DISPLAY REVERSE-VIDEO WITH NO ADVANCING.  
  DISPLAY SCREEN(22,17) WITH NO ADVANCING.  
  DISPLAY 'PRINT BALANCE SHEET PROCESSING'  
    WITH NO ADVANCING.  
  DISPLAY EXIT-REVERSE WITH NO ADVANCING.
```

```
PRINT-BALANCE-SHEET.
```

```
MOVE 1 TO PAGE-NUMBER.
MOVE 0 TO LINE-NUMBER.
MOVE SPACES TO PRE-ACC-TYPE.
MOVE 4 TO INDENT-LEVEL-INDEX.
MOVE 8 TO TOTAL-LEVEL-INDEX.
OPEN INPUT GENERAL-LEDGER-FILE
      OUTPUT PRINT-FILE.
MOVE 'N' TO EOF-G-L-FILE-OR-NOT.
PERFORM CLEAN-TOTAL-TABLE VARYING INDEX-A
FROM 1 BY 1 UNTIL INDEX-A EQUAL 9.
PERFORM BALANCE-SHEET-PROCESS UNTIL EOF-G-L-FILE.
CLOSE GENERAL-LEDGER-FILE
      PRINT-FILE.
```

CLEAN-TOTAL-TABLE.

```
MOVE SPACES TO TOTAL-AMOUNT(INDEX-A).
```

BALANCE-SHEET-PROCESS.

```
IF PAGE-NUMBER EQUAL 1 PERFORM
      PRINT-BALANCE-SHEET-TITLE.
PERFORM PRINT-BALANCE-SHEET-HEADING.
READ GENERAL-LEDGER-FILE NEXT AT END MOVE 'Y'
      TO EOF-G-L-FILE-OR-NOT.
PERFORM GET-BALANCE-SHEET-BODY UNTIL EOF-G-L-FILE
      OR LINE-NUMBER GREATER THAN 55.
ADD 1 TO PAGE-NUMBER.
MOVE 0 TO LINE-NUMBER.
```

GET-BALANCE-SHEET-BODY.

```
IF G-ACCOUNT-TYPE EQUAL '1'
      MOVE 4 TO INDENT-LEVEL-INDEX
MOVE 8 TO TOTAL-LEVEL-INDEX
PERFORM CLEAN-TOTAL-TABLE VARYING INDEX-A
FROM 1 BY 1 UNTIL INDEX-A EQUAL 9.
PERFORM DECIDE-TOTAL-LEVEL.
PERFORM DECIDE-INDENT-LEVEL.
IF G-ACCOUNT-TYPE EQUAL '0' OR
      G-ACCOUNT-TYPE EQUAL '2'
PERFORM TOTAL-AMOUNT-PROCESS
PERFORM DECIDE-DOLLAR-SIGN.
IF G-ACCOUNT-TYPE EQUAL '2' AND
      PRE-ACC-TYPE EQUAL '2'
      WRITE PRINT-RECORD FROM SPACES
      ADD 1 TO LINE-NUMBER.
IF G-ACCOUNT-TYPE EQUAL '3' AND
      PRE-ACC-TYPE EQUAL '2'
      WRITE PRINT-RECORD FROM SPACES
      ADD 1 TO LINE-NUMBER.
WRITE PRINT-RECORD FROM BALANCE-SHEET-LINE
      ADD 1 TO LINE-NUMBER.
MOVE SPACES TO BALANCE-SHEET-LINE.
MOVE G-ACCOUNT-TYPE TO PRE-ACC-TYPE.
READ GENERAL-LEDGER-FILE NEXT AT END MOVE 'Y' TO
      EOF-G-L-FILE-OR-NOT.
IF G-ACCOUNT-NUMBER EQUAL '300000' MOVE 'Y' TO
      EOF-G-L-FILE-OR-NOT.
```

DECIDE-TOTAL-LEVEL.

```
IF G-ACCOUNT-TYPE EQUAL '2'  
ADD 1 TO TOTAL-LEVEL-INDEX  
ELSE  
IF G-ACCOUNT-TYPE EQUAL '3'  
ADD -1 TO TOTAL-LEVEL-INDEX  
ELSE  
IF G-ACCOUNT-TYPE EQUAL '1' AND  
PRE-ACC-TYPE NOT EQUAL '1'  
ADD -1 TO TOTAL-LEVEL-INDEX.
```

DECIDE-INDENT-LEVEL.

```
IF G-ACCOUNT-TYPE EQUAL '3' AND PRE-ACC-TYPE  
NOT EQUAL '3' ADD 1 TO INDENT-LEVEL-INDEX  
ELSE  
IF G-ACCOUNT-TYPE EQUAL '3' AND PRE-ACC-TYPE  
NOT EQUAL '1' ADD 1 TO INDENT-LEVEL-INDEX  
ELSE IF G-ACCOUNT-TYPE EQUAL '2'  
ADD -1 TO INDENT-LEVEL-INDEX  
ELSE IF G-ACCOUNT-TYPE '2' AND PRE-ACC-TYPE  
EQUAL '2' ADD 1 TO INDENT-LEVEL-INDEX  
ELSE IF G-ACCOUNT-TYPE EQUAL '0'  
AND PRE-ACC-TYPE EQUAL '3'  
ADD 1 TO INDENT-LEVEL-INDEX.  
IF G-ACCOUNT-TYPE EQUAL '1'  
WRITE PRINT-RECORD FROM SPACES  
AFTER ADVANCING 3 LINES  
ADD 3 TO LINE-NUMBER  
MOVE 3 TO INDENT-LEVEL-INDEX.  
IF INDENT-LEVEL-INDEX EQUAL 1  
MOVE G-ACCOUNT-NAME TO INDENT-1  
MOVE INDENT-1-OUTPUT TO BALANCE-SHEET-ACC-NAME  
ELSE IF INDENT-LEVEL-INDEX EQUAL 2  
MOVE G-ACCOUNT-NAME TO INDENT-2  
MOVE INDENT-2-OUTPUT TO BALANCE-SHEET-ACC-NAME  
ELSE  
IF INDENT-LEVEL-INDEX EQUAL 3  
MOVE G-ACCOUNT-NAME TO INDENT-3  
MOVE INDENT-3-OUTPUT TO BALANCE-SHEET-ACC-NAME  
ELSE  
IF INDENT-LEVEL-INDEX EQUAL 4  
MOVE G-ACCOUNT-NAME TO INDENT-4  
MOVE INDENT-4-OUTPUT TO BALANCE-SHEET-ACC-NAME  
ELSE  
IF INDENT-LEVEL-INDEX EQUAL 5  
MOVE G-ACCOUNT-NAME TO INDENT-5  
MOVE INDENT-5-OUTPUT TO BALANCE-SHEET-ACC-NAME  
ELSE  
IF INDENT-LEVEL-INDEX EQUAL 6  
MOVE G-ACCOUNT-NAME TO INDENT-6  
MOVE INDENT-6-OUTPUT TO BALANCE-SHEET-ACC-NAME  
ELSE  
IF INDENT-LEVEL-INDEX EQUAL 7  
MOVE G-ACCOUNT-NAME TO INDENT-7  
MOVE INDENT-7-OUTPUT TO BALANCE-SHEET-ACC-NAME.
```


TOTAL-AMOUNT-PROCESS.

```
    IF G-ACCOUNT-TYPE EQUAL '0'
      PERFORM REGULAR-ACCOUNT-PROCESS VARYING
        INDEX-A FROM 8 BY -1 UNTIL INDEX-A EQUAL
          TOTAL-LEVEL-INDEX - 1
      IF G-CURRENT-TOTAL LESS THAN 0
        MOVE '<' TO BALANCE-SHEET-MARK-1
        MOVE '>' TO BALANCE-SHEET-MARK-2
        MULTIPLY -1 BY G-CURRENT-TOTAL
        MOVE G-CURRENT-TOTAL TO BALANCE-SHEET-ACC-VALUE
      ELSE
        MOVE G-CURRENT-TOTAL TO BALANCE-SHEET-ACC-VALUE.
      IF G-ACCOUNT-TYPE EQUAL '2'
    IF TOTAL-AMOUNT(TOTAL-LEVEL-INDEX) LESS THAN 0
      MOVE '<' TO BALANCE-SHEET-MARK-3
      MOVE '>' TO BALANCE-SHEET-MARK-4
      MULTIPLY -1 BY TOTAL-AMOUNT(TOTAL-LEVEL-INDEX)
      MOVE TOTAL-AMOUNT(TOTAL-LEVEL-INDEX) TO
        BALANCE-SHEET-TOTAL
      MULTIPLY -1 BY TOTAL-AMOUNT(TOTAL-LEVEL-INDEX)
    ELSE MOVE TOTAL-AMOUNT(TOTAL-LEVEL-INDEX) TO
      BALANCE-SHEET-TOTAL.
    IF G-ACCOUNT-TYPE EQUAL '2'
    PERFORM SET-TOTAL-ZERO-PROCESS VARYING INDEX-A
      FROM 1 BY 1 UNTIL INDEX-A EQUAL TOTAL-LEVEL-INDEX.
```

PRINT-BALANCE-SHEET-TITLE.

```
    WRITE PRINT-RECORD FROM COMPANY-TITLE-2
      AFTER ADVANCING 3 LINES.
    ADD 3 TO LINE-NUMBER.
```

PRINT-BALANCE-SHEET-HEADING.

```
    IF PAGE-NUMBER GREATER THAN 1
      WRITE PRINT-RECORD FROM SPACES
        AFTER ADVANCING PAGE.
      MOVE PAGE-NUMBER TO BALANCE-SHEET-PAGE-NUMBER.
      MOVE SCREEN-SYS-DATE TO BALANCE-SHEET-HEADING-DATE.
      WRITE PRINT-RECORD FROM BALANCE-SHEET-HEADING-1
        AFTER ADVANCING 2 LINES.
      WRITE PRINT-RECORD FROM BALANCE-SHEET-HEADING-2
        AFTER ADVANCING 2 LINES.
      WRITE PRINT-RECORD FROM SPACES AFTER ADVANCING
        4 LINES.
    ADD 8 TO LINE-NUMBER.
```

DECIDE-DOLLAR-SIGN.

```
    IF G-ACCOUNT-TYPE EQUAL '0' AND PRE-ACC-TYPE EQUAL
      '3' MOVE '$' TO BALANCE-DOLLAR-SIGN-1
    ELSE
      IF G-ACCOUNT-TYPE EQUAL '2' MOVE '$' TO
        BALANCE-DOLLAR-SIGN-2.
```

SET-TOTAL-ZERO-PROCESS.

```
    MOVE SPACES TO TOTAL-AMOUNT(INDEX-A).
```

REGULAR-ACCOUNT-PROCESS.

ADD G-CURRENT-TOTAL TO TOTAL-AMOUNT(INDEX-A).

*-----
 IDENTIFICATION DIVISION.
 *-----

PROGRAM-ID.

UPDAT

AUTHOR.

CCW

DATE-WRITTEN.

15-MAR-1984

*-----
 ENVIRONMENT DIVISION.
 *-----

INPUT-OUTPUT SECTION.

FILE-CONTROL.

SELECT ENTERED-ACCOUNT-FILE,
 ASSIGN TO DSK,
 RECORDING MODE IS ASCII.

SELECT TEMP-ENTERED-ACCOUNT-FILE,
 ASSIGN TO DSK,
 RECORDING MODE IS ASCII.

SELECT PRE-ENTERED-ACCOUNT-FILE,
 ASSIGN TO DSK,
 RECORDING MODE IS ASCII.

SELECT GENERAL-LEDGER-FILE
 ASSIGN TO DSK
 ORGANIZATION IS INDEXED
 ACCESS MODE IS DYNAMIC
 RECORD KEY IS G-ACCOUNT-NUMBER
 RECORDING MODE IS ASCII.

*-----
 DATA DIVISION.
 *-----

FILE SECTION.

FD GENERAL-LEDGER-FILE,
 BLOCK CONTAINS 128 RECORDS,
 VALUE OF ID IS "GENFILINX".

01 GENERAL-LEDGER-RECORD.

05 G-ACCOUNT-NUMBER	PIC 9(6).
05 G-ACCOUNT-NAME	PIC X(30).
05 G-ACCOUNT-TYPE	PIC X.
05 G-CURRENT-TOTAL	PIC S99999999V99.
05 G-YEAR-TO-NOW-TOTAL	PIC S99999999V99.
05 G-PREVIOUS-YEAR-TOTAL	PIC S99999999V99.

FD ENTERED-ACCOUNT-FILE,
 BLOCK CONTAINS 128 RECORDS,
 LABEL RECORDS ARE STANDARD,

VALUE OF ID IS 'ACCONFIL'.

01 ENTERED-ACCOUNT-RECORD.

05	ENTRY-NO	PIC 999999.
05	ACC-NUMBER.	
	08 CATAGORY-NO	PIC 9.
	08 SUBCATAGORY-NO	PIC 99999.
05	ACC-NAME	PIC X(30) .
05	SOURCE-CODE	PIC 9 .
05	ACCOUNT-VALUE	PIC S99999999V99.
05	DATE-OF-ENTRY	PIC XXXXXX.
05	UPDATE-CODE	PIC X.

FD TEMP-ENTERED-ACCOUNT-FILE
BLOCK CONTAINS 128 RECORDS,
LABEL RECORDS ARE STANDARD,
VALUE OF ID IS 'TEMPACTMP'.

01 TEMP-ENTERED-ACCOUNT-RECORD.

05	T-ENTRY-NO	PIC 999999.
05	T-ACC-NO.	
	08 T-CATAGORY-NO	PIC 9.
	08 T-SUBCATAGORY-NO	PIC 99999.
05	T-ACC-NAME	PIC X(30) .
05	T-SOURCE-CODE	PIC 9.
05	T-ACCOUNT-VALUE	PIC S99999999V99.
05	T-DATE-OF-ENTRY	PIC XXXXXX.
05	T-UPDATE-CODE	PIC X.

FD PRE-ENTERED-ACCOUNT-FILE,
BLOCK CONTAINS 128 RECORDS,
LABEL RECORDS ARE STANDARD,
VALUE OF ID IS 'PREVI FIL'.

01 PRE-ENTERED-ACCOUNT-RECORD.

05	PRE-ENTRY-NO	PIC 999999.
05	PRE-ACC-NO.	
	08 PRE-CATAGORY-NO	PIC 9.
	08 PRE-SUBCATAGORY-NO	PIC 99999.
05	PRE-ACC-NAME	PIC X(30) .
05	PRE-SOURCE-CODE	PIC 9.
05	PRE-ACCOUNT-VALUE	PIC S99999999V99.
05	PRE-DATE-OF-ENTRY	PIC XXXXXX.
05	PRE-UPDATE-CODE	PIC X.

*-----
WORKING-STORAGE SECTION.

01 TEST-VALUE-A.

05	FRONT-A	PIC X.
05	BEHIND-A	PIC X(9) .

01 UPDATE-TYPE

PIC X.

01 CR-TOTAL

PIC S99999999V99.

01 DR-TOTAL

PIC S99999999V99.

01	TIMER	PIC	99999.
01	TOTAL-INCOME	PIC	S999999999V99.
77	NOT-ACCOUNT-EXIST	PIC X	VALUE 'N'.
	88 ACCOUNT-NOT-EXIST		VALUE 'Y'.
77	NOT-EOF-ENTERED-ACCOUNT-FILE	PIC X	VALUE 'N'.
	88 EOF-ENTERED-ACCOUNT-FILE		VALUE 'Y'.
77	NOT-EOF-TEMP-FILE	PIC X	VALUE 'N'.
	88 EOF-TEMP-FILE		VALUE 'Y'.
77	NOT-EOF-PRE-ENTERED-ACC-FILE	PIC X	VALUE 'N'.
	88 EOF-PRE-ENTERED-ACC-FILE		VALUE 'Y'.
77	NOT-EOF-GENERAL-LEDGER-FILE	PIC X	VALUE 'N'.
	88 EOF-GENERAL-LEDGER-FILE		VALUE 'Y'.
77	NOT-UPDATE-YET	PIC X	VALUE 'N'.
	88 NOT-UPDATE		VALUE 'Y'.
77	EXIT-UPDATE-ACC-OR-NOT	PIC X	VALUE 'N'.
	88 EXIT-UPDATE-ACCOUNT		VALUE 'Y'.
77	TAKE-TYPE	PIC X	VALUE 'N'.
	88 TAKE-TYPE-OK		VALUE 'Y'.

LINKAGE SECTION.

01	SCREEN-TABLE.		
	05 SCREEN-ROWS		OCCURS 24 TIMES.
	10 SCREEN		PIC X(4)
			USAGE IS DISPLAY-7
			OCCURS 80 TIMES.
01	REVERSE-VIDEO	PIC XX	DISPLAY-7.
01	EXIT-REVERSE	PIC XX	DISPLAY-7.
01	CLEAR-SCREEN	PIC XX	DISPLAY-7.
01	RING-BELL	PIC X	DISPLAY-7.

*-----
 PROCEDURE DIVISION USING SCREEN-TABLE CLEAR-SCREEN RING-BELL
 REVERSE-VIDEO EXIT-REVERSE.
 *-----

MAIN.

MOVE 'N' TO EXIT-UPDATE-ACC-OR-NOT.
 PERFORM SELECT-UPDATE-TYPE-SCREEN.
 PERFORM ACCOUNT-UPDATE-PROCESS
 UNTIL EXIT-UPDATE-ACCOUNT.

EXIT PROGRAM.

ACCOUNT-UPDATE-PROCESS.

```

MOVE 'N' TO TAKE-TYPE.
PERFORM TAKE-TYPE-OF-UPDATE UNTIL TAKE-TYPE-OK.
IF UPDATE-TYPE = '1'
    PERFORM UPDATE-G-L-FILE-SCREEN
    PERFORM UPDATE-GENERAL-LEDGER-FILE
ELSE IF UPDATE-TYPE = '2'
    PERFORM CLEAN-REVENUE-AND-EXP-SCREEN
    PERFORM CLEAN-REVENUES-AND-EXPENSE
    DISPLAY SCREEN(22,17) WITH NO ADVANCING
    DISPLAY '
                                WITH NO ADVANCING
ELSE IF UPDATE-TYPE = '3'
    PERFORM CLEAN-OLD-ENTRIES-SCREEN
    PERFORM CLEAN-OLD-ENTRIES
ELSE IF UPDATE-TYPE = '4'
    PERFORM END-OF-YEAR-PROCESS-SCREEN
    PERFORM END-OF-YEAR-PROCESS
ELSE IF UPDATE-TYPE = '*'
    MOVE 'Y' TO EXIT-UPDATE-ACC-OR-NOT.

```

SELECT-UPDATE-TYPE-SCREEN.

