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NASA TECH BRIEF

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Request-Oriented Information Selection Program

The problem:

The Lewis Research Center Office of Reliability and Quality Assurance had obtained magnetic tapes which contain failure and consumption reports and inspectors' reports on parts used by the Atlas and Centaur projects. Through a 5-year period, over 300,000 such reports were collected. Personnel of the office needed the ability to search through all the reports, recognize reports on failures of a particular kind, extract some of the information from those reports, and organize the extracted information into a meaningful format.

The solution:

A general purpose information retrieval program written entirely in Fortran IV was developed and can be used with any file of fixed formal documents. The program is easily used by noncomputer personnel and provides flexibility in search requests and output format. These features together with efficient design enable the program to satisfy users' requests for information promptly and inexpensively.

How it's done:

The reports to be searched are stored on magnetic tapes which will be referred to as the search tapes. At the beginning of each search tape is a file of information which describes the format of the reports on the search tape. This file is designated the directory file. The program begins by reading the directory file in order to prepare itself for the particular kind of documents on the search tape. The directory file completely describes the documents on the search tape. In order to implement the program for a new application, therefore, one must simply prepare search tapes whose directory files describe the documents to be used, for example, personnel records, library files. The user's input cards which contain the search and output requests are read and interpreted next. After this, the actual search begins. In making the search the program incorporates the AND, OR, and NOT operators. The program also uses the following relational operators: greater than, less than, equal to, not equal to, greater than or equal to, less than or equal to. These relational operators are used in searching values of certain identifying numbers.

Documents are read from the search tape and compared to the user's search request. When a document is found to match the request, it is copied onto an intermediate tape which will be called the hit tape. This process continues until all documents from the search tape have been checked. The documents which were accumulated on the hit tape are then read, and the requested information fields are copied from them. The copied information is sorted and formatted, according to the user's output request, and printed.

Notes:

1. This program is written entirely in Fortran IV for use on the IBM 7094/44 computer.
2. Inquiries should be made to:
   COSMIC
   Computer Center
   University of Georgia
   Athens, Georgia 30601
   Reference: B68-10451

Patent status:

No patent action is contemplated by NASA.

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Category 06