```

DISPLAY CLEAR-SCREEN WITH NO ADVANCING.
DISPLAY REVERSE-VIDEO WITH NO ADVANCING.
DISPLAY SCREEN(1,28) WITH NO ADVANCING.
DISPLAY 'SCREEN - 1.2' WITH NO ADVANCING.
DISPLAY SCREEN(2,22) WITH NO ADVANCING.
DISPLAY 'ACCOUNT UPDATE SELECTION' WITH NO ADVANCING.
DISPLAY EXIT-REVERSE WITH NO ADVANCING.
DISPLAY SCREEN (4,17) WITH NO ADVANCING.
DISPLAY 'SELECT ONE OF THE FOLLOWING TYPE TO
PROCESS'
                                WITH NO
ADVANCING.

```

```

DISPLAY SCREEN (5,31) WITH NO ADVANCING.
DISPLAY 'ENTER SELECTION: _' WITH NO ADVANCING.
    DISPLAY SCREEN(7,16) WITH NO ADVANCING.
DISPLAY '=====
                                WITH NO ADVANCING.
DISPLAY SCREEN(9,16) WITH NO ADVANCING.
DISPLAY ' * : FOR EXIT ACCOUNT UPDATE PROCESS '
                                WITH NO ADVANCING.
DISPLAY SCREEN(11,16) WITH NO ADVANCING.
DISPLAY ' 1 : UPDATE GENERAL LEDGER FILE
                                WITH NO ADVANCING.
DISPLAY SCREEN(13,16) WITH NO ADVANCING.
DISPLAY ' 2 : CLEAN REVENUES AND EXPENSE
                                WITH NO ADVANCING.
DISPLAY SCREEN(15,16) WITH NO ADVANCING.
DISPLAY ' 3 : CLEAN OLD ENTRIES
                                WITH NO ADVANCING.
DISPLAY SCREEN(17,16) WITH NO ADVANCING.
DISPLAY ' 4 : END OF YEAR PROCESS
                                WITH NO ADVANCING.
DISPLAY SCREEN(19,16) WITH NO ADVANCING.
DISPLAY '=====

```

TAKE-TYPE-OF-UPDATE.

```

DISPLAY RING-BELL WITH NO ADVANCING.
DISPLAY SCREEN(5,49) WITH NO ADVANCING.
DISPLAY ' _ ' WITH NO ADVANCING.
DISPLAY SCREEN(5,49) WITH NO ADVANCING.
ACCEPT TEST-VALUE-A.
IF BEHIND-A NOT EQUAL SPACES PERFORM ERROR-HANDLE-A
ELSE MOVE FRONT-A TO UPDATE-TYPE.
IF UPDATE-TYPE EQUAL '1' OR EQUAL '2' OR
    EQUAL '3' OR EQUAL '4' OR EQUAL '*'
    MOVE 'Y' TO TAKE-TYPE
ELSE
    PERFORM ERROR-HANDLE-A.
DISPLAY SCREEN(22,7) WITH NO ADVANCING.
DISPLAY ' '
    WITH NO ADVANCING.
DISPLAY ' ' WITH NO ADVANCING.

```

ERROR-HANDLE-A.

```

DISPLAY SCREEN(22,7) WITH NO ADVANCING.
DISPLAY REVERSE-VIDEO WITH NO ADVANCING.
DISPLAY 'ERROR MESSAGE: ' WITH NO ADVANCING.
DISPLAY EXIT-REVERSE WITH NO ADVANCING.
DISPLAY 'INVALID RESPONSE . PLEASE REENTER '
    WITH NO ADVANCING.
DISPLAY RING-BELL WITH NO ADVANCING.
DISPLAY SCREEN(5,49) WITH NO ADVANCING.
DISPLAY ' _ ' WITH NO ADVANCING.
DISPLAY SCREEN(5,49) WITH NO ADVANCING.
PERFORM TAKE-TYPE-OF-UPDATE.

```

UPDATE-G-L-FILE-SCREEN.

```

DISPLAY REVERSE-VIDEO WITH NO ADVANCING.
DISPLAY SCREEN(22,17) WITH NO ADVANCING.
DISPLAY 'UPDATE GENERAL LEDGER FILE PROCESSING'
    WITH NO ADVANCING.
DISPLAY EXIT-REVERSE WITH NO ADVANCING.

```

UPDATE-GENERAL-LEDGER-FILE.

```

MOVE 0 TO CR-TOTAL.
MOVE 0 TO DR-TOTAL.
OPEN INPUT ENTERED-ACCOUNT-FILE
    GENERAL-LEDGER-FILE.
MOVE 'N' TO NOT-EOF-ENTERED-ACCOUNT-FILE.
READ ENTERED-ACCOUNT-FILE NEXT AT END MOVE 'Y'
    TO NOT-EOF-ENTERED-ACCOUNT-FILE.
PERFORM TOTAL-ENTERED-ACCOUNT-FILE UNTIL
    EOF-ENTERED-ACCOUNT-FILE.
MOVE 'N' TO NOT-EOF-GENERAL-LEDGER-FILE.
READ GENERAL-LEDGER-FILE NEXT AT END MOVE 'Y'

```

```

    TO NOT-EOF-GENERAL-LEDGER-FILE.
    PERFORM TOTAL-GENERAL-LEDGER-FILE UNTIL
        EOF-GENERAL-LEDGER-FILE.
    CLOSE GENERAL-LEDGER-FILE
        ENTERED-ACCOUNT-FILE.
    IF CR-TOTAL EQUAL TO DR-TOTAL
        PERFORM UPDATE-GENERAL-LEDGER-PROCESS
    ELSE DISPLAY SCREEN(22,17) WITH NO ADVANCING
        DISPLAY 'ACCOUNT NOT BALANCE. NO UPDATE '
            WITH NO ADVANCING.

    MOVE 0 TO TIMER.
    PERFORM WAIT-FOR-A-WHILE UNTIL TIMER EQUAL 40000.
    DISPLAY SCREEN(22,17) WITH NO ADVANCING.
    DISPLAY '
        WITH NO ADVANCING.

```

```

TOTAL-ENTERED-ACCOUNT-FILE.
    IF UPDATE-CODE EQUAL 'N'
    IF ACC-NUMBER LESS THAN 200000
        AND ACC-NUMBER GREATER THAN 400000
        ADD ACCOUNT-VALUE TO CR-TOTAL
    ELSE ADD ACCOUNT-VALUE TO DR-TOTAL.
    READ ENTERED-ACCOUNT-FILE NEXT AT END MOVE 'Y'
        TO NOT-EOF-ENTERED-ACCOUNT-FILE.

```

```

TOTAL-GENERAL-LEDGER-FILE.
    IF G-ACCOUNT-NUMBER LESS THAN 200000
        AND G-ACCOUNT-NUMBER GREATER THAN 400000
        ADD G-CURRENT-TOTAL TO CR-TOTAL
    ELSE ADD G-CURRENT-TOTAL TO DR-TOTAL.
    READ GENERAL-LEDGER-FILE NEXT AT END MOVE 'Y'
        TO NOT-EOF-GENERAL-LEDGER-FILE.

```

```

UPDATE-GENERAL-LEDGER-PROCESS.
    MOVE 'N' TO NOT-EOF-ENTERED-ACCOUNT-FILE.
    OPEN INPUT-OUTPUT ENTERED-ACCOUNT-FILE
        INPUT-OUTPUT GENERAL-LEDGER-FILE.
    READ ENTERED-ACCOUNT-FILE AT END MOVE 'Y' TO
        NOT-EOF-ENTERED-ACCOUNT-FILE.
    PERFORM UPDATE-G-L-PROCESS
        UNTIL EOF-ENTERED-ACCOUNT-FILE.
    CLOSE ENTERED-ACCOUNT-FILE
        GENERAL-LEDGER-FILE.
    DISPLAY SCREEN(22,17) WITH NO ADVANCING.
    DISPLAY '
        WITH NO ADVANCING.

```

```

UPDATE-G-L-PROCESS.
    IF UPDATE-CODE EQUAL 'N'
        PERFORM HANDLE-UPDATE.
    READ ENTERED-ACCOUNT-FILE AT END MOVE 'Y' TO
        NOT-EOF-ENTERED-ACCOUNT-FILE.

```

```

HANDLE-UPDATE.
    MOVE 'N' TO NOT-ACCOUNT-EXIST.
    MOVE ACC-NUMBER TO G-ACCOUNT-NUMBER.

```



```
READ GENERAL-LEDGER-FILE INVALID KEY
  MOVE SPACES TO G-ACCOUNT-NUMBER.
ADD ACCOUNT-VALUE TO G-CURRENT-TOTAL.
REWRITE GENERAL-LEDGER-RECORD INVALID KEY
MOVE 'Y' TO NOT-ACCOUNT-EXIST.
  MOVE 'Y' TO UPDATE-CODE.
IF NOT ACCOUNT-NOT-EXIST
  REWRITE ENTERED-ACCOUNT-RECORD.
```

CLEAN-REVENUE-AND-EXP-SCREEN.

```
DISPLAY REVERSE-VIDEO WITH NO ADVANCING.
DISPLAY SCREEN(22,17) WITH NO ADVANCING.
DISPLAY 'CLEAN REVENUES AND EXPENSE PROCESSING'
  WITH NO ADVANCING.
DISPLAY EXIT-REVERSE WITH NO ADVANCING.
```

CLEAN-REVENUES-AND-EXPENSE.

```
OPEN INPUT-OUTPUT GENERAL-LEDGER-FILE.
MOVE 0 TO TOTAL-INCOME.
  MOVE 'N' TO NOT-EOF-GENERAL-LEDGER-FILE.
PERFORM REVENUES-EXPENSE-HANDLE UNTIL
  EOF-GENERAL-LEDGER-FILE.
PERFORM INCOME-HANDLE.
CLOSE GENERAL-LEDGER-FILE.
```

REVENUES-EXPENSE-HANDLE.

```
READ GENERAL-LEDGER-FILE NEXT AT END
  MOVE 'Y' TO NOT-EOF-GENERAL-LEDGER-FILE.
IF NOT EOF-GENERAL-LEDGER-FILE
IF G-ACCOUNT-NUMBER GREATER THAN 299999
  ADD G-CURRENT-TOTAL TO G-YEAR-TO-NOW-TOTAL
  ADD G-CURRENT-TOTAL TO TOTAL-INCOME
  MOVE 0 TO G-CURRENT-TOTAL.
REWRITE GENERAL-LEDGER-RECORD INVALID KEY
  MOVE 'Y' TO NOT-EOF-GENERAL-LEDGER-FILE.
```

INCOME-HANDLE.

```
MOVE 243200 TO G-ACCOUNT-NUMBER.
READ GENERAL-LEDGER-FILE INVALID PERFORM
  ACCOUNT-NOT-EXIST-MESSAGE.
ADD TOTAL-INCOME TO G-CURRENT-TOTAL.
REWRITE GENERAL-LEDGER-RECORD INVALID PERFORM
  ACCOUNT-NOT-EXIST-MESSAGE.
```

ACCOUNT-NOT-EXIST-MESSAGE.

```
DISPLAY SCREEN(22,17) WITH NO ADVANCING.
DISPLAY ' ACCOUNT NOT EXIST ' WITH NO ADVANCING.
```

CLEAN-OLD-ENTRIES-SCREEN.

```
DISPLAY REVERSE-VIDEO WITH NO ADVANCING.
DISPLAY SCREEN(22,23) WITH NO ADVANCING.
DISPLAY 'CLEAN OLD ENTRIES PROCESSING'
  WITH NO ADVANCING.
DISPLAY EXIT-REVERSE WITH NO ADVANCING.
```

CLEAN-OLD-ENTRIES.

```
PERFORM CHECK-UPDATE-INDICATOR.  
IF NOT NOT-UPDATE  
    PERFORM PUT-TO-TEMP-FILE  
    PERFORM APPEND-TO-PRE-ENTERED-ACC-FILE  
ELSE  
    PERFORM CLEAN-OLD-ENTRY-ERROR-MESSAGE.  
    DISPLAY SCREEN(22,23) WITH NO ADVANCING.  
    DISPLAY ' ' WITH NO ADVANCING.
```

CHECK-UPDATE-INDICATOR.

```
OPEN INPUT ENTERED-ACCOUNT-FILE.  
MOVE 'N' TO NOT-UPDATE-YET.  
MOVE 'N' TO NOT-EOF-ENTERED-ACCOUNT-FILE.  
READ ENTERED-ACCOUNT-FILE AT END MOVE 'Y' TO  
    NOT-EOF-ENTERED-ACCOUNT-FILE.  
PERFORM CHECK-UPDATE UNTIL EOF-ENTERED-ACCOUNT-FILE.  
CLOSE ENTERED-ACCOUNT-FILE.
```

CHECK-UPDATE.

```
IF UPDATE-CODE EQUAL 'N' MOVE 'Y' TO NOT-UPDATE-YET.  
READ ENTERED-ACCOUNT-FILE AT END MOVE 'Y' TO  
    NOT-EOF-ENTERED-ACCOUNT-FILE.
```

PUT-TO-TEMP-FILE.

```
OPEN INPUT PRE-ENTERED-ACCOUNT-FILE  
    INPUT ENTERED-ACCOUNT-FILE  
    OUTPUT TEMP-ENTERED-ACCOUNT-FILE.  
MOVE 'N' TO NOT-EOF-PRE-ENTERED-ACC-FILE.  
READ PRE-ENTERED-ACCOUNT-FILE AT END  
    MOVE 'Y' TO NOT-EOF-PRE-ENTERED-ACC-FILE.  
PERFORM PUT-TO-TEMP-FILE-PROCESS UNTIL  
    EOF-PRE-ENTERED-ACC-FILE.  
MOVE 'N' TO NOT-EOF-ENTERED-ACCOUNT-FILE.  
READ ENTERED-ACCOUNT-FILE AT END  
    MOVE 'Y' TO NOT-EOF-ENTERED-ACCOUNT-FILE.  
PERFORM ADD-OLD-ENTRIES UNTIL  
    EOF-ENTERED-ACCOUNT-FILE.  
CLOSE PRE-ENTERED-ACCOUNT-FILE  
    ENTERED-ACCOUNT-FILE  
    TEMP-ENTERED-ACCOUNT-FILE.
```

PUT-TO-TEMP-FILE-PROCESS.

```
WRITE TEMP-ENTERED-ACCOUNT-RECORD FROM  
    PRE-ENTERED-ACCOUNT-RECORD.  
READ PRE-ENTERED-ACCOUNT-FILE AT END  
    MOVE 'Y' TO NOT-EOF-PRE-ENTERED-ACC-FILE.
```

ADD-OLD-ENTRIES.

```
WRITE TEMP-ENTERED-ACCOUNT-RECORD FROM  
    ENTERED-ACCOUNT-RECORD.  
READ ENTERED-ACCOUNT-FILE AT END  
    MOVE 'Y' TO NOT-EOF-ENTERED-ACCOUNT-FILE.
```

APPEND-TO-PRE-ENTERED-ACC-FILE.

```
OPEN INPUT TEMP-ENTERED-ACCOUNT-FILE
      OUTPUT PRE-ENTERED-ACCOUNT-FILE.
MOVE 'N' TO NOT-EOF-TEMP-FILE.
READ TEMP-ENTERED-ACCOUNT-FILE AT END MOVE 'Y' TO
      NOT-EOF-TEMP-FILE.
PERFORM PUT-BACK-TO-PRE-FILE UNTIL EOF-TEMP-FILE.
CLOSE TEMP-ENTERED-ACCOUNT-FILE
      PRE-ENTERED-ACCOUNT-FILE.
OPEN OUTPUT ENTERED-ACCOUNT-FILE
      TEMP-ENTERED-ACCOUNT-FILE.
CLOSE TEMP-ENTERED-ACCOUNT-FILE
      ENTERED-ACCOUNT-FILE.
```

```
PUT-BACK-TO-PRE-FILE.
WRITE PRE-ENTERED-ACCOUNT-RECORD FROM
      TEMP-ENTERED-ACCOUNT-RECORD.
READ TEMP-ENTERED-ACCOUNT-FILE AT END MOVE 'Y' TO
      NOT-EOF-TEMP-FILE.
```

```
CLEAN-OLD-ENTRY-ERROR-MESSAGE.
DISPLAY REVERSE-VIDEO WITH NO ADVANCING.
DISPLAY SCREEN(22,15) WITH NO ADVANCING.
DISPLAY 'ACCOUNT NOT UPDATE YET. NO CLEAN MADE'
      WITH NO ADVANCING.
DISPLAY EXIT-REVERSE WITH NO ADVANCING.
MOVE 0 TO TIMER.
PERFORM WAIT-FOR-A-WHILE UNTIL TIMER EQUAL 40000.
DISPLAY SCREEN(22,15) WITH NO ADVANCING.
DISPLAY '
      WITH NO ADVANCING.
```

```
WAIT-FOR-A-WHILE.
ADD 1 TO TIMER.
```

```
END-OF-YEAR-PROCESS-SCREEN.
DISPLAY REVERSE-VIDEO WITH NO ADVANCING.
DISPLAY SCREEN(22,17) WITH NO ADVANCING.
DISPLAY 'END OF YEAR PROCESSING'
      WITH NO ADVANCING.
DISPLAY EXIT-REVERSE WITH NO ADVANCING.
```

```
END-OF-YEAR-PROCESS.
PERFORM CHECK-UPDATE-INDICATOR.
IF NOT NOT-UPDATE PERFORM
      END-OF-YEAR-ACCOUNT-HANDLE
ELSE
      PERFORM END-OF-YEAR-ERROR-MESSAGE.
```

```
END-OF-YEAR-ERROR-MESSAGE.
DISPLAY REVERSE-VIDEO WITH NO ADVANCING.
DISPLAY SCREEN(22,17) WITH NO ADVANCING.
DISPLAY 'ENTERED ACCOUNT NOT UPDATE YET '
      WITH NO ADVANCING.
DISPLAY EXIT-REVERSE WITH NO ADVANCING.
```

END-OF-YEAR-ACCOUNT-HANDLE.

```
MOVE 'N' TO NOT-EOF-GENERAL-LEDGER-FILE.
PERFORM CLEAN-REVENUES-AND-EXPENSE.
OPEN INPUT-OUTPUT GENERAL-LEDGER-FILE.
MOVE 'N' TO NOT-EOF-GENERAL-LEDGER-FILE.
  READ GENERAL-LEDGER-FILE NEXT AT END MOVE
  'Y' TO NOT-EOF-GENERAL-LEDGER-FILE.
PERFORM COPY-AMOUNT-TO-PRE-AMOUNT UNTIL
  EOF-GENERAL-LEDGER-FILE.
CLOSE GENERAL-LEDGER-FILE.
OPEN OUTPUT ENTERED-ACCOUNT-FILE
  PRE-ENTERED-ACCOUNT-FILE.
CLOSE ENTERED-ACCOUNT-FILE
  PRE-ENTERED-ACCOUNT-FILE.
DISPLAY SCREEN(22,17) WITH NO ADVANCING.
DISPLAY ' ' WITH NO ADVANCING.
```

COPY-AMOUNT-TO-PRE-AMOUNT.

```
ADD G-CURRENT-TOTAL TO G-YEAR-TO-NOW-TOTAL.
MOVE G-YEAR-TO-NOW-TOTAL TO G-PREVIOUS-YEAR-TOTAL.
MOVE 0 TO G-YEAR-TO-NOW-TOTAL.
REWRITE GENERAL-LEDGER-RECORD INVALID KEY
  MOVE 'Y' TO NOT-EOF-GENERAL-LEDGER-FILE.
READ GENERAL-LEDGER-FILE NEXT AT END MOVE 'Y' TO
  NOT-EOF-GENERAL-LEDGER-FILE.
```

*-----
 IDENTIFICATION DIVISION.
 *-----

PROGRAM-ID.
 MAINTN
 AUTHOR.
 CCW
 DATE-WRITTEN.
 8-MAR-1984

*-----
 ENVIRONMENT DIVISION.
 *-----

INPUT-OUTPUT SECTION.
 FILE-CONTROL.

 SELECT GENERAL-LEDGER-FILE
 ASSIGN TO DSK
 ORGANIZATION IS INDEXED
 ACCESS MODE IS DYNAMIC
 RECORD KEY IS G-ACCOUNT-NUMBER
 RECORDING MODE IS ASCII.

*-----
 DATA DIVISION.
 *-----

FILE SECTION.

FD GENERAL-LEDGER-FILE,
 BLOCK CONTAINS 128 RECORDS,
 VALUE OF ID IS "GENFILINX".

01 GENERAL-LEDGER-RECORD.
 05 G-ACCOUNT-NUMBER PIC 9(6).
 05 G-ACCOUNT-NAME PIC X(30).
 05 G-ACCOUNT-TYPE PIC X.
 05 G-CURRENT-TOTAL PIC S99999999V99.
 05 G-YEAR-TO-NOW-TOTAL PIC S99999999V99.
 05 G-PREVIOUS-YEAR-TOTAL PIC S99999999V99.

WORKING-STORAGE SECTION.

01 TEST-VALUE-A.
 05 FRONT-A PIC X.
 05 BEHIND-A PIC X(9).

 01 TEST-LENGTH-C.
 05 FRONT-C PIC X(6).
 05 BEHIND-C PIC X(7).

 01 TEST-LENGTH-E.
 05 FRONT-E PIC X(30).
 05 BEHIND-E PIC X(5).

01 ADD-INFORMATION.	
05 ADD-ACC-NUMBER	PIC X(6).
05 ADD-ACC-NAME	PIC X(30).
05 ADD-ACC-TYPE	PIC X.
01 LEDGER-MAINTAIN-TYPE	PIC X.
01 CONFIRM-VALUE	PIC X VALUE 'N'.
01 RECORD-NOT-EXIST	PIC X.
01 DELETE-ACC-NUMBER	PIC X(6).
01 MODIFY-ACC-NUMBER	PIC X(6).
01 MODIFY-ACCOUNT-NAME	PIC X(30).
01 TIMER	PIC 9999.
77 TRY-AGAIN-VALUE	PIC X VALUE 'Y'.
88 NOT-TRY-AGAIN	VALUE 'N'.
77 EXIT-MAINTAIN-ACC-OR-NOT	PIC X VALUE 'N'.
88 EXIT-MAINTAIN-ACCOUNT	VALUE 'Y'.
77 TAKE-TYPE	PIC X VALUE 'N'.
88 TAKE-TYPE-OK	VALUE 'Y'.
77 END-GET-MODIFY-INFO-OR-NOT	PIC X VALUE 'N'.
88 END-GET-MODIFY-INFO	VALUE 'Y'.
77 END-GET-ADD-INFO-OR-NOT	PIC X VALUE 'N'.
88 END-GET-ADD-INFO	VALUE 'Y'.
77 MORE-DELETE-VALUE	PIC X VALUE 'Y'.
88 NO-MORE-DELETE	VALUE 'N'.
77 DELETE-NOT-CONFIRM	PIC X VALUE 'N'.
88 DELETE-CONFIRM	VALUE 'Y'.
77 MORE-ADD-VALUE	PIC X VALUE 'Y'.
88 NO-MORE-ADD	VALUE 'N'.
77 MORE-MODIFY-VALUE	PIC X VALUE 'Y'.
88 NO-MORE-MODIFY	VALUE 'N'.
77 ACC-NUMBER-ERROR-OR-NOT	PIC X VALUE 'N'.
88 ACC-NUMBER-ERROR	VALUE 'Y'.
77 END-GET-DELETE-INFO-OR-NOT	PIC X VALUE 'N'.
88 END-GET-DELETE-INFO	VALUE 'Y'.
77 ACC-NAME-ERROR-OR-NOT	PIC X VALUE 'N'.
88 ACC-NAME-ERROR	VALUE 'Y'.

77 ACC-TYPE-ERROR-OR-NOT
88 ACC-TYPE-ERROR

PIC X VALUE 'N'.
VALUE 'Y'.

*-----
LINKAGE SECTION.
*-----

01 SCREEN-TABLE.
 05 SCREEN-ROWS OCCURS 24 TIMES.
 10 SCREEN PIC X(4)
 USAGE IS DISPLAY-7
 OCCURS 80 TIMES.

01 REVERSE-VIDEO PIC XX DISPLAY-7.

01 EXIT-REVERSE PIC XX DISPLAY-7.

01 CLEAR-SCREEN PIC XX DISPLAY-7.

01 RING-BELL PIC X DISPLAY-7.

*-----
PROCEDURE DIVISION USING SCREEN-TABLE
 CLEAR-SCREEN RING-BELL
 REVERSE-VIDEO EXIT-REVERSE.
*-----

MAIN.

 MOVE 'N' TO EXIT-MAINTAIN-ACC-OR-NOT.
 OPEN INPUT-OUTPUT GENERAL-LEDGER-FILE.
 PERFORM MAINTAIN-INFO-PROCESS UNTIL
 EXIT-MAINTAIN-ACCOUNT.
 CLOSE GENERAL-LEDGER-FILE.

EXIT PROGRAM.

MAINTAIN-INFO-PROCESS.

 MOVE ' ' TO LEDGER-MAINTAIN-TYPE.
 PERFORM MAINTAIN-INFO-PROCESS-SCREEN.
 MOVE 'N' TO TAKE-TYPE.
 PERFORM TAKE-TYPE-OF-INFO-MAINTAIN
 UNTIL TAKE-TYPE-OK.
 IF LEDGER-MAINTAIN-TYPE = '1'
 PERFORM ADD-G-L-RECORD-SCREEN
 MOVE 'Y' TO MORE-ADD-VALUE
 PERFORM ADD-GENERAL-LEDGER-RECORD
 UNTIL NO-MORE-ADD
 ELSE IF LEDGER-MAINTAIN-TYPE = '2'
 PERFORM DEL-GENERAL-LEDGER-SCREEN
 MOVE 'Y' TO MORE-DELETE-VALUE
 PERFORM DEL-GENERAL-LEDGER-RECORD
 UNTIL NO-MORE-DELETE
 ELSE IF LEDGER-MAINTAIN-TYPE = '3'
 PERFORM MODIFY-GENERAL-LEDGER-SCREEN
 MOVE 'Y' TO MORE-MODIFY-VALUE
 PERFORM MODIFY-GENERAL-LEDGER-RECORD
 UNTIL NO-MORE-MODIFY
 ELSE IF LEDGER-MAINTAIN-TYPE = '*'

```

      MOVE 'Y' TO EXIT-MAINTAIN-ACC-OR-NOT.
      DISPLAY CLEAR-SCREEN WITH NO ADVANCING.

```

MAINTAIN-INFO-PROCESS-SCREEN.

```

      DISPLAY CLEAR-SCREEN WITH NO ADVANCING.
      DISPLAY REVERSE-VIDEO WITH NO ADVANCING.
      DISPLAY SCREEN(3,35) WITH NO ADVANCING.
      DISPLAY 'SCREEN - 1.1.3' WITH NO ADVANCING.
      DISPLAY SCREEN(4,23) WITH NO ADVANCING.
      DISPLAY
      'SELELT GENERAL-LEDGER MAINTAIN TYPE '
                                WITH NO ADVANCING.
      DISPLAY EXIT-REVERSE WITH NO ADVANCING.
      DISPLAY SCREEN (6,30) WITH NO ADVANCING.
      DISPLAY 'ENTER SELECTION: _'
                                WITH NO ADVANCING.
      DISPLAY SCREEN(10,20) WITH NO ADVANCING.
      DISPLAY
      '===== '
                                WITH NO ADVANCING.
      DISPLAY SCREEN(12,20) WITH NO ADVANCING.
      DISPLAY
      ' * : FOR EXIT-GENERAL-LEDGER-MAINTAIN '
                                WITH NO ADVANCING.
      DISPLAY SCREEN(14,20) WITH NO ADVANCING.
      DISPLAY
      ' 1 : FOR ADD-GENERAL-LEDGER-RECORD '
                                WITH NO ADVANCING.
      DISPLAY SCREEN(16,20) WITH NO ADVANCING.
      DISPLAY
      ' 2 : FOR DELETE-GENERAL-LEDGER-RECORD '
                                WITH NO ADVANCING.
      DISPLAY SCREEN(18,20) WITH NO ADVANCING.
      DISPLAY
      ' 3 : FOR MODIFY-GENERAL-LEDGER-RECORD '
                                WITH NO ADVANCING.
      DISPLAY SCREEN(20,20) WITH NO ADVANCING.
      DISPLAY
      '===== '
                                WITH NO ADVANCING.

```

TAKE-TYPE-OF-INFO-MAINTAIN.

```

      MOVE 'N' TO TAKE-TYPE.
      DISPLAY RING-BELL WITH NO ADVANCING.
      DISPLAY SCREEN(6,47) WITH NO ADVANCING.
      ACCEPT TEST-VALUE-A.
      IF BEHIND-A NOT EQUAL SPACES PERFORM
                                ERROR-HANDLE-A
      ELSE MOVE FRONT-A TO LEDGER-MAINTAIN-TYPE.
      IF LEDGER-MAINTAIN-TYPE EQUAL '1' OR
      EQUAL '2' OR EQUAL '3' OR EQUAL '*'
      MOVE 'Y' TO TAKE-TYPE
      ELSE
      PERFORM ERROR-HANDLE-A.

```

ERROR-HANDLE-A.


```

DISPLAY SCREEN(22,7) WITH NO ADVANCING.
DISPLAY REVERSE-VIDEO WITH NO ADVANCING.
DISPLAY 'ERROR MESSAGE:.' WITH NO ADVANCING.
DISPLAY EXIT-REVERSE WITH NO ADVANCING.
DISPLAY
'INVALID RESPONSE . PLEASE REENTER'
      WITH NO ADVANCING.
DISPLAY SCREEN(6,47) WITH NO ADVANCING.
DISPLAY ' _ ' WITH NO ADVANCING.
DISPLAY SCREEN(6,47) WITH NO ADVANCING.
DISPLAY RING-BELL WITH NO ADVANCING.
PERFORM TAKE-TYPE-OF-INFO-MAINTAIN.

```

ADD-GENERAL-LEDGER-RECORD.

```

MOVE 'N' TO END-GET-ADD-INFO-OR-NOT.
MOVE 'N' TO ACC-NUMBER-ERROR-OR-NOT.
MOVE 'Y' TO TRY-AGAIN-VALUE.
PERFORM GET-VALID-ADD-ACC-RECORD UNTIL
      END-GET-ADD-INFO.
IF NOT ACC-NUMBER-ERROR
PERFORM GET-ADD-CONFIRM-PROCESS.
IF NOT ACC-NUMBER-ERROR
IF CONFIRM-VALUE = 'Y'
  PERFORM ADD-LEDGER-ACCOUNT-PROCESS
ELSE
  PERFORM DISPLAY-NO-ADD-MESSAGE.
PERFORM ASK-ADD-MORE.
IF MORE-ADD-VALUE = 'Y' PERFORM
  ADD-GENERAL-LEDGER-RECORD
ELSE
  MOVE 'N' TO MORE-ADD-VALUE.

```

GET-VALID-ADD-ACC-RECORD.

```

MOVE 'N' TO ACC-NUMBER-ERROR-OR-NOT.
MOVE 'N' TO TRY-AGAIN-VALUE.
PERFORM GET-ADD-ACC-NUMBER.
IF ACC-NUMBER-ERROR-OR-NOT = 'N' PERFORM
  CHECK-RECORD-NOT-EXIST.
IF ACC-NUMBER-ERROR PERFORM ASK-ADD-TRY-AGAIN
ELSE PERFORM GET-VALID-ADD-ACC-NAME
  PERFORM GET-VALID-ADD-ACC-TYPE.
IF TRY-AGAIN-VALUE = 'Y' PERFORM
  GET-VALID-ADD-ACC-RECORD.
IF ACC-NUMBER-ERROR-OR-NOT = 'Y' OR
  NOT-TRY-AGAIN
  MOVE 'Y' TO END-GET-ADD-INFO-OR-NOT.

```

ADD-G-L-RECORD-SCREEN.

```

DISPLAY CLEAR-SCREEN WITH NO ADVANCING.
DISPLAY REVERSE-VIDEO WITH NO ADVANCING.
DISPLAY SCREEN(3,31) WITH NO ADVANCING.
DISPLAY ' SCREEN - 1.1.3.1'
      WITH NO ADVANCING.
DISPLAY SCREEN(4,26) WITH NO ADVANCING.
DISPLAY ' ADD GENERAL LEDGER RECORD '

```

```

                                WITH NO ADVANCING.
DISPLAY EXIT-REVERSE WITH NO ADVANCING.
DISPLAY SCREEN (8,20) WITH NO ADVANCING.
DISPLAY 'ENTER ACCOUNT-NUMBER : _____'
                                WITH NO ADVANCING.
DISPLAY SCREEN(11,20) WITH NO ADVANCING.
DISPLAY
'ENTER ACCOUNT-NAME      : _____'
                                WITH NO ADVANCING.
DISPLAY SCREEN(14,20) WITH NO ADVANCING.
DISPLAY 'ENTER ACCOUNT-TYPE : _ '
                                WITH NO ADVANCING.
DISPLAY SCREEN(17,20) WITH NO ADVANCING.
DISPLAY 'ENTER ACCOUNT-VALUE : _ '
                                WITH NO ADVANCING.

```

GET-ADD-ACC-NUMBER.

```

DISPLAY SCREEN(11,43) WITH NO ADVANCING.
DISPLAY ' _____ '
                                WITH NO ADVANCING.
PERFORM ERASE-ERROR-MESSAGE.
MOVE 'N' TO TRY-AGAIN-VALUE.
IF ACC-NUMBER-ERROR PERFORM
                                DISPLAY-ERROR-MESSAGE.
MOVE 'N' TO ACC-NUMBER-ERROR-OR-NOT.
MOVE SPACES TO TEST-LENGTH-C.
DISPLAY RING-BELL WITH NO ADVANCING.
DISPLAY SCREEN(8,43) WITH NO ADVANCING.
DISPLAY ' _____ ' WITH NO ADVANCING.
DISPLAY SCREEN(8,43) WITH NO ADVANCING.
ACCEPT TEST-LENGTH-C.
    IF BEHIND-C NOT EQUAL SPACES
        MOVE 'Y' TO ACC-NUMBER-ERROR-OR-NOT.
MOVE FRONT-C TO ADD-ACC-NUMBER.
IF ADD-ACC-NUMBER IS NOT NUMERIC
    MOVE 'Y' TO ACC-NUMBER-ERROR-OR-NOT.
IF ADD-ACC-NUMBER LESS THAN 100000 OR GREATER
    THAN 500000 MOVE 'Y' TO
    ACC-NUMBER-ERROR-OR-NOT.

```

CHECK-RECORD-NOT-EXIST.

```

MOVE 'N' TO RECORD-NOT-EXIST.
MOVE ADD-ACC-NUMBER TO G-ACCOUNT-NUMBER.
READ GENERAL-LEDGER-FILE INVALID KEY
MOVE 'Y' TO RECORD-NOT-EXIST.
IF RECORD-NOT-EXIST = 'N' MOVE 'Y' TO
    ACC-NUMBER-ERROR-OR-NOT.

```

GET-VALID-ADD-ACC-NAME.

```

IF ACC-NUMBER-ERROR PERFORM
    DISPLAY-ERROR-MESSAGE.
MOVE 'N' TO ACC-NUMBER-ERROR-OR-NOT.
MOVE SPACES TO TEST-LENGTH-E.
DISPLAY RING-BELL WITH NO ADVANCING.
DISPLAY SCREEN(11,43) WITH NO ADVANCING.
DISPLAY ' _____ '

```

```

                                WITH NO ADVANCING.
DISPLAY SCREEN(11,43) WITH NO ADVANCING.
ACCEPT TEST-LENGTH-E.
IF BEHIND-E NOT EQUAL SPACES
    MOVE 'Y' TO ACC-NUMBER-ERROR-OR-NOT
    PERFORM GET-VALID-ADD-ACC-NAME.
IF FRONT-E IS NOT ALPHABETIC
    MOVE 'Y' TO ACC-NUMBER-ERROR-OR-NOT
    PERFORM GET-VALID-ADD-ACC-NAME.
IF NOT ACC-NUMBER-ERROR MOVE FRONT-E TO
    ADD-ACC-NAME.

```

GET-VALID-ADD-ACC-TYPE.

```

MOVE 'N' TO ACC-NUMBER-ERROR-OR-NOT.
MOVE SPACES TO TEST-VALUE-A.
DISPLAY RING-BELL WITH NO ADVANCING.
DISPLAY SCREEN(14,43) WITH NO ADVANCING.
DISPLAY ' _ ' WITH NO ADVANCING.
DISPLAY SCREEN(14,43) WITH NO ADVANCING.
ACCEPT TEST-VALUE-A.
IF BEHIND-A NOT EQUAL SPACES
    MOVE 'Y' TO ACC-NUMBER-ERROR-OR-NOT
    PERFORM GET-VALID-ADD-ACC-TYPE
ELSE MOVE FRONT-A TO ADD-ACC-TYPE.
    IF ADD-ACC-TYPE NOT EQUAL '0' AND NOT
        EQUAL '1' AND NOT EQUAL '2'
        AND NOT EQUAL '3'
        MOVE 'Y' TO ACC-NUMBER-ERROR-OR-NOT
        PERFORM GET-VALID-ADD-ACC-TYPE.
IF NOT ACC-NUMBER-ERROR MOVE FRONT-A TO
    G-ACCOUNT-TYPE.

```

ADD-LEDGER-ACCOUNT-PROCESS.

```

MOVE SPACES TO GENERAL-LEDGER-RECORD.
MOVE ADD-ACC-NAME TO G-ACCOUNT-NAME.
MOVE ADD-ACC-TYPE TO G-ACCOUNT-TYPE.
MOVE ADD-ACC-NUMBER TO G-ACCOUNT-NUMBER.
MOVE ZEROS TO G-YEAR-TO-NOW-TOTAL.
MOVE ZEROS TO G-PREVIOUS-YEAR-TOTAL.
MOVE ZEROS TO G-CURRENT-TOTAL.
WRITE GENERAL-LEDGER-RECORD INVALID KEY
DISPLAY SCREEN(21,1) WITH NO ADVANCING
DISPLAY
'ADD A NEW GENERAL LEDGER RECORD
    WITH NO ADVANCING.

```

ASK-ADD-MORE.

```

MOVE SPACES TO TEST-VALUE-A.
DISPLAY RING-BELL WITH NO ADVANCING.
DISPLAY SCREEN (20,19) WITH NO ADVANCING.
DISPLAY ' ADD MORE ? (Y OR N) '
    WITH NO ADVANCING.
DISPLAY SCREEN(20,41) WITH NO ADVANCING.
ACCEPT TEST-VALUE-A.
IF BEHIND-A IS NOT EQUAL SPACES
    PERFORM ADD-MORE-ERROR-HANDLE.

```

```

MOVE FRONT-A TO MORE-ADD-VALUE.
IF MORE-ADD-VALUE NOT EQUAL 'N' AND
MORE-ADD-VALUE NOT EQUAL 'Y'
PERFORM ADD-MORE-ERROR-HANDLE.

```

ADD-MORE-ERROR-HANDLE.

```

MOVE SPACES TO TEST-VALUE-A.
DISPLAY SCREEN(22,5) WITH NO ADVANCING.
DISPLAY REVERSE-VIDEO WITH NO ADVANCING.
DISPLAY 'ERROR MESSAGE:.' WITH NO ADVANCING.
DISPLAY EXIT-REVERSE WITH NO ADVANCING.
DISPLAY SCREEN(23,5) WITH NO ADVANCING.
DISPLAY
'INVALID RESPONSE . PLEASE REENTER'
WITH NO ADVANCING.
DISPLAY RING-BELL WITH NO ADVANCING.
DISPLAY SCREEN(20,31) WITH NO ADVANCING.
DISPLAY '_ ' WITH NO ADVANCING.
DISPLAY SCREEN(20,32) WITH NO ADVANCING.
ACCEPT TEST-VALUE-A.
IF BEHIND-A IS NOT EQUAL SPACES
PERFORM ADD-MORE-ERROR-HANDLE.
MOVE FRONT-A TO MORE-ADD-VALUE.
IF MORE-ADD-VALUE NOT EQUAL 'N' AND
MORE-ADD-VALUE NOT EQUAL 'Y'
PERFORM ADD-MORE-ERROR-HANDLE.

```

ASK-ADD-TRY-AGAIN.

```

MOVE 'Y' TO TRY-AGAIN-VALUE.
MOVE SPACES TO TEST-VALUE-A.
DISPLAY REVERSE-VIDEO WITH NO ADVANCING.
DISPLAY SCREEN(23,1) WITH NO ADVANCING.
DISPLAY ' ACCOUNT ERROR :: '
WITH NO ADVANCING.
DISPLAY SCREEN(23,21) WITH NO ADVANCING.
DISPLAY EXIT-REVERSE WITH NO ADVANCING.
DISPLAY
' WANT TRY AGAIN? ENTER Y OR N :: _
WITH NO ADVANCING.
DISPLAY SCREEN(23,55) WITH NO ADVANCING.
ACCEPT TEST-VALUE-A.
IF BEHIND-A NOT EQUAL SPACES PERFORM
ASK-ADD-TRY-AGAIN
ELSE MOVE FRONT-A TO TRY-AGAIN-VALUE.
IF TRY-AGAIN-VALUE NOT EQUAL 'Y' AND NOT
EQUAL 'N' PERFORM ASK-ADD-TRY-AGAIN.

```

DISPLAY-NO-ADD-MESSAGE.

```

MOVE 0 TO TIMER.
DISPLAY SCREEN(20,19) WITH NO ADVANCING.
DISPLAY 'NO ADDITION MADE'
WITH NO ADVANCING.
PERFORM WAIT-FOR-A-WHILE UNTIL
TIMER EQUAL 9999.

```

WAIT-FOR-A-WHILE.

ADD 1 TO TIMER.

DISPLAY-ERROR-MESSAGE.

DISPLAY SCREEN(22,1) WITH NO ADVANCING.
 DISPLAY REVERSE-VIDEO WITH NO ADVANCING.
 DISPLAY 'ERROR MESSAGE:.' WITH NO ADVANCING.
 DISPLAY EXIT-REVERSE WITH NO ADVANCING.
 DISPLAY SCREEN(23,1) WITH NO ADVANCING.
 DISPLAY
 ' INVALID ENTERED DATA. PLEASE REENTER ' WITH NO ADVANCING.

ERASE-ERROR-MESSAGE.

DISPLAY SCREEN(14,43) WITH NO ADVANCING.
 DISPLAY ' ' WITH NO ADVANCING.
 DISPLAY SCREEN(17,43) WITH NO ADVANCING.
 DISPLAY ' ' WITH NO ADVANCING.
 DISPLAY SCREEN(20,1) WITH NO ADVANCING.
 DISPLAY
 ' ' WITH NO ADVANCING.
 DISPLAY SCREEN(22,1) WITH NO ADVANCING.
 DISPLAY
 ' ' WITH NO ADVANCING.
 DISPLAY SCREEN(23,1) WITH NO ADVANCING.
 DISPLAY
 ' ' WITH NO ADVANCING.

GET-ADD-CONFIRM-PROCESS.

DISPLAY SCREEN(11,43) WITH NO ADVANCING.
 DISPLAY ADD-ACC-NAME WITH NO ADVANCING.
 DISPLAY SCREEN(14,43) WITH NO ADVANCING.
 DISPLAY G-ACCOUNT-TYPE WITH NO ADVANCING.
 DISPLAY SCREEN(17,43) WITH NO ADVANCING.
 DISPLAY G-CURRENT-TOTAL WITH NO ADVANCING.
 DISPLAY SCREEN(22,1) WITH NO ADVANCING.
 DISPLAY REVERSE-VIDEO WITH NO ADVANCING.
 DISPLAY 'ACTION CONFIRM :.' WITH NO ADVANCING.
 DISPLAY EXIT-REVERSE WITH NO ADVANCING.
 PERFORM GET-ADD-CONFIRM-VALUE.

GET-ADD-CONFIRM-VALUE.

DISPLAY SCREEN(23,1) WITH NO ADVANCING.
 DISPLAY
 'IS THIS RECORD TO BE ADDED? ENTER Y OR N :. _
 WITH NO ADVANCING.
 DISPLAY SCREEN(23,45) WITH NO ADVANCING.
 DISPLAY RING-BELL WITH NO ADVANCING.
 ACCEPT TEST-VALUE-A.
 IF BEHIND-A NOT EQUAL SPACES PERFORM
 GET-ADD-CONFIRM-VALUE
 ELSE MOVE FRONT-A TO CONFIRM-VALUE.
 IF CONFIRM-VALUE NOT EQUAL 'Y' AND NOT
 EQUAL 'N'


```
IF NOT ACC-NUMBER-ERROR OR NOT-TRY-AGAIN
MOVE 'Y' TO END-GET-DELETE-INFO-OR-NOT.
```

GET-VALID-ACC-NUMBER.

```
PERFORM ERASE-DELETE-ERROR-MESSAGE.
MOVE 'N' TO TRY-AGAIN-VALUE.
IF ACC-NUMBER-ERROR PERFORM
    DISPLAY-ERROR-MESSAGE.
MOVE 'N' TO ACC-NUMBER-ERROR-OR-NOT.
MOVE SPACES TO TEST-LENGTH-C.
DISPLAY RING-BELL WITH NO ADVANCING.
DISPLAY SCREEN(8,43) WITH NO ADVANCING.
DISPLAY '_____' WITH NO ADVANCING.
DISPLAY SCREEN(8,43) WITH NO ADVANCING.
ACCEPT TEST-LENGTH-C.
    IF BEHIND-C NOT EQUAL SPACES
        MOVE 'Y' TO ACC-NUMBER-ERROR-OR-NOT.
MOVE FRONT-C TO DELETE-ACC-NUMBER.
IF DELETE-ACC-NUMBER IS NOT NUMERIC
    MOVE 'Y' TO ACC-NUMBER-ERROR-OR-NOT.
IF DELETE-ACC-NUMBER LESS THAN 100000 OR
GREATER THAN 500000 MOVE 'Y' TO
ACC-NUMBER-ERROR-OR-NOT.
```

CHECK-RECORD-EXIST.

```
MOVE DELETE-ACC-NUMBER TO G-ACCOUNT-NUMBER.
READ GENERAL-LEDGER-FILE INVALID KEY
MOVE 'Y' TO ACC-NUMBER-ERROR-OR-NOT.
```

CHECK-CURRENT-VALUE-ZERO.

```
IF G-CURRENT-TOTAL NOT EQUAL ZERO
MOVE 'Y' TO ACC-NUMBER-ERROR-OR-NOT.
```

GET-CONFIRM-PROCESS.

```
DISPLAY SCREEN(11,43) WITH NO ADVANCING.
DISPLAY G-ACCOUNT-NAME WITH NO ADVANCING.
DISPLAY SCREEN(14,43) WITH NO ADVANCING.
DISPLAY G-ACCOUNT-TYPE WITH NO ADVANCING.
DISPLAY SCREEN(17,43) WITH NO ADVANCING.
DISPLAY G-CURRENT-TOTAL WITH NO ADVANCING.
DISPLAY SCREEN(22,1) WITH NO ADVANCING.
DISPLAY REVERSE-VIDEO WITH NO ADVANCING.
DISPLAY 'ACTION CONFIRM ::' WITH NO ADVANCING.
DISPLAY EXIT-REVERSE WITH NO ADVANCING.
PERFORM GET-CONFIRM-VALUE.
```

GET-CONFIRM-VALUE.

```
DISPLAY SCREEN(23,1) WITH NO ADVANCING.
DISPLAY
'IS THIS RECORD TO BE DELETED? ENTER Y OR N :: _
    WITH NO ADVANCING.
DISPLAY SCREEN(23,47) WITH NO ADVANCING.
ACCEPT TEST-VALUE-A.
IF BEHIND-A NOT EQUAL SPACES PERFORM
    GET-CONFIRM-VALUE
```

```
ELSE MOVE FRONT-A TO CONFIRM-VALUE.
IF CONFIRM-VALUE NOT EQUAL 'Y' AND
    NOT EQUAL 'N'
PERFORM GET-CONFIRM-VALUE.
```

DELETE-LEDGER-ACCOUNT-PROCESS.

```
DELETE GENERAL-LEDGER-FILE INVALID KEY
DISPLAY 'RECORD NOT FOUND CAN NOT BE DELETE'
    WITH NO ADVANCING.
```

DISPLAY-NO-DELETE-MESSAGE.

```
MOVE 0 TO TIMER.
DISPLAY SCREEN(20,19) WITH NO ADVANCING.
DISPLAY 'NO DELETION MADE' WITH NO ADVANCING.
PERFORM WAIT-FOR-A-WHILE UNTIL
    TIMER EQUAL 9999.
```

ASK-DELETE-MORE.

```
MOVE SPACES TO TEST-VALUE-A.
DISPLAY SCREEN (20,19) WITH NO ADVANCING.
DISPLAY RING-BELL WITH NO ADVANCING.
DISPLAY 'DELETE MORE? (Y OR N) '
    WITH NO ADVANCING.
DISPLAY '
    WITH NO ADVANCING.
DISPLAY SCREEN(20,41) WITH NO ADVANCING.
ACCEPT TEST-VALUE-A.
IF BEHIND-A IS NOT EQUAL SPACES
    PERFORM DELETE-MORE-ERROR-HANDLE.
MOVE FRONT-A TO MORE-DELETE-VALUE.
IF MORE-DELETE-VALUE NOT EQUAL 'N' AND
    MORE-DELETE-VALUE NOT EQUAL 'Y'
    PERFORM DELETE-MORE-ERROR-HANDLE.
```

DELETE-MORE-ERROR-HANDLE.

```
MOVE SPACES TO TEST-VALUE-A.
DISPLAY SCREEN(22,1) WITH NO ADVANCING.
DISPLAY REVERSE-VIDEO WITH NO ADVANCING.
DISPLAY ' ERROR MESSAGE:: '
    WITH NO ADVANCING.
DISPLAY EXIT-REVERSE WITH NO ADVANCING.
DISPLAY SCREEN(23,5) WITH NO ADVANCING.
DISPLAY 'INVALID RESPONSE . PLEASE REENTER
    WITH NO ADVANCING.
DISPLAY RING-BELL WITH NO ADVANCING.
DISPLAY SCREEN(20,41) WITH NO ADVANCING.
DISPLAY '
    WITH NO ADVANCING.
DISPLAY SCREEN(20,41) WITH NO ADVANCING.
ACCEPT TEST-VALUE-A.
IF BEHIND-A IS NOT EQUAL SPACES
    PERFORM DELETE-MORE-ERROR-HANDLE.
MOVE FRONT-A TO MORE-DELETE-VALUE.
IF MORE-DELETE-VALUE NOT EQUAL 'N' AND
    MORE-DELETE-VALUE NOT EQUAL 'Y'
    PERFORM DELETE-MORE-ERROR-HANDLE.
DISPLAY SCREEN(22,1) WITH NO ADVANCING.
```


DISPLAY

WITH NO ADVANCING.
 DISPLAY SCREEN(23,1) WITH NO ADVANCING.
 DISPLAY

WITH NO ADVANCING.

ASK-TRY-AGAIN.

MOVE 'Y' TO TRY-AGAIN-VALUE.
 MOVE SPACES TO TEST-VALUE-A.
 DISPLAY SCREEN(23,1) WITH NO ADVANCING.
 DISPLAY REVERSE-VIDEO WITH NO ADVANCING.
 DISPLAY ' RECORD NOT EXIST ::'

WITH NO ADVANCING.

DISPLAY SCREEN(23,21) WITH NO ADVANCING.
 DISPLAY EXIT-REVERSE WITH NO ADVANCING.
 DISPLAY ' WANT TRY AGAIN . ENTER Y OR N :: _

WITH NO ADVANCING.

DISPLAY SCREEN(23,55) WITH NO ADVANCING.
 ACCEPT TEST-VALUE-A.

IF BEHIND-A NOT EQUAL SPACES PERFORM
 ASK-TRY-AGAIN

ELSE MOVE FRONT-A TO TRY-AGAIN-VALUE.
 IF TRY-AGAIN-VALUE NOT EQUAL 'Y' AND
 NOT EQUAL 'N' PERFORM ASK-TRY-AGAIN.

ERASE-DELETE-ERROR-MESSAGE.

DISPLAY SCREEN(11,43) WITH NO ADVANCING.
 DISPLAY

WITH NO ADVANCING.

DISPLAY SCREEN(14,43) WITH NO ADVANCING.
 DISPLAY ' ' WITH NO ADVANCING.

DISPLAY SCREEN(17,43) WITH NO ADVANCING.
 DISPLAY ' ' WITH NO ADVANCING.

DISPLAY SCREEN(20,1) WITH NO ADVANCING.
 DISPLAY ' ' WITH NO ADVANCING.

WITH NO ADVANCING.

DISPLAY SCREEN(22,1) WITH NO ADVANCING.
 DISPLAY ' ' WITH NO ADVANCING.

WITH NO ADVANCING.

DISPLAY SCREEN(23,1) WITH NO ADVANCING.
 DISPLAY ' ' WITH NO ADVANCING.

WITH NO ADVANCING.

MODIFY-GENERAL-LEDGER-RECORD.

MOVE 'N' TO END-GET-MODIFY-INFO-OR-NOT.
 MOVE 'N' TO ACC-NUMBER-ERROR-OR-NOT.
 MOVE 'Y' TO TRY-AGAIN-VALUE.
 PERFORM GET-VALID-MODIFY-ACC-RECORD UNTIL
 END-GET-MODIFY-INFO.
 IF NOT ACC-NUMBER-ERROR
 PERFORM GET-MODIFY-CONFIRM-PROCESS.
 IF NOT ACC-NUMBER-ERROR AND
 CONFIRM-VALUE = 'Y'

```

IF CONFIRM-VALUE = 'Y'
  PERFORM MODIFY-LEDGER-ACCOUNT-PROCESS
ELSE
  PERFORM DISPLAY-NO-MODIFY-MESSAGE 20 TIMES.
  PERFORM ASK-MODIFY-MORE.
  IF MORE-MODIFY-VALUE = 'Y' PERFORM
    MODIFY-GENERAL-LEDGER-RECORD
  ELSE
    MOVE 'N' TO MORE-MODIFY-VALUE.

```

MODIFY-GENERAL-LEDGER-SCREEN.

```

DISPLAY CLEAR-SCREEN WITH NO ADVANCING.
DISPLAY REVERSE-VIDEO WITH NO ADVANCING.
DISPLAY SCREEN(3,32) WITH NO ADVANCING.
DISPLAY 'SCREEN - 1.1.3.3'
  WITH NO ADVANCING.
DISPLAY SCREEN(4,26) WITH NO ADVANCING.
DISPLAY 'MODIFY GENERAL LEDGER RECORD'
  WITH NO ADVANCING.
DISPLAY EXIT-REVERSE WITH NO ADVANCING.
DISPLAY SCREEN (8,20) WITH NO ADVANCING.
DISPLAY 'ENTER ACCOUNT-NUMBER : _____'
  WITH NO ADVANCING.
DISPLAY SCREEN(11,20) WITH NO ADVANCING.
DISPLAY 'ENTER ACCOUNT-NAME      :
  WITH NO ADVANCING.
DISPLAY SCREEN(14,20) WITH NO ADVANCING.
DISPLAY 'ENTER ACCOUNT-TYPE     :
  WITH NO ADVANCING.
DISPLAY SCREEN(17,20) WITH NO ADVANCING.
DISPLAY 'ENTER ACCOUNT-VALUE    :
  WITH NO ADVANCING.

```

GET-VALID-MODIFY-ACC-RECORD.

```

MOVE 'N' TO ACC-NUMBER-ERROR-OR-NOT.
MOVE 'N' TO TRY-AGAIN-VALUE.
PERFORM GET-VALID-MODIFY-ACC-NUMBER.
IF NOT ACC-NUMBER-ERROR
  PERFORM CHECK-MODIFY-RECORD-EXIST.
  IF ACC-NUMBER-ERROR PERFORM
    ASK-MODIFY-TRY-AGAIN.
  IF TRY-AGAIN-VALUE = 'Y' PERFORM
    GET-VALID-MODIFY-ACC-RECORD
  ELSE
    IF NOT ACC-NUMBER-ERROR PERFORM
      MODIFY-ACTION.
  IF NOT ACC-NUMBER-ERROR OR NOT-TRY-AGAIN
    MOVE 'Y' TO END-GET-MODIFY-INFO-OR-NOT.

```

GET-VALID-MODIFY-ACC-NUMBER.

```

PERFORM ERASE-DELETE-ERROR-MESSAGE.
MOVE 'N' TO TRY-AGAIN-VALUE.
IF ACC-NUMBER-ERROR PERFORM
  DISPLAY-ERROR-MESSAGE.
MOVE 'N' TO ACC-NUMBER-ERROR-OR-NOT.
MOVE SPACES TO TEST-LENGTH-C.

```

```

DISPLAY RING-BELL WITH NO ADVANCING.
DISPLAY SCREEN(8,43) WITH NO ADVANCING.
DISPLAY ' _____ ' WITH NO ADVANCING.
DISPLAY SCREEN(8,43) WITH NO ADVANCING.
ACCEPT TEST-LENGTH-C.
  IF BEHIND-C NOT EQUAL SPACES
    MOVE 'Y' TO ACC-NUMBER-ERROR-OR-NOT.
MOVE FRONT-C TO MODIFY-ACC-NUMBER.
IF MODIFY-ACC-NUMBER IS NOT NUMERIC
  MOVE 'Y' TO ACC-NUMBER-ERROR-OR-NOT.
IF MODIFY-ACC-NUMBER LESS THAN 10000 OR
  GREATER THAN 50000 MOVE 'Y' TO
  ACC-NUMBER-ERROR-OR-NOT.

```

CHECK-MODIFY-RECORD-EXIST.

```

MOVE MODIFY-ACC-NUMBER TO G-ACCOUNT-NUMBER.
READ GENERAL-LEDGER-FILE INVALID KEY
MOVE 'Y' TO ACC-NUMBER-ERROR-OR-NOT.

```

MODIFY-ACTION.

```

PERFORM SHOW-RECORD-CONTENTS.
DISPLAY SCREEN(20,1) WITH NO ADVANCING.
DISPLAY ' NEW ACCOUNT NAME? '
  WITH NO ADVANCING.
DISPLAY ' _____ '
  WITH NO ADVANCING.
DISPLAY ' _____ ' WITH NO ADVANCING.
DISPLAY SCREEN(20,22) WITH NO ADVANCING.
ACCEPT TEST-LENGTH-E.
IF BEHIND-E NOT EQUAL SPACES
  DISPLAY SCREEN(23,1) WITH NO ADVANCING
  DISPLAY REVERSE-VIDEO WITH NO ADVANCING
  DISPLAY ' ACCOUNT NAME ERROR ::'
    WITH NO ADVANCING
  DISPLAY EXIT-REVERSE WITH NO ADVANCING
  PERFORM MODIFY-ACTION.
IF FRONT-E IS NOT ALPHABETIC
  DISPLAY SCREEN(23,1) WITH NO ADVANCING
  DISPLAY REVERSE-VIDEO WITH NO ADVANCING
  DISPLAY ' ACCOUNT NAME ERROR ::'
    WITH NO ADVANCING
  DISPLAY EXIT-REVERSE WITH NO ADVANCING
  PERFORM MODIFY-ACTION.
MOVE FRONT-E TO MODIFY-ACCOUNT-NAME.
PERFORM SHOW-RECORD-CONTENTS.
DISPLAY SCREEN(20,1) WITH NO ADVANCING.
DISPLAY ' _____ '
  WITH NO ADVANCING.
DISPLAY ' _____ '
  WITH NO ADVANCING.
DISPLAY ' RECORD CONTENT AFTER MODIFICATION '
  WITH NO ADVANCING.
DISPLAY ' _____ '
  WITH NO ADVANCING.

```

SHOW-RECORD-CONTENTS.

```

DISPLAY SCREEN (8,43) WITH NO ADVANCING.

```

```

    DISPLAY G-ACCOUNT-NUMBER WITH NO ADVANCING.
    DISPLAY SCREEN(11,44) WITH NO ADVANCING.
    IF MODIFY-ACCOUNT-NAME EQUAL SPACES
        DISPLAY G-ACCOUNT-NAME
    ELSE
        DISPLAY MODIFY-ACCOUNT-NAME WITH NO ADVANCING.
        DISPLAY SCREEN(14,44) WITH NO ADVANCING.
        DISPLAY G-ACCOUNT-TYPE WITH NO ADVANCING.
        DISPLAY SCREEN(17,44) WITH NO ADVANCING.
        DISPLAY G-CURRENT-TOTAL WITH NO ADVANCING.

```

MODIFY-LEDGER-ACCOUNT-PROCESS.

```

    MOVE MODIFY-ACCOUNT-NAME TO G-ACCOUNT-NAME.
    REWRITE GENERAL-LEDGER-RECORD INVALID KEY
    MOVE 'Y' TO ACC-NUMBER-ERROR-OR-NOT.

```

DISPLAY-NO-MODIFY-MESSAGE.

```

    DISPLAY SCREEN(20,10) WITH NO ADVANCING.
    DISPLAY 'NO MODIFY MADE'
                                     WITH NO ADVANCING.

```

ASK-MODIFY-MORE.

```

    MOVE SPACES TO TEST-VALUE-A.
    DISPLAY SCREEN (20,10) WITH NO ADVANCING.
    DISPLAY RING-BELL WITH NO ADVANCING.
    DISPLAY 'MODIFY MORE? (Y OR N) '
                                     WITH NO ADVANCING.
    DISPLAY '
                                     '
                                     WITH NO ADVANCING.
    DISPLAY SCREEN(20,32) WITH NO ADVANCING.
    ACCEPT TEST-VALUE-A.
    IF BEHIND-A IS NOT EQUAL SPACES
        PERFORM MODIFY-MORE-ERROR-HANDLE.
    MOVE FRONT-A TO MORE-MODIFY-VALUE.
    IF MORE-MODIFY-VALUE NOT EQUAL 'N' AND
        MORE-MODIFY-VALUE NOT EQUAL 'Y'
        PERFORM MODIFY-MORE-ERROR-HANDLE.

```

MODIFY-MORE-ERROR-HANDLE.

```

    MOVE SPACES TO TEST-VALUE-A.
    DISPLAY SCREEN(22,5) WITH NO ADVANCING.
    DISPLAY REVERSE-VIDEO WITH NO ADVANCING.
    DISPLAY 'ERROR MESSAGE: ' WITH NO ADVANCING.
    DISPLAY EXIT-REVERSE WITH NO ADVANCING.
    DISPLAY SCREEN(23,1) WITH NO ADVANCING.
    DISPLAY 'INVALID RESPONSE . PLEASE REENTER'
                                     WITH NO ADVANCING.
    DISPLAY RING-BELL WITH NO ADVANCING.
    DISPLAY SCREEN(20,31) WITH NO ADVANCING.
    DISPLAY ' _ ' WITH NO ADVANCING.
    DISPLAY SCREEN(20,32) WITH NO ADVANCING.
    ACCEPT TEST-VALUE-A.
    IF BEHIND-A IS NOT EQUAL SPACES
        PERFORM MODIFY-MORE-ERROR-HANDLE.
    MOVE FRONT-A TO MORE-MODIFY-VALUE.
    IF MORE-MODIFY-VALUE NOT EQUAL 'N' AND

```

```

        MORE-MODIFY-VALUE NOT EQUAL 'Y'
        PERFORM MODIFY-MORE-ERROR-HANDLE.
    DISPLAY SCREEN(22,1) WITH NO ADVANCING.
    DISPLAY '
                                WITH NO ADVANCING.
    DISPLAY SCREEN(23,1) WITH NO ADVANCING.
    DISPLAY '
                                WITH NO ADVANCING.

```

ASK-MODIFY-TRY-AGAIN.

```

    MOVE 'Y' TO TRY-AGAIN-VALUE.
    MOVE SPACES TO TEST-VALUE-A.
    DISPLAY SCREEN(23,1) WITH NO ADVANCING.
    DISPLAY REVERSE-VIDEO WITH NO ADVANCING.
    DISPLAY ' ACCOUNT ERROR ::'
                                WITH NO ADVANCING.
    DISPLAY SCREEN(23,21)WITH NO ADVANCING.
    DISPLAY EXIT-REVERSE WITH NO ADVANCING.
    DISPLAY ' WANT TRY AGAIN . ENTER Y OR N :: _
                                WITH NO ADVANCING.
    DISPLAY SCREEN(23,55) WITH NO ADVANCING.
    ACCEPT TEST-VALUE-A.
    IF BEHIND-A NOT EQUAL SPACES PERFORM
        ASK-MODIFY-TRY-AGAIN
    ELSE MOVE FRONT-A TO TRY-AGAIN-VALUE.
    IF TRY-AGAIN-VALUE NOT EQUAL 'Y' AND NOT
        EQUAL 'N' PERFORM ASK-MODIFY-TRY-AGAIN.

```

GET-MODIFY-CONFIRM-PROCESS.

```

    DISPLAY SCREEN(22,1) WITH NO ADVANCING.
    DISPLAY REVERSE-VIDEO WITH NO ADVANCING.
    DISPLAY ' MODIFY CONFIRM ::'
                                WITH NO ADVANCING.
    DISPLAY SCREEN(23,21)WITH NO ADVANCING.
    DISPLAY EXIT-REVERSE WITH NO ADVANCING.
    DISPLAY SCREEN(23,1) WITH NO ADVANCING.
    DISPLAY
    'IS THIS RECORD TO BE MODIFY? ENTER Y OR N :: _
                                WITH NO ADVANCING.
    DISPLAY SCREEN(23,46) WITH NO ADVANCING.
    ACCEPT TEST-VALUE-A.
    IF BEHIND-A NOT EQUAL SPACES PERFORM
        GET-MODIFY-CONFIRM-PROCESS
    ELSE MOVE FRONT-A TO CONFIRM-VALUE.
    IF CONFIRM-VALUE NOT EQUAL 'Y' AND NOT EQUAL 'N'
    PERFORM GET-MODIFY-CONFIRM-PROCESS.

```

*-----
 IDENTIFICATION DIVISION.
 *-----

PROGRAM-ID.
 MTAN
 AUTHOR.
 CCW
 DATE-WRITTEN.
 8-MAR-1984

*-----
 ENVIRONMENT DIVISION.
 *-----

INPUT-OUTPUT SECTION.
 FILE-CONTROL.

 SELECT ENTERED-ACCOUNT-FILE,
 ASSIGN TO DSK,
 RECORDING MODE IS ASCII.

 SELECT TEMP-ENTERED-ACCOUNT-FILE,
 ASSIGN TO DSK,
 RECORDING MODE IS ASCII.

 SELECT PRE-ENTERED-ACCOUNT-FILE,
 ASSIGN TO DSK,
 RECORDING MODE IS ASCII.

 SELECT GENERAL-LEDGER-FILE
 ASSIGN TO DSK
 ORGANIZATION IS INDEXED
 ACCESS MODE IS DYNAMIC
 RECORD KEY IS G-ACCOUNT-NUMBER
 RECORDING MODE IS ASCII.

*-----
 DATA DIVISION.
 *-----

FILE SECTION.

FD GENERAL-LEDGER-FILE,
 BLOCK CONTAINS 128 RECORDS,
 VALUE OF ID IS "GENFILINX".

01 GENERAL-LEDGER-RECORD.
 05 G-ACCOUNT-NUMBER PIC 9(6).
 05 G-ACCOUNT-NAME PIC X(30).
 05 G-ACCOUNT-TYPE PIC X.
 05 G-CURRENT-TOTAL PIC S99999999V99.
 05 G-YEAR-TO-NOW-TOTAL PIC S99999999V99.
 05 G-PREVIOUS-YEAR-TOTAL PIC S99999999V99.

FD ENTERED-ACCOUNT-FILE,
 BLOCK CONTAINS 128 RECORDS,

LABEL RECORDS ARE STANDARD,
VALUE OF ID IS 'ACCONFIL'.

01 ENTERED-ACCOUNT-RECORD.
05 ENTRY-NO PIC 999999.
05 ACC-NO.
08 CATAGORY-NO PIC 9.
08 SUBCATAGORY-NO PIC 99999.
05 ACC-NAME PIC X(30).
05 SOURCE-CODE PIC 9.
05 ACCOUNT-VALUE PIC S99999999V99.
05 DATE-OF-ENTRY PIC XXXXXX.
05 UPDATE-CODE PIC X.

FD TEMP-ENTERED-ACCOUNT-FILE
BLOCK CONTAINS 128 RECORDS,
LABEL RECORDS ARE STANDARD,
VALUE OF ID IS 'TEMPACTMP'.

01 TEMP-ENTERED-ACCOUNT-RECORD.
05 T-ENTRY-NO PIC 999999.
05 T-ACC-NO.
08 T-CATAGORY-NO PIC 9.
08 T-SUBCATAGORY-NO PIC 99999.
05 T-ACC-NAME PIC X(30).
05 T-SOURCE-CODE PIC 9.
05 T-ACCOUNT-VALUE PIC S99999999V99.
05 T-DATE-OF-ENTRY PIC XXXXXX.
05 T-UPDATE-CODE PIC X.

FD PRE-ENTERED-ACCOUNT-FILE,
BLOCK CONTAINS 128 RECORDS,
LABEL RECORDS ARE STANDARD,
VALUE OF ID IS 'PREVI FIL'.

01 PRE-ENTERED-ACCOUNT-RECORD.
05 PRE-ENTRY-NO PIC 999999.
05 PRE-ACC-NO.
08 PRE-CATAGORY-NO PIC 9.
08 PRE-SUBCATAGORY-NO PIC 99999.
05 PRE-ACC-NAME PIC X(30).
05 PRE-SOURCE-CODE PIC 9.
05 PRE-ACCOUNT-VALUE PIC S99999999V99.
05 PRE-DATE-OF-ENTRY PIC XXXXXX.
05 PRE-UPDATE-CODE PIC X.

WORKING-STORAGE SECTION.

01 SCREEN-SYS-DATE.
05 SCREEN-SYS-YEAR PIC X(2).
05 FILLER PIC X(3) VALUE ' / '.
05 SCREEN-SYS-MONTH PIC X(2).
05 FILLER PIC X(3) VALUE ' / '.
05 SCREEN-SYS-DAY PIC X(2).

01 SYS-DATE.

05	SYS-YEAR	PIC	X(2).
05	SYS-MONTH	PIC	X(2).
05	SYS-DAY	PIC	X(2).
01	TEST-VALUE-A.		
05	FRONT-A	PIC	X.
05	BEHIND-A	PIC	X(9).
01	TEST-LENGTH-B.		
05	FRONT-B	PIC	X.
05	BEHIND-B	PIC	X(12).
01	TEST-LENGTH-C.		
05	FRONT-C	PIC	X(6).
05	BEHIND-C	PIC	X(7).
01	TEST-LENGTH-D	PIC	S9(11)V99.
01	ENTRY-NUMBER	PIC	9(6).
01	MAINTAIN-TYPE	PIC	X.
01	UPDATE-CODE-INDICATOR	PIC	X.
77	END-OF-ENTRY	PIC	X(3) VALUE 'N'.
88	END-OF-INPUT		VALUE 'Y'.
77	MORE-ENTRY	PIC	X VALUE 'N'.
88	MORE-TO-ENTER		VALUE 'Y'.
77	END-ENTERED-ACC-FILE-OR-NOT	PIC	X VALUE 'N'.
88	END-ENTERED-ACC-FILE		VALUE 'Y'.
77	CLEAR-FILE-OK	PIC	X VALUE 'N'.
88	CLEAR-OK		VALUE 'Y'.
77	TAKE-TYPE	PIC	X VALUE 'N'.
88	TAKE-TYPE-OK		VALUE 'Y'.
77	EXIT-MAINTAIN-ACC-OR-NOT	PIC	X VALUE 'N'.
88	EXIT-MAINTAIN-ACCOUNT		VALUE 'Y'.
77	ADJUSTMENT-MODE-OR-NOT	PIC	X VALUE 'N'.
88	ADJUSTMENT-MODE		VALUE 'Y'.
77	TRY-AGAIN-OR-NOT	PIC	X VALUE 'N'.
88	TRY-AGAIN		VALUE 'Y'.
77	END-PRE-ENTRY-FILE-OR-NOT	PIC	X VALUE 'N'.
88	END-PRE-ENTRY-FILE		VALUE 'Y'.
LINKAGE SECTION.			
01	SCREEN-TABLE.		
05	SCREEN-ROWS	OCCURS	24 TIMES.
10	SCREEN	PIC	X(4)

USAGE IS DISPLAY-7
OCCURS 80 TIMES.

01 REVERSE-VIDEO PIC XX DISPLAY-7.
01 EXIT-REVERSE PIC XX DISPLAY-7.
01 CLEAR-SCREEN PIC XX DISPLAY-7.
01 RING-BELL PIC X DISPLAY-7.

*-----
PROCEDURE DIVISION USING SCREEN-TABLE CLEAR-SCREEN
RING-BELL REVERSE-VIDEO EXIT-REVERSE.
*-----

MAIN.

MOVE 'N' TO EXIT-MAINTAIN-ACC-OR-NOT.
PERFORM ACCOUNT-MAINTAIN-PROCESS UNTIL
EXIT-MAINTAIN-ACCOUNT.

EXIT PROGRAM.

ACCOUNT-MAINTAIN-PROCESS.

MOVE 'N' TO TAKE-TYPE.
PERFORM SELECT-MAINTAIN-TYPE-SCREEN.
PERFORM TAKE-TYPE-OF-MAINTAIN UNTIL
TAKE-TYPE-OK.
IF MAINTAIN-TYPE = '1'
PERFORM ENTER-ACCOUNT-ENTRIES
ELSE IF MAINTAIN-TYPE = '2'
PERFORM ADJUSTMENT-ACCOUNT-ENTRIES
ELSE IF MAINTAIN-TYPE = '3'
PERFORM MAINTAIN-ACCOUNT-INFORMATION
ELSE IF MAINTAIN-TYPE = '*'
MOVE 'Y' TO EXIT-MAINTAIN-ACC-OR-NOT
DISPLAY CLEAR-SCREEN WITH NO ADVANCING.

SELECT-MAINTAIN-TYPE-SCREEN.

DISPLAY CLEAR-SCREEN WITH NO ADVANCING.
DISPLAY REVERSE-VIDEO WITH NO ADVANCING.
DISPLAY SCREEN(1,29) WITH NO ADVANCING.
DISPLAY 'SCREEN - 1.1'
WITH NO ADVANCING.
DISPLAY SCREEN(2,22) WITH NO ADVANCING.
DISPLAY 'ACCOUNT MAINTAIN SELECTION'
WITH NO ADVANCING.
DISPLAY EXIT-REVERSE WITH NO ADVANCING.
DISPLAY SCREEN (4,17) WITH NO ADVANCING.
DISPLAY
'SELECT ONE OF THE FOLLOWING TYPE TO PROCESS'
WITH NO ADVANCING.
DISPLAY SCREEN (5,31) WITH NO ADVANCING.
DISPLAY 'ENTER SELECTION: _'
WITH NO ADVANCING.
DISPLAY SCREEN(7,16) WITH NO ADVANCING.
DISPLAY
'====='


```
OPEN INPUT TEMP-ENTERED-ACCOUNT-FILE
OUTPUT ENTERED-ACCOUNT-FILE.
MOVE 'N' TO CLEAR-FILE-OK.
READ TEMP-ENTERED-ACCOUNT-FILE AT END
MOVE 'Y' TO CLEAR-FILE-OK.
PERFORM CLEAR-TEMP-FILE UNTIL CLEAR-OK.
PERFORM DELETE-TEMP-FILE.
CLOSE ENTERED-ACCOUNT-FILE.
```

ADJUSTMENT-ACCOUNT-ENTRIES.

```
MOVE 'N' TO END-OF-ENTRY.
MOVE 'Y' TO ADJUSTMENT-MODE-OR-NOT.
PERFORM ENTER-ACCOUNT-ENTRIES UNTIL
END-OF-INPUT.
MOVE 'N' TO ADJUSTMENT-MODE-OR-NOT.
```

MAINTAIN-ACCOUNT-INFORMATION.

```
CALL 'MAINTN' USING SCREEN-TABLE
CLEAR-SCREEN RING-BELL
REVERSE-VIDEO EXIT-REVERSE.
```

OPEN-FILES-1.

```
OPEN INPUT ENTERED-ACCOUNT-FILE.
OPEN OUTPUT TEMP-ENTERED-ACCOUNT-FILE.
OPEN INPUT GENERAL-LEDGER-FILE.
```

CLOSE-FILES-1.

```
CLOSE ENTERED-ACCOUNT-FILE.
CLOSE TEMP-ENTERED-ACCOUNT-FILE.
CLOSE GENERAL-LEDGER-FILE.
```

APPEND-TO-ACCOUNT-FILE.

```
ACCEPT SYS-DATE FROM DATE.
MOVE SYS-YEAR TO SCREEN-SYS-YEAR.
MOVE SYS-MONTH TO SCREEN-SYS-MONTH.
MOVE SYS-DAY TO SCREEN-SYS-DAY.
MOVE SYS-DATE TO DATE-OF-ENTRY.
MOVE 'N' TO END-ENTERED-ACC-FILE-OR-NOT.
MOVE 0 TO ENTRY-NUMBER.
READ ENTERED-ACCOUNT-FILE AT END MOVE
'Y' TO END-ENTERED-ACC-FILE-OR-NOT.
PERFORM OBTAIN-LAST-ENTRY-NUMBER
UNTIL END-ENTERED-ACC-FILE.
MOVE ENTRY-NO TO ENTRY-NUMBER.
IF ENTRY-NUMBER EQUAL 0
MOVE 'N' TO END-PRE-ENTRY-FILE-OR-NOT
ELSE MOVE 'Y' TO END-PRE-ENTRY-FILE-OR-NOT.
PERFORM OBTAIN-PRE-ENTRY-NO UNTIL
END-PRE-ENTRY-FILE.
ADD 1 TO ENTRY-NUMBER.
MOVE ENTRY-NUMBER TO ENTRY-NO.
IF ADJUSTMENT-MODE MOVE '4' TO SOURCE-CODE.
PERFORM SCREEN-DISPLAY.
PERFORM INPUT-DATA UNTIL END-OF-INPUT.
```

OBTAIN-PRE-ENTRY-NO.

```

OPEN INPUT PRE-ENTERED-ACCOUNT-FILE.
PERFORM OBTAIN-PRE-LAST-ENTRY-NO UNTIL
    END-PRE-ENTRY-FILE.
MOVE PRE-ENTRY-NO TO ENTRY-NUMBER.
CLOSE PRE-ENTERED-ACCOUNT-FILE.

```

```

OBTAIN-PRE-LAST-ENTRY-NO.
  READ PRE-ENTERED-ACCOUNT-FILE AT END
  MOVE 'Y' TO END-PRE-ENTRY-FILE-OR-NOT.

```

```

OBTAIN-LAST-ENTRY-NUMBER.
  WRITE TEMP-ENTERED-ACCOUNT-RECORD FROM
    ENTERED-ACCOUNT-RECORD.
  READ ENTERED-ACCOUNT-FILE AT END MOVE
  'Y' TO END-ENTERED-ACC-FILE-OR-NOT.

```

```

SCREEN-DISPLAY.
  DISPLAY CLEAR-SCREEN WITH NO ADVANCING.
  DISPLAY REVERSE-VIDEO WITH NO ADVANCING.
  IF ADJUSTMENT-MODE
    DISPLAY SCREEN(1,30) WITH NO ADVANCING
    DISPLAY 'SCREEN - 1.1.2'
      WITH NO ADVANCING
    DISPLAY SCREEN(2,25) WITH NO ADVANCING
    DISPLAY 'ADJUSTMENT ENTRY PROCESS'
      WITH NO ADVANCING
  ELSE
    DISPLAY SCREEN(1,30) WITH NO ADVANCING
    DISPLAY 'SCREEN - 1.1.1'
      WITH NO ADVANCING
    DISPLAY SCREEN(2,25) WITH NO ADVANCING
    DISPLAY 'ENTER  ENTRY  PROCESS'
      WITH NO ADVANCING.
  DISPLAY EXIT-REVERSE WITH NO ADVANCING.
  DISPLAY SCREEN (6,10) WITH NO ADVANCING.
  DISPLAY
  '===== '
    WITH NO ADVANCING.
  DISPLAY SCREEN (9,10) WITH NO ADVANCING.
  DISPLAY ' DATE ' WITH NO ADVANCING.
  DISPLAY SCREEN-SYS-DATE WITH NO ADVANCING.
  DISPLAY SCREEN(9,42) WITH NO ADVANCING.
  DISPLAY ' SOURCE CODE  _' WITH NO ADVANCING.
  IF ADJUSTMENT-MODE
    DISPLAY SCREEN(9,58) WITH NO ADVANCING
    DISPLAY SOURCE-CODE WITH NO ADVANCING.
    DISPLAY SCREEN(11,10) WITH NO ADVANCING.
    DISPLAY ' ENTRY  NUMBER  ++++++'
      WITH NO ADVANCING.
  DISPLAY SCREEN(13,10) WITH NO ADVANCING.
  DISPLAY ' ACCOUNT NUMBER  _____ '
    WITH NO ADVANCING.
  DISPLAY SCREEN(15,10) WITH NO ADVANCING.
  DISPLAY
  ' ACCOUNT NAME  _____ '
    WITH NO ADVANCING.

```

```
DISPLAY SCREEN(17,10) WITH NO ADVANCING.  
DISPLAY ' ACCOUNT VALUE _____.'  
WITH NO ADVANCING.
```

INPUT-DATA .

```
MOVE 'Y' TO TRY-AGAIN-OR-NOT.  
IF NOT ADJUSTMENT-MODE  
PERFORM OBTAIN-SOURCE-CODE.  
PERFORM OBTAIN-ENTRY-NUMBER.  
PERFORM OBTAIN-ACCOUNT-NUMBER.  
IF TRY-AGAIN  
PERFORM OBTAIN-ACCOUNT-NAME  
PERFORM OBTAIN-ACCOUNT-VALUE  
MOVE UPDATE-CODE-INDICATOR TO UPDATE-CODE  
MOVE SYS-DATE TO DATE-OF-ENTRY  
WRITE TEMP-ENTERED-ACCOUNT-RECORD FROM  
ENTERED-ACCOUNT-RECORD  
ADD 1 TO ENTRY-NUMBER.  
PERFORM MORE-DATA.  
IF MORE-TO-ENTER  
PERFORM NEXT-ENTRY-SCREEN  
ELSE MOVE 'Y' TO END-OF-ENTRY.
```

OBTAIN-SOURCE-CODE.

```
MOVE SPACES TO TEST-LENGTH-B.  
DISPLAY SCREEN(9,58) WITH NO ADVANCING.  
ACCEPT TEST-LENGTH-B.  
IF BEHIND-B NOT EQUAL SPACES PERFORM  
SOURCE-CODE-ERROR-HANDLE.  
IF FRONT-B IS NOT NUMERIC PERFORM  
SOURCE-CODE-ERROR-HANDLE  
ELSE MOVE FRONT-B TO SOURCE-CODE.  
IF SOURCE-CODE GREATER THAN 3  
OR SOURCE-CODE LESS THAN 1  
PERFORM SOURCE-CODE-ERROR-HANDLE.
```

OBTAIN-ENTRY-NUMBER.

```
DISPLAY SCREEN(11,26) WITH NO ADVANCING.  
DISPLAY ENTRY-NUMBER WITH NO ADVANCING.
```

OBTAIN-ACCOUNT-NUMBER.

```
MOVE SPACES TO G-ACCOUNT-TYPE.  
MOVE SPACES TO TEST-LENGTH-C.  
DISPLAY SCREEN(13,26) WITH NO ADVANCING.  
ACCEPT TEST-LENGTH-C.  
IF BEHIND-C NOT EQUAL SPACES PERFORM  
ACCOUNT-NUMBER-ERROR-HANDLE.  
IF TRY-AGAIN  
IF FRONT-C IS NOT NUMERIC PERFORM  
ACCOUNT-NUMBER-ERROR-HANDLE  
ELSE MOVE FRONT-C TO ACC-NO.  
IF TRY-AGAIN  
IF ACC-NO LESS THAN 100000 OR GREATER THAN  
500000 PERFORM ACCOUNT-NUMBER-ERROR-HANDLE.  
MOVE SPACE TO GENERAL-LEDGER-RECORD.  
MOVE ACC-NO TO G-ACCOUNT-NUMBER.
```

```

IF TRY-AGAIN
READ GENERAL-LEDGER-FILE INVALID KEY PERFORM
ACCOUNT-NUMBER-ERROR-HANDLE UNTIL TRY-AGAIN.
IF TRY-AGAIN
IF G-ACCOUNT-TYPE NOT EQUAL '0'
PERFORM ACCOUNT-NUMBER-ERROR-HANDLE.

```

OBTAIN-ACCOUNT-NAME.

```

MOVE G-ACCOUNT-NAME TO ACC-NAME.
DISPLAY SCREEN (15,26) WITH NO ADVANCING.
DISPLAY ACC-NAME WITH NO ADVANCING.

```

OBTAIN-ACCOUNT-VALUE.

```

MOVE SPACES TO TEST-LENGTH-D.
DISPLAY SCREEN(17,26) WITH NO ADVANCING.
ACCEPT TEST-LENGTH-D.
IF TEST-LENGTH-D NOT NUMERIC PERFORM
ACCOUNT-VALUE-ERROR-HANDLE.
IF TEST-LENGTH-D LESS THAN -99999999.99 OR
GREATER THAN 99999999.99
PERFORM ACCOUNT-VALUE-ERROR-HANDLE
ELSE MOVE TEST-LENGTH-D TO ACCOUNT-VALUE.

```

MORE-DATA.

```

MOVE SPACES TO TEST-VALUE-A.
DISPLAY SCREEN (20,10) WITH NO ADVANCING.
DISPLAY RING-BELL WITH NO ADVANCING.
DISPLAY 'ENTER MORE? (Y OR N) _ '
WITH NO ADVANCING.
DISPLAY SCREEN(20,31) WITH NO ADVANCING.
ACCEPT TEST-VALUE-A.
IF BEHIND-A IS NOT EQUAL SPACES
PERFORM MORE-ENTRY-ERROR-HANDLE.
MOVE FRONT-A TO MORE-ENTRY .
IF MORE-ENTRY NOT EQUAL 'N' AND MORE-ENTRY NOT
EQUAL 'Y' PERFORM MORE-ENTRY-ERROR-HANDLE.
MOVE ENTRY-NUMBER TO ENTRY-NO.
DISPLAY SCREEN(22,5) WITH NO ADVANCING.
DISPLAY
'
WITH NO ADVANCING.
DISPLAY SCREEN(23,5) WITH NO ADVANCING.
DISPLAY
'
WITH NO ADVANCING.

```

ACCOUNT-NUMBER-ERROR-HANDLE.

```

MOVE 'Y' TO TRY-AGAIN-OR-NOT.
MOVE SPACES TO TEST-LENGTH-C.
DISPLAY SCREEN(22,5) WITH NO ADVANCING.
DISPLAY REVERSE-VIDEO WITH NO ADVANCING.
DISPLAY 'ERROR MESSAGE: :' WITH NO ADVANCING.
DISPLAY EXIT-REVERSE WITH NO ADVANCING.
DISPLAY SCREEN(23,5) WITH NO ADVANCING.
IF G-ACCOUNT-TYPE EQUAL '0'
DISPLAY

```

```

      'INVALID ACCOUNT NUMBRE .   PLEASE REENTER'
                                WITH NO ADVANCING
ELSE
DISPLAY
      'IT IS NOT CORRECT ACCOUNT PLEASE CHECK AGAIN'
                                WITH NO ADVANCING.
PERFORM ENTER-TRY-AGAIN.
IF TRY-AGAIN PERFORM GET-NEW-ACCOUNT-NUMBER.

GET-NEW-ACCOUNT-NUMBER.
DISPLAY RING-BELL WITH NO ADVANCING.
DISPLAY SCREEN(13,26) WITH NO ADVANCING.
DISPLAY ' _____ 'WITH NO ADVANCING.
DISPLAY SCREEN(13,26) WITH NO ADVANCING.
MOVE SPACES TO TEST-LENGTH-C.
ACCEPT TEST-LENGTH-C.
      IF BEHIND-C NOT EQUAL SPACES PERFORM
        ACCOUNT-NUMBER-ERROR-HANDLE.
IF FRONT-C IS NOT NUMERIC OR NOT TRY-AGAIN
      PERFORM ACCOUNT-NUMBER-ERROR-HANDLE
ELSE MOVE FRONT-C TO ACC-NO.
IF ACC-NO LESS THAN 100000 OR GREATER THAN
      500000 PERFORM ACCOUNT-NUMBER-ERROR-HANDLE.
MOVE SPACES TO G-ACCOUNT-TYPE.
MOVE ACC-NO TO G-ACCOUNT-NUMBER.
READ GENERAL-LEDGER-FILE INVALID KEY PERFORM
      ACCOUNT-NUMBER-ERROR-HANDLE.
IF G-ACCOUNT-TYPE NOT EQUAL '0'
PERFORM ACCOUNT-NUMBER-ERROR-HANDLE.
DISPLAY SCREEN(20,1) WITH NO ADVANCING.
DISPLAY
      '
                                WITH NO ADVANCING.
DISPLAY SCREEN(22,5) WITH NO ADVANCING.
DISPLAY
      '
                                WITH NO ADVANCING.
DISPLAY SCREEN(23,5) WITH NO ADVANCING.
DISPLAY
      '
                                WITH NO ADVANCING.

ENTER-TRY-AGAIN.
      MOVE SPACES TO TEST-VALUE-A.
DISPLAY SCREEN (20,10) WITH NO ADVANCING.
DISPLAY RING-BELL WITH NO ADVANCING.
DISPLAY 'TRY AGAIN ? (Y OR N) '
                                WITH NO ADVANCING.
DISPLAY SCREEN(20,31) WITH NO ADVANCING.
ACCEPT TEST-VALUE-A.
IF BEHIND-A IS NOT EQUAL SPACES
      PERFORM TRY-AGAIN-ERROR-HANDLE
ELSE MOVE FRONT-A TO TRY-AGAIN-OR-NOT.
IF TRY-AGAIN-OR-NOT NOT EQUAL 'N' AND
      TRY-AGAIN-OR-NOT NOT EQUAL 'Y' PERFORM
      TRY-AGAIN-ERROR-HANDLE.

```

DISPLAY SCREEN(20,1) WITH NO ADVANCING.
 DISPLAY

WITH NO ADVANCING.

TRY-AGAIN-ERROR-HANDLE.

MOVE SPACES TO TEST-VALUE-A.
 DISPLAY SCREEN(22,5) WITH NO ADVANCING.
 DISPLAY REVERSE-VIDEO WITH NO ADVANCING.
 DISPLAY 'ERROR MESSAGE::' WITH NO ADVANCING.
 DISPLAY EXIT-REVERSE WITH NO ADVANCING.
 DISPLAY SCREEN(23,5) WITH NO ADVANCING.
 DISPLAY

'INVALID RESPONSE . PLEASE REENTER
 WITH NO ADVANCING.

DISPLAY RING-BELL WITH NO ADVANCING.
 DISPLAY SCREEN(20,31) WITH NO ADVANCING.
 DISPLAY ' WITH NO ADVANCING.
 DISPLAY SCREEN(20,31) WITH NO ADVANCING.
 ACCEPT TEST-VALUE-A.

IF BEHIND-A IS NOT EQUAL SPACES
 PERFORM TRY-AGAIN-ERROR-HANDLE.

MOVE FRONT-A TO TRY-AGAIN-OR-NOT.
 IF TRY-AGAIN-OR-NOT NOT EQUAL 'N' AND
 TRY-AGAIN-OR-NOT NOT EQUAL 'Y'
 PERFORM TRY-AGAIN-ERROR-HANDLE.

DISPLAY SCREEN(22,5) WITH NO ADVANCING.
 DISPLAY

WITH NO ADVANCING.

DISPLAY SCREEN(23,5) WITH NO ADVANCING.
 DISPLAY

WITH NO ADVANCING.

SOURCE-CODE-ERROR-HANDLE.

MOVE SPACES TO TEST-LENGTH-B.
 DISPLAY SCREEN(22,5) WITH NO ADVANCING.
 DISPLAY REVERSE-VIDEO WITH NO ADVANCING.
 DISPLAY 'ERROR MESSAGE::' WITH NO ADVANCING.
 DISPLAY EXIT-REVERSE WITH NO ADVANCING.
 DISPLAY SCREEN(23,5) WITH NO ADVANCING.
 DISPLAY

'INVALID SOURCE CODE . PLEASE REENTER'
 WITH NO ADVANCING.

DISPLAY RING-BELL WITH NO ADVANCING.
 DISPLAY SCREEN(9,58) WITH NO ADVANCING.
 DISPLAY ' WITH NO ADVANCING.
 DISPLAY SCREEN(9,58) WITH NO ADVANCING.
 DISPLAY SCREEN(9,58) WITH NO ADVANCING.
 ACCEPT TEST-LENGTH-B.

IF BEHIND-B NOT EQUAL SPACES PERFORM
 SOURCE-CODE-ERROR-HANDLE.

IF FRONT-B IS NOT NUMERIC PERFORM
 SOURCE-CODE-ERROR-HANDLE
 ELSE MOVE FRONT-B TO SOURCE-CODE.


```

        PERFORM MORE-ENTRY-ERROR-HANDLE.
MOVE FRONT-A TO MORE-ENTRY .
IF MORE-ENTRY NOT EQUAL 'N' AND MORE-ENTRY NOT
    EQUAL 'Y' PERFORM MORE-ENTRY-ERROR-HANDLE.
DISPLAY SCREEN(22,5) WITH NO ADVANCING.
DISPLAY
'
                                WITH NO ADVANCING.
DISPLAY SCREEN(23,5) WITH NO ADVANCING.
DISPLAY
'
                                WITH NO ADVANCING.

```

NEXT-ENTRY-SCREEN.

```

DISPLAY RING-BELL WITH NO ADVANCING.
DISPLAY SCREEN(9,58) WITH NO ADVANCING.
IF NOT ADJUSTMENT-MODE
DISPLAY ' _ ' WITH NO ADVANCING.
DISPLAY SCREEN(11,26) WITH NO ADVANCING.
DISPLAY ' _____ ' WITH NO ADVANCING.
DISPLAY SCREEN(13,26) WITH NO ADVANCING.
DISPLAY ' _____ ' WITH NO ADVANCING.
DISPLAY SCREEN(15,26) WITH NO ADVANCING.
DISPLAY '+++++' WITH NO ADVANCING.
                                WITH NO ADVANCING.
DISPLAY SCREEN(17,26) WITH NO ADVANCING.
DISPLAY ' _____ . ' WITH NO ADVANCING.
DISPLAY SCREEN(18,1) WITH NO ADVANCING.
DISPLAY
'
                                WITH NO ADVANCING.
DISPLAY SCREEN(19,1) WITH NO ADVANCING.
DISPLAY
'
                                WITH NO ADVANCING.
DISPLAY SCREEN(20,1) WITH NO ADVANCING.
DISPLAY
'
                                WITH NO ADVANCING.

```

CLEAR-TEMP-FILE.

```

WRITE ENTERED-ACCOUNT-RECORD FROM
    TEMP-ENTERED-ACCOUNT-RECORD.
READ TEMP-ENTERED-ACCOUNT-FILE AT END
MOVE 'Y' TO CLEAR-FILE-OK.

```

DELETE-TEMP-FILE.

```

CLOSE TEMP-ENTERED-ACCOUNT-FILE.
OPEN OUTPUT TEMP-ENTERED-ACCOUNT-FILE.
CLOSE TEMP-ENTERED-ACCOUNT-FILE.

```

=====
APPENDIX D USER'S MANUAL
=====

USER'S MANUAL

This general ledger system is based on the menu-driven method. Thus, this user's manual contains step-by-step instructions for use of all menus included in this system. With each screen menu in this system, an explanation of the menu's functions is provided for the user. Error recovery caused by the user are also included in this manual.

Before using this system, please reference the appendix d-3 at end of this manual to initialize this system for use. These files need only be created once. After the initialization, user does not need to re-initialize. After the user turns on the terminal and login successful, simply typing in "ledger <CR>" will start the general ledger system. This will reference a PCL (Program Command Language) command which will set the terminal width to be zero and will run the general ledger system. Termination of the general ledger system session will reset the terminal width, i.e. eighty columns. Please reference the appendix d-2 at end of this manual for the using of PCL. The general ledger system will begin by showing the user the main screen, i.e. SCREEN - 1.0. According to the user's selection of menu choice, the proper module is called upon. A flow chart of logical steps for using this system is attached at the end of this manual (appendix d-4). Starting from the main screen i.e. SCREEN - 1.0, the functions of

each screen will be described in hierarchical order. Each screen in this manual has a unique label number to identify it. The label number can be separated into two parts, the last digit and preceding digits. The preceding digits represent the screen number which is calling the current screen. The number chosen of that screen is represented in the last digit. Example: SCREEN - 1.1.2 is evoked by SCREEN - 1.1, which is the '2' function. When describing a screen, the label number will be combined to represent a particular screen for easy reference. The hierarchy of screen is shown in FIGURE D-1.

HIERARCHY OF SCREEN

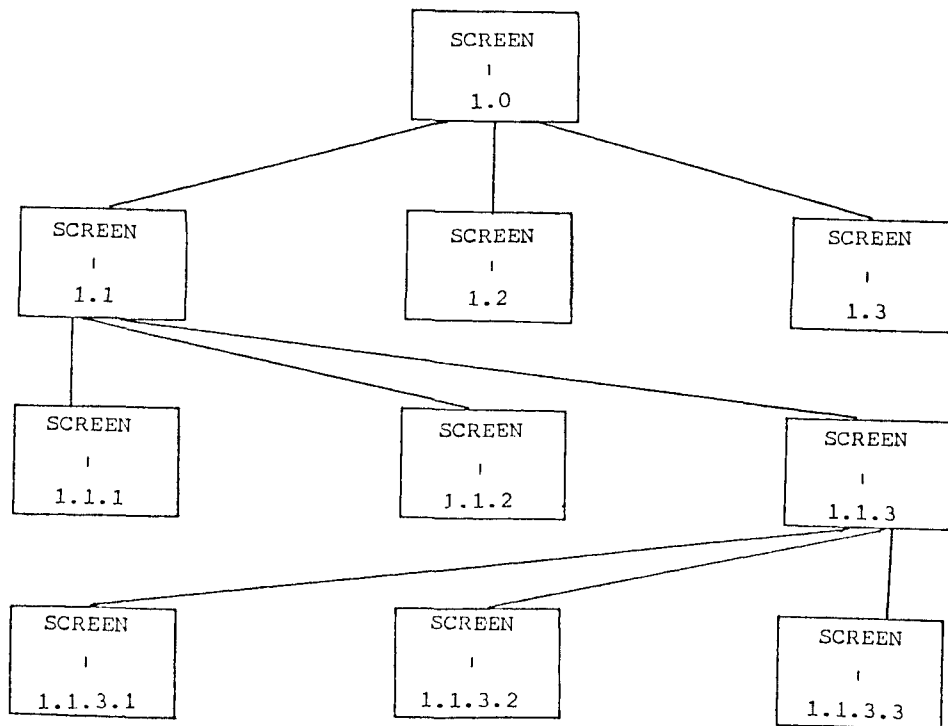


Figure-D

The following notes must be observed when using the general ledger system. First, it is difficult to represent all the displays of the screen which have the same position as on paper. Thus, in this manual, the screen with the # sign is used to represent those places which are shared positions with other information. The messages shown on the # signs will be explained separately with each screen.

Second, this system is written for a terminal which accepts the VT52 mode. If this system is going to be used on another terminal mode, the screen.cbl (screen driver in COBOL) program needs to be adapted to fit the requirement of that terminal.

Third, it is unusual to modify the general ledger account. However, to add or delete the general ledger file, be sure it is processed properly. Before making any changes to the general ledger account, referencing the chart of account is suggested. This is because each heading account matches only one total account. Thus, to add or delete a heading type account, a total type account must added or deleted to the general ledger file.

```
----- SCREEN - 1.0 -----
GENERAL LEDGER SYSTEM

SELECT ONE OF THE FOLLOWING TYPE TO PROCESS
ENTER SELECTION:_

=====
* : FOR EXIT GENERAL LEDGER SYSTEM
1 : FOR ACCOUNT MAINTAIN PROCESS
2 : FOR ACCOUNT UPDATE PROCESS
3 : FOR REPORT GENERATOR PROCESS
=====

##### <1> #####
```

PURPOSE:

This screen is the first screen in this system. It allows the user four selections: to maintain all accounts, process different account updates, print different reports and exit the system. This screen is the driver of the system. To change from one of the above executed processes to another, one must go back to this screen then call the desired process.

The choice of '1' will call the SCREEN - 1.1 for entry, adjusting entry and maintaining account information. The choice of '2' will call the SCREEN - 1.2 for update general ledger file, clean revenues and expense, clean old entries and end of year process. The choice of '3' will call the screen-1.3 for print the chart of account, print the list of account entered, print the audit trial, print the ledger sheet, print the trial balance, print the income statement and print the balance sheet.

ERRORS RECOVERY:

The user can only enter '*', '1', '2' or '3' values. Otherwise, the error message ## <1> ## will be shown and the cursor will move to the enter position for reentering the selection. The response must be correct, otherwise the system will request again.

DISPLAY MESSAGES AND PROMPTS ::

<1> ### :: ERROR MESSAGE::INVALID RESPONSE. PLEASE REENTER

```

----- SCREEN - 1.1 -----
                ACCOUNT MAINTAIN SELECTION

SELECT ONE OF THE FOLLOWING TYPE TO PROCESS
                ENTER SELECTION: _

=====
* : FOR EXIT ACCOUNT MAINTAIN PROCESS
1 : FOR ENTER ENTRY
2 : FOR ENTER ADJUSTING ENTRY
3 : FOR MAINTAIN ACCOUNT INFORMATION
=====

##### <1> #####
    
```

PURPOSE:

This screen is shown through the selection '1' of screen-1.0 calling or back from its previous called screen. It has four different functions to choose from: Enter entry, enter adjusting entry, maintain account information and exit this screen back to the original SCREEN - 1.0.

The choice of '1' will call the SCREEN - 1.1.1 for enter entry data. The choice of '2' will call the SCREEN - 1.1.2 for enter adjusting entries. The choice of '3' will call the SCREEN - 1.1.3 for select type of the general ledger maintenance.

ERRORS RECOVERY:

The user can only enter '*', '1', '2' or '3' values. Otherwise, the error message ## <1> ## will be shown and the cursor will move to the enter position for reentering the selection. The response must be correct, otherwise the system will request again.

DISPLAY MESSAGES AND PROMPTS ::

<1> ### :: ERROR MESSAGE::INVALID RESPONSE. PLEASE REENTER


```
----- SCREEN - 1.2 -----
                ACCOUNT UPDATE SELECTION

SELECT ONE OF THE FOLLOWING TYPE TO PROCESS
                ENTER SELECTION: _

=====
* : FOR EXIT ACCOUNT UPDATE PROCESS
1 : UPDATE GENERAL LEDGER FILE
2 : CLEAN REVENUES AND EXPENSE
3 : CLEAN OLD ENTRIES
4 : END OF YEAR PROCESS
=====

##### <1>,<2>,<3>,<4>,<5>,<6>,<7> #####
```

PURPOSE:

This screen is shown through the selection '2' of SCREEN - 1.0 or back from its previous called screen. It has five different functions to choose from: update general ledger file, clean revenues and expense, clean old entries, end of year process and exit this process back to the calling SCREEN - 1.0.

No further screen for this screen's selection are available. Except for the '*' selection, any of the other four selections will show that the selected function is in progress at the bottom of the screen.

The choice of '1' will update the general ledger file. If the accounts are not balanced the error message will be displayed and the update will not be executed. Usually, It will be requested after the trial balance is printed and the balance of accounts is approved.

The choice of '2' will clean the revenues and expense accounts. The amount of revenues and expense account will be set to zero and the total income will be moved to the retain earning account for the beginning of the next accounting period. Usually, This selection is chosen after the income statement has been printed.

The choice of '3' will clean the old entries which are entered during a period of the accounting cycle. Usually, it is processed after any other accounting steps are finished and prepared for the beginning of the next accounting period. If the entered accounts are not used to update the general ledger file, an error message will be displayed. The requested function will not be executed. The choice of '4' will clean the entered account file, which keeps records of entered accounts of a accounting period, and the previous entered account file, which keeps all the records for a fiscal year.

ERRORS RECOVERY:

The user can only enter '*', '1', '2' or '3' values. Otherwise, the error message ## <1> ## will be shown and the cursor will move to the enter position for reentering the selection. The response must be correct, otherwise the system will request again.

DISPLAY MESSAGES AND PROMPTS ::

```
### <1> ### :: ERROR MESSAGE::INVALID RESPONSE. PLEASE  
REENTER  
### <2> ### :: UPDATE GENERAL LEDGER FILE PROCESSING  
### <3> ### :: CLEAN REVENUES AND EXPENSE PROCESSING  
### <4> ### :: CLEAN OLD ENTRIES PROCESSING  
### <5> ### :: END OF YEAR PROCESSING  
### <6> ### :: ACCOUNT NOT UPDATE YET. NO CLEAN MADE  
### <7> ### :: ACCOUNT NOT BALANCE. NO UPDATE
```

```

----- SCREEN - 1.3 -----
                REPORT GENERATOR SELECTION
        SELECT ONE OF THE FOLLOWING TYPE TO PROCESS
                ENTER SELECTION: _

=====
* : FOR EXIT REPORT GENERATOR PROCESS
1 : PRINT CHART OF ACCOUNT
2 : PRINT LIST OF ACCOUNT ENTERED
3 : PRINT AUDIT TRIAL
4 : PRINT LEDGER SHEET
5 : PRINT TRIAL BALANCE
6 : PRINT INCOME STATEMENT
7 : PRINT BALANCE SHEET
=====

##### <1>,<2>.....,<13> #####

```

PURPOSE:

This screen is shown through the selection '3' of SCREEN - 1.0. It allows the user to print the following reports: the chart of account, the list of account entered, the audit trial, the ledger sheet, the trial balance, the income statement and balance sheet.

The choice of '1' will print the chart of account. The chart is used to show how many accounts are in the general ledger file. Before modifying any of the general ledger account, it is important to reference this report to make sure the modification is correct.

The choice of '2' will print a list of entered accounts for the date which the entry is made. A hard copy will be printed for each entered account for future reference. Usually, after enter all the accounts, this listing can be requested.

The choice of '3' will print the audit trail for a certain period during the fiscal year. After selecting this process, the system will prompt the user to enter beginning and ending date of that period for this report. The dates the user entered must be within the fiscal year, otherwise the system will request to reenter again.

The choice of '4' will print the ledger sheet for each account which occurred during the period. It lists all transactions for that accounts and total change.

The choice of '5' will print the trial balance for the current accounts. It is a list of all accounts used by the business and the amount in each account. It is requested after finishing the entry and before updating the general ledger file.

The choice of '6' will print the income statement. It shows the ultimate effect on the business of its profit-seeking activities during a period.

The choice of '7' will print the balance sheet. It shows the balance of the asset and liability accounts for a business at the end of a period.

ERRORS RECOVERY:

The user can only enter '*', '1', '2', ..., '6' and '7' values. Otherwise, the error message ## <1> ## will be shown and the cursor will move to the enter position for reentering the selection. The response must be correct otherwise the system will request again.

If the audit trail is request, the system will requested the beginning date and ending date for the desired period. If the date entered is not correct the cursor will move back for request reenter.

DISPLAY MESSAGES AND PROMPTS ::

```
### <1> ### :: ERROR MESSAGE::INVALID RESPONSE. PLEASE
                REENTER
### <2> ### :: PRINT CHART OF ACCOUNT IS PROCESSING
### <3> ### :: PRINT LIST OF ACCOUNT ENTERED IS PROCESSING
### <4> ### :: PRINT AUDIT TAIL IS PROCESSING
### <5> ### :: PRINT LEDGER SHEET IS PROCESSING
### <6> ### :: PRINT TRIAL BALANCE IS PROCESSING
### <7> ### :: PRINT INCOME STATEMENT IS PROCESSING
### <8> ### :: PRINT BALANCE SHEET IS PROCESSING
### <9> ### :: ENTER BEGIN DATE:YEAR ___ MONTH ___ DATE ___
### <10>### :: ENTER END DATE:YEAR ___ MONTH ___ DATE ___
### <11>### :: YEAR NOT IN PROPER RANGE PLEASE REENTER
### <12>### :: ENTER TOO LONG PLEASE REENTER
### <13>### :: MONTH NOT WITHIN PROPER RANGE
```

```

----- SCREEN - 1.1.1 -----
                ENTER   ENTRY   PROCESS

=====
DATE ** / ** / **                SOURCE CODE  _
ENTRY NUMBER  _____
ACCOUNT NUMBER _____
ACCOUNT NAME  ++++++
ACCOUNT VALUE _____

##### <2> <3> ##### _
##### <1> #####
    
```

PURPOSE:

This screen is shown through the selection '1' of SCREEN - 1.1. It moves the cursor around the screen to request the user to enter proper data of the entry. If the entered data is incorrect, the system will display a error message for reentering. After finishing each entry, the user can answer the 'N' to go back to the original SCREEN - 1.1 or 'Y' to reenter more entries with "enter more" prompt.

ERRORS RECOVERY:

For response to "source code" prompt, only '1', '2' or '3' will be accepted. Otherwise, The system will display the error message for reentering. The system will automatically display the current entry number on the screen which the user does not have to worry about. The user must enter the correct account number, otherwise the user will be asked to try again or not. Be sure the length and type of the account to be entered is correct. The amount needs to be entered correctly also. Illegal values will not be accepted and needs to be reenter. After entering each entry, the user may decide to enter more data or not.

DISPLAY MESSAGES AND PROMPTS ::

```

### <1> ### :: ERROR MESSAGE::INVALID RESPONSE. PLEASE
                REENTER
### <2> ### :: TRY AGAIN (Y OR N) ?
### <3> ### :: ENTER MORE (Y OR N) ?
    
```

```

----- SCREEN - 1.1.2 -----
                ADJUSTMENT ENTRY PROCESS

=====
DATE ** / ** / **                SOURCE CODE  4

ENTRY NUMBER  _____

ACCOUNT NUMBER _____

ACCOUNT NAME  ++++++

ACCOUNT VALUE _____

##### <2> <3> ##### _

##### <1> #####
    
```

PURPOSE:

This screen is shown through the selection '2' of SCREEN - 1.1. It moves the cursor around the screen to request the user to enter proper data of the adjusting entry. If the entered data is incorrect, the system will display the error message for reentering. After finishing the entry, the user can answer the 'N' to go back to the original SCREEN - 1.1.1 or 'Y' to reenter more entries with "enter more" prompt. This screen functions all the same as the SCREEN - 1.1.1, except the "source code" '4'. For detail, please reference the SCREEN - 1.1.1.

```
----- SCREEN 1.1.3 -----
SELECT GENERAL LEDGER MAINTAIN TYPE

ENTER SELECTION: _

=====
* : FOR EXIT GENERAL LEDGER MAINTAIN
1 : FOR ADD GENERAL LEDGER RECORD
2 : FOR DELETE GENERAL LEDGER RECORD
3 : FOR MODIFY GENERAL LEDGER RECORD
=====

##### <1> #####
```

PURPOSE:

This screen is shown through the selection '3' of SCREEN - 1.1 or back from its previous called screen. It has five different functions to choose from: add general ledger record, delete general ledger record, modify the current general ledger record or exit back to the calling SCREEN - 1.1.

The choice of '1' will go to SCREEN - 1.1.3.1 for adding a new general ledger record. The choice of '2' will go to SCREEN - 1.1.3.2 for deleting a general ledger record. The choice of '3' will go to SCREEN - 1.1.3.3 for modifying a general ledger record. The choice of '*' will back to the original SCREEN - 1.1.3.

ERRORS RECOVERY:

The user can only enter '*', '1', '2' or '3' values. Otherwise, the error message ## <1> ## will be shown and the cursor will move to the enter position for reentering the selection. The response must be correct, otherwise the system will request again.

DISPLAY MESSAGES AND PROMPTS ::

```
### <1> ### :: ERROR MESSAGE::INVALID RESPONSE. PLEASE
REENTER
```

```

----- SCREEN - 1.1.3.1 -----
                ADD GENERAL LEDGER RECORD

ENTER ACCOUNT-NUMBER : _____
ENTER ACCOUNT-NAME   : _____
ENTER ACCOUNT-TYPE   : _
                ACCOUNT VALUE :

##### <4>,<5> #####

##### <1>,<2>,<3> #####
    
```

PURPOSE:

This screen is shown through the selection '1' of SCREEN - 1.1.3. It moves the cursor around the screen to request the user to enter proper data for the new adding account. If the entered data is incorrect, the system will display the error message for reentering. After finishing the entry, the system will ask for confirmation. The user is requested to recheck the data to make sure the added data is correct. The account value of the added account must be zero. Thus, the user will not be requested to enter the account value.

ERRORS RECOVERY:

The new account number must not exist on the current system, otherwise the system will display the error message and request for reentering. The length of account must be correct too. The system only accepts alphabetic letters for the new account name. Only the '0', '1', '2' and '3' is allows for the account type. Any above errors, the user will be requested to reenter.

DISPLAY MESSAGES AND PROMPTS ::

- ### <1> ### :: ERROR MESSAGE::INVALID RESPONSE. PLEASE REENTER
- ### <2> ### :: ACCOUNT ERROR:: WANT TRY AGAIN? ENTER Y OR N::
- ### <3> ### :: ACTION CONFIRM :: IS THIS RECORD TO BE ADDED? ENTER Y OR N
- ### <4> ### :: NO ADDITION MADE
- ### <5> ### :: ADD MORE ? (Y OR N)


```

----- SCREEN - 1.1.3.2 -----
          DELETE GENERAL LEDGER RECORD

ENTERED ACCOUNT NUMBER
WHICH TO BE DELETED      :      _____

          ACCOUNT NAME      :      ++++++
          ACCOUNT TYPE      :      +
          ACCOUNT VALUE     :      ++++++.++

          ##### <4>,<5> #####

          ##### <1>,<2>,<3> #####
    
```

PURPOSE:

This screen is shown through the selection '2' of SCREEN - 1.1.3. The user will be asked to enter the account number, which will be deleted from the general ledger file. After the proper account number is entered, the system will display the information about that account and ask for confirmation. The account value of those deleted accounts must be zero, otherwise the deletion will not be executed.

ERRORS RECOVERY:

The deleting account number must exist on the current system, otherwise the system will display the error message and request for reentering. The system will not delete an account for which the account value is not zero.

DISPLAY MESSAGES AND PROMPTS ::

```

### <1> ### :: ERROR MESSAGE::INVALID RESPONSE. PLEASE
                REENTER
### <2> ### :: ACCOUNT ERROR:: WANT TRY AGAIN? ENTER Y OR
                N::
### <3> ### :: ACTION CONFIRM :: IS THIS RECORD TO BE
                DELETE? ENTER Y OR N
### <4> ### :: NO DELETION MADE
### <5> ### :: DELETE MORE ? (Y OR N)
    
```

```

----- SCREEN 1.1.3.3 -----
                MODIFY GENERAL LEDGER RECORD

ENTERED ACCOUNT NUMBER : _____
ENTERED ACCOUNT NAME   : ++++++
ACCOUNT TYPE          :
ACCOUNT VALUE         :

##### <4>,<5> #####
##### <1>,<2>,<3> #####
    
```

PURPOSE:

This screen is shown through the selection '3' of SCREEN - 1.1.3. The user will be asked to enter the account number which will be modified. Only the account name can be changed. Thus, after the desired account number is entered correctly, the system will display the information about that account and ask for the new account name for that account.

ERRORS RECOVERY:

The modified account number must exist on the current system, otherwise the system will display the error message and request for reentering. The system will only accepts the account name which is less than thirty letters.

DISPLAY MESSAGES AND PROMPTS ::

```

### <1> ### :: ERROR MESSAGE::INVALID RESPONSE. PLEASE
                REENTER
### <2> ### :: ACCOUNT ERROR:: WANT TRY AGAIN? ENTER Y OR
                N::
### <3> ### :: ACTION CONFIRM :: IS THIS RECORD TO BE
                MODIFY? ENTER Y OR N
### <4> ### :: NO MODIFY MADE
### <5> ### :: MODIFY MORE ? (Y OR N)
    
```


151000COST	30000000000000000000000000000000
151200MACHINERY & EQUIPMENT	00000000000000000000000000000000
151300FURNITURE & FIXTURE	00000000000000000000000000000000
151400LEASEHOLD IMPROVEMENT	00000000000000000000000000000000
151500TOTAL	20000000000000000000000000000000
152000CONSTRUCTION-IN-PROCESS	00000000000000000000000000000000
153000ACCUMULATED DEPRECIATION	30000000000000000000000000000000
155000MACHINERY & EQUIPMENT	00000000000000000000000000000000
156000FURNITURE AND FIXTURE	00000000000000000000000000000000
157000LEASEHOLD IMPROVEMENTS	00000000000000000000000000000000
158000TOTAL	20000000000000000000000000000000
158500TOTAL PROPETY & EQUIPMENT	20000000000000000000000000000000
160000TOTAL ASSETS	20000000000000000000000000000000
200000LIABILITIES &	10000000000000000000000000000000
200010STOCKHOLDER'S EQUITY	30000000000000000000000000000000
200020CURRENT LIABILITIES	30000000000000000000000000000000
210000NOTES PAYABLE	00000000000000000000000000000000
211000CURRENT MATUR ON L-T DEBT	00000000000000000000000000000000
212000SALES TAX PAYABLE	00000000000000000000000000000000
213000INCOME TAX PAYABLE	30000000000000000000000000000000
213100FEDERAL	00000000000000000000000000000000
213200STATE	00000000000000000000000000000000
214000TOTAL	20000000000000000000000000000000
215000PAYROLL TAXES PAYABLY	30000000000000000000000000000000
215100FEDERAL INCOME TAX WITHHOLD	00000000000000000000000000000000
215110FICA	00000000000000000000000000000000
215120FEDERAL UNEMPLOYMENT TAX	00000000000000000000000000000000
215130STATE INCOAXESAX WITHHOLD	00000000000000000000000000000000
215140SDI	00000000000000000000000000000000
215150STATE UNEMPLOYMENT TAX	00000000000000000000000000000000
216000TOTAL	20000000000000000000000000000000
217000ACCRUED LIABILITIES	30000000000000000000000000000000
218000PAYROLL	00000000000000000000000000000000
218100VACATION	00000000000000000000000000000000
218200PROPERTY TAXES	00000000000000000000000000000000
218300OTHER ACCRUED LIABILITIES	00000000000000000000000000000000
218900TOTAL	20000000000000000000000000000000
221000UNEARNED INCOME	00000000000000000000000000000000
221100CUSTOMER OVERPAYMENT	00000000000000000000000000000000
221200UNIDENTIFIED CUSTOMER RECEIPTS	00000000000000000000000000000000
221400TOTAL CURRENT LIABILITIES	20000000000000000000000000000000
232000LONG TERM LIABILITIES	30000000000000000000000000000000
232200NOTES PAYABLE	00000000000000000000000000000000
232300DEFERRED INCOME TAXES PAYABLE	00000000000000000000000000000000
232400TOTAL	20000000000000000000000000000000
242000STOCKHOLDER'S EQUITY	30000000000000000000000000000000
242100CAPITAL STOCK	00000000000000000000000000000000
242200ADDITIONAL PAID-IN CAPITAL	00000000000000000000000000000000
243200RETAINAL EARNINGS	00000000000000000000000000000000
243300TOTAL	20000000000000000000000000000000
249990TOTAL LIAB & STOCKHOLDER'S EQ	20000000000000000000000000000000
300000 INCOME	10000000000000000000000000000000
305000INCOME DETAIL	30000000000000000000000000000000

310000	SALE OF GOOD	30000000000000000000000000000000
311000	FINISHED GOODDS	00000000000000000000000000000000
312200	SALES RETURNS & ALLOWANCES	00000000000000000000000000000000
312300	TOTAL	20000000000000000000000000000000
320000	CONSULTING FEES	00000000000000000000000000000000
330000	ROYALTIES FEES	30000000000000000000000000000000
331000	PATENT ROYALTIES	00000000000000000000000000000000
332000	CONSULTING ROYALTIES	00000000000000000000000000000000
333000	TOTAL	20000000000000000000000000000000
340000	OTHER INCOME	30000000000000000000000000000000
341000	COLLECTION OF BAD DEBTS.	00000000000000000000000000000000
342000	MISCELLANEOUS INCOME	00000000000000000000000000000000
349000	TOTAL	20000000000000000000000000000000
350000	TOTAL INCOME	20000000000000000000000000000000
400000	EXPENSES	10000000000000000000000000000000
405000	EXPENSES DETAIL	30000000000000000000000000000000
410000	COST OF INCOME	30000000000000000000000000000000
411000	COST OF SALE OF GOODS	00000000000000000000000000000000
412000	COST OF CONSULTING FEES	00000000000000000000000000000000
413000	ROYALTY PAYMENTS	00000000000000000000000000000000
414000	VARIANCE EXPENSE	00000000000000000000000000000000
415000	TOTAL	20000000000000000000000000000000
420000	DEVELOPMENT PROJECT EXPENSES	30000000000000000000000000000000
421000	DIRECT LABOR	00000000000000000000000000000000
422000	OVERHEAD	00000000000000000000000000000000
423000	OTHER DIRECT CHARGE	30000000000000000000000000000000
424000	DIRECT MATERIALS	00000000000000000000000000000000
424100	OUTSIDE SERVICES	00000000000000000000000000000000
424200	FREIGHT-IN	00000000000000000000000000000000
424300	TRAVEL	00000000000000000000000000000000
424400	TOTAL	20000000000000000000000000000000
424500	TOTAL DEVELOPMENT PROJ. EXPENSE	20000000000000000000000000000000
431000	SALARIES, WAGES, & BENEFITS	30000000000000000000000000000000
432000	DIRECT LABOR	00000000000000000000000000000000
432200	INDIRECT LABOR	00000000000000000000000000000000
432300	OVERTIME PREMIUM	00000000000000000000000000000000
432400	HOLIDAY-VACATION-SICK	00000000000000000000000000000000
432500	JURY DUTY & OTHER LEAVE	00000000000000000000000000000000
432600	PAYROLL TAXES	00000000000000000000000000000000
432700	BONUS	00000000000000000000000000000000
432800	OTHER FRINGES BENEFITS	00000000000000000000000000000000
433000	TOTAL	20000000000000000000000000000000
440000	MATERIALS & SUPPLIES	30000000000000000000000000000000
441000	COMPUTER MATERIALS AND SUPPLIE	00000000000000000000000000000000
441200	RAW MATERIALS & SUPPLIES	00000000000000000000000000000000
441300	STATIONAL-MATR'LS AND SUPPLIES	00000000000000000000000000000000
441400	OTHER MATERIALS AND SUPPLIES	00000000000000000000000000000000
441500	TOTAL	20000000000000000000000000000000
442000	FACILITIES & EQUIPMENT	30000000000000000000000000000000
442100	RENT-OFFICE SPACE	00000000000000000000000000000000
442200	EQUIPMENT LEASES	00000000000000000000000000000000
442300	DEPRECIATION	00000000000000000000000000000000
442400	EQUIPMENT MAINTAINCE	00000000000000000000000000000000

442500	JANITORIAL SERVICE	00000000000000000000000000000000
442600	UTILITIES	00000000000000000000000000000000
442700	AUTO EXPENS	00000000000000000000000000000000
442800	EQUIPMENT RENTAL	00000000000000000000000000000000
442900	TOTAL	20000000000000000000000000000000
443000	OUTSIDE SERVICES	30000000000000000000000000000000
443100	PROFESSIONAL SERVICES-LEGAL	00000000000000000000000000000000
443200	PROF. SERVICES-CONSULTING	00000000000000000000000000000000
443300	EMPLOYMENT SERVICES	00000000000000000000000000000000
443400	CREDIT & COLLECTION SERVICE	00000000000000000000000000000000
443500	OTHER OUTSIDE SERVICES	00000000000000000000000000000000
443600	TOTAL	20000000000000000000000000000000
444000	ADVERTISING	30000000000000000000000000000000
444100	PERIODICALS	00000000000000000000000000000000
444200	TRADE SHOWS	00000000000000000000000000000000
444300	SHOWS - TRAVEL	00000000000000000000000000000000
444400	SHOWS - OTHER	00000000000000000000000000000000
450000	DIRECT MAILINGS - SHAMPLES	00000000000000000000000000000000
451000	BROCHURE PRINTING AND MAILING	00000000000000000000000000000000
452000	OUTSIDE PREP. WORK ON ADS	00000000000000000000000000000000
453000	OTHER ADVERTISING	00000000000000000000000000000000
454000	TOTAL ADVERTISING	20000000000000000000000000000000
460000	ORDER & SHIPPING EXPENSES	30000000000000000000000000000000
460100	SHIPPING EXPENSE - OUTGOING	00000000000000000000000000000000
460200	ORDER/SHIPPING FORMS PRINTING	00000000000000000000000000000000
460300	POSTAGE	00000000000000000000000000000000
460900	TOTAL	20000000000000000000000000000000
465000	OTHER EXPENSES	30000000000000000000000000000000
465010	TAXES-LICENSES-FEES	00000000000000000000000000000000
465020	INSURANCE	00000000000000000000000000000000
465030	TRAVEL & EMPLOYEE BUSINESS EXP	00000000000000000000000000000000
465040	COMMUNICATIONS	00000000000000000000000000000000
465050	DOUBTFUL ACCOUNTS	00000000000000000000000000000000
465060	DUES AND SUBSCRIPTIONS	00000000000000000000000000000000
465070	OTHER FREIGHT - IN	00000000000000000000000000000000
465080	ALLOW'L CUSTOMER UPDERAPYMENT	00000000000000000000000000000000
465090	MISCELLANEOUS	00000000000000000000000000000000
465900	TOTAL	00000000000000000000000000000000
470000	CRDITS	30000000000000000000000000000000
470100	DIRECT LABOR TRANSFERRED OUT	00000000000000000000000000000000
470200	OVERHEAD APPLIED	00000000000000000000000000000000
470300	EST. O'HEAD UNDER ABSORBED	00000000000000000000000000000000
470400	TOTAL	20000000000000000000000000000000
475000	NON-OPERATION (INCOME) EXPENSE	30000000000000000000000000000000
475020	LOSS ON PROP./EQUIP. SALE	00000000000000000000000000000000
475030	INTEREST (INCOME) EXPENSE	00000000000000000000000000000000
479000	TOTAL	20000000000000000000000000000000
480000	ESTIMATED INCOME TAXES	30000000000000000000000000000000
480100	FEDERAL	00000000000000000000000000000000
480200	STATE	00000000000000000000000000000000
489000	TOTAL	20000000000000000000000000000000
495000	TOTAL EXPENSES	20000000000000000000000000000000

APPENDIX D-2
EXAMPLE FILES NEEDED TO RUN THE PCL

Following files are need in the directory for the using of PCL.

```
*****  
LOGIN.CMD:  
*****
```

```
copy cmd.cmd comand.cmd  
<PCL-EXEC>EXEC.EXE
```

```
*****  
CMD.CMD:  
*****
```

```
refuse links  
Set def decl /noconfirm  
decl pcl ps1:<cs.grad.ccw>init.pcl  
ter vt52  
ter no pause end-of-page  
def system:ps:<pcl-exec>exec.exe,system:  
del ps:<cs.grad.ccw>comand.cmd  
take
```

```
*****  
INIT.PCL:  
*****
```

```
command ledger;  
begin  
docommand original "ter wid 0";  
docommand original "run ledger.exe";  
docommand original "ter wid 80";  
end;
```

APPENDIX D-3
SET UP THE FILES

Before using this system, to initialize this system for use, make sure the empty sequential files for account.fil (entered account file), previ.fil (previous entered account file) and tempac.tmp (temporary file) is created in the system directory. The following commands build those sequential files. Be sure the empty files' file name and extension are exact the same as mention above.

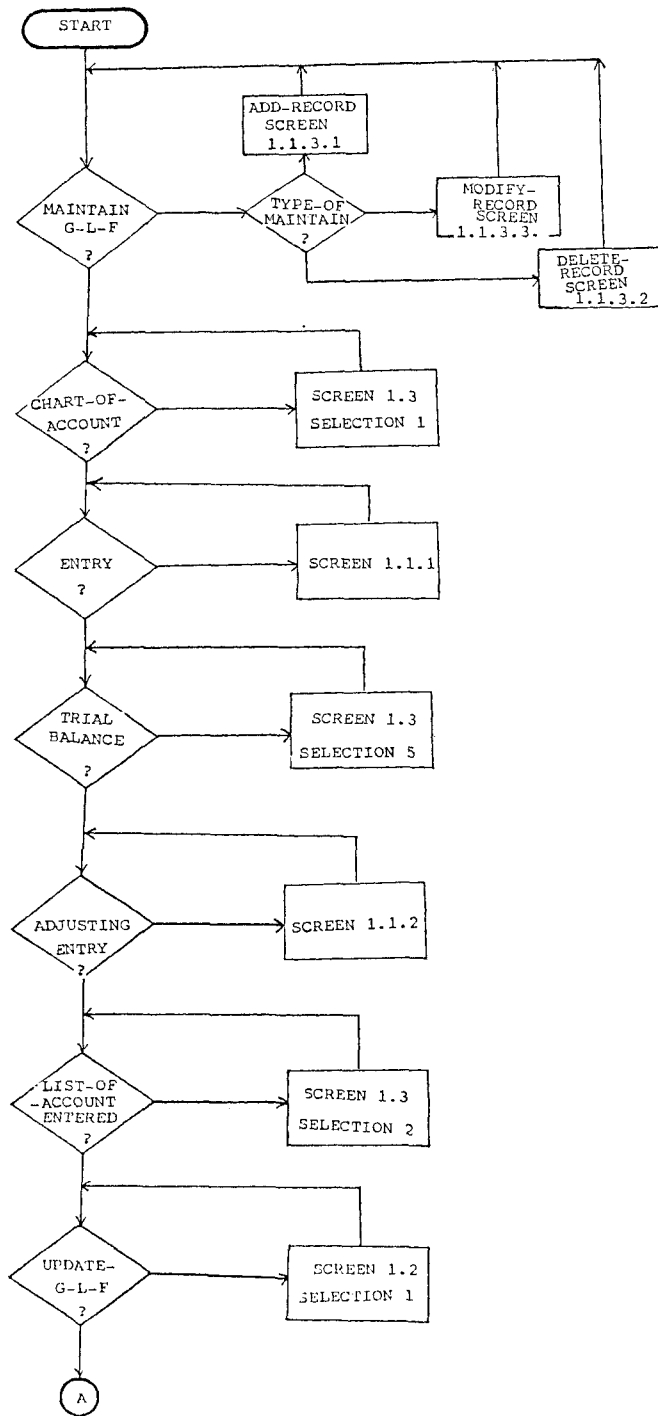
```
@EDIT (FILENAME.EXT) <CR>
00100 <ESC>
*EU <CR>
```

A sequential file of the chart of accounts is needed to build the genfil.inx (general ledger file), an index file, through the use of Indexed Sequential File Maintenance program (ISAM) on the DEC-2060 system. A sample of the chart of accounts which is used to build the index file is listed at appendix d-1. The following commands are a example of the using of the ISAM in the DEC-2060. In this case, the file name of the chart of accounts is genfil.seq.

```
@ISAM <CR>
*GENFIL.INX,GENFIL.IND=GENFIL.SEQ/B <CR>
Mode of input file: A <CR>
Mode of data file: A <CR>
Maximum record size: 67 <CR>
Key descriptor: UN1.6 <CR>
Records per input block: 0 <CR>
Total records per data block: 42 <CR>
Empty records per data block: 21 <CR>
Total entries per index block: 42 <CR>
Empty entries per index block: 21 <CR>
Percentage of data file to leave empty: 20 <CR>
Percentage of index file to leave empty: 20 <CR>
Maximum number of records file can became: 500 <cr>
.
.
.
* < ^C >
```

For mor detail in using ISAM, please check the help file in DEC-2060, simply typing in "help ISAM" when in monitor or asking the computer center consult.

APPENDIX D-4



APPENDIX D-4

