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# Applications of the Psion organiser at Strathclyde University Library

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## 1. The organiser and library applications

### 1.1 Introduction

The Psion organiser is a small hand-sized computer about the size of a (thick) pocket diary. Despite its size, it is a complete computer by any reasonable definition, with processor, 16-32Kbyte memory, operating system, programming language, resident software, and the ability to communicate with peripherals such as printers and light pens, as well as with other microcomputers. The resident programs are an electronic diary, a personal database system, a calculator, a clock, an alarm facility and a programming facility. The programming facility allows programs to be created, edited, saved, compiled and inserted into the main menu in such a way that they may be run with a single keystroke. At time of writing (May 1988), the basic machine comes in two models. Each has the facilities and capabilities described above, but they vary in the on-board memory available. The 16Kbyte model costs approximately £100, the 32Kbyte model costs approximately £130. Enhancements available include:

- blank 'datapaks' which can increase the data-storage capacity to 288Kbyte;
- a communications link, allowing amongst other things, the upload and download of files to or from another microcomputer, and the dumping of data and programs to a (serial) printer;
- software packages, including financial programs, a spreadsheet, word processing.

The organiser and its peripherals are easy to use and, for the most part, 'userfriendly'. Datapaks are simple to use, and to fit and remove, changing batteries is a simple matter, as is the process of linking to peripherals. Manuals are clear and helpful and the organiser is easily customised to personal (or organisational) requirements. One criticism relates to the size (approximately 2½" by 3") and layout (not QWERTY) of the keyboard. However, use of this improves with practice and the handy size of the machine compensates for the initial awkwardness. The screen is, of necessity, small but, generally speaking, adequate. A short program, listed in the manual, can be typed in to permit control of access by password. It should be noted that, being very portable, the organiser is easy to steal.

### 1.2 Assessment of in-built facilities

#### a) Calculator

This is relatively sophisticated and would probably do anything a librarian or information scientist is likely to need in the course of his or her duties. A useful feature is the ability to post-edit calculations. Ten memory stores are available and their contents can be passed to external programs, a very useful feature.

#### b) Personal database facility

This is extremely useful if swift access is required to a wide range of difficult-to-remember information. Telephone numbers, names and addresses and other similar data can be easily saved. Retrieval is possible by typing any four consecutive characters from the record (e.g. DENNIS could be retrieved using DENN, ENNI, NNIS). The Systems Unit at Strathclyde University Library has found this facility invaluable for storing information about library systems — such as all the parameters of all the terminals on the Geac System. The Unit has begun to compile a shared 'systems' database available to each of the systems staff through the exchange of datapaks.

### c) Diary facility

This allows diary entries to be made in half-hour slots. Each entry can have an alarm sound on request up to 59 minutes before the time of the entry. The diary can be searched by date and by subject. It can be saved to a datapak and reloaded, tidied, erased, and listed consecutively. Surprisingly, there is no MOVE (to another time slot) facility. The entry to be moved has to be re-typed. Nevertheless, this facility can be extremely helpful in organising busy and complex schedules.

### 1.3 Facilities available through programming

The organiser can be programmed using a language called OPL, a fact which widens its potential applications greatly. This has led to the availability of a growing number of commercially-available software packages. For example, at least one supplier of library systems (Geac) has adapted the organiser for use as a portable data-capture unit. However, it also offers the individual user a means of extending and adapting the organiser. The simple program for calculating percentages, listed in Figure 1 to give a 'flavour' of OPL, is an example of this, as is the statistics logging and reporting system described later.

## 2. Statistics logging on the organiser

### 2.1 The statistics

The Systems Unit at Strathclyde University Library comprises two members of professional staff, each of whom is required to record statistics on how their time is spent, recording for each non-trivial task carried out:

- general category (R&D or operational systems);
- total time spent on the task;
- total time spent using a computer;
- system or developing system worked on;
- description of the work carried out;
- date.

```
P%:  
LOCAL A,B,N,P  
START: :  
PRINT"SUM"  
INPUT N  
IF N=0  
STOP  
ENDIF  
PRINT"PERCENTAGE"  
INPUT P  
A = (N/100)*P  
WHILE B<6  
SO: :  
PRINT" 1-6 5 FOR HELP"  
INPUT B  
IF B=1: CLS :PRINT A;" = ";P;"% OF ";N  
ELSEIF B=2: CLS :PRINT A + N;" = ";N;" + ";P;"%"  
ELSEIF B=3: CLS : PRINT N-A;" = ";N;"-";P;"%"  
ELSEIF B =4 : GOTO START: :  
ELSEIF B=5 : PRINT"1 = % 2 = + % 3 = - % 4=NEW NO 6=QUIT":  
PAUSE 0 : GET : GOTO  
ELSE : STOP  
ENDIF  
PAUSE 0  
GET  
ENDWH
```

Figure 1. An OPL program for calculating percentages

The Unit is required to combine, structure, and summarise the data recorded in monthly reports to the University Librarian. Prior to January 1988, the recording and reporting process was manual. The raw data were recorded by making rough, unstructured, and sometimes illegible entries in Unit diaries. Monthly report production was a tedious task involving the deciphering, structuring, summarising, and typing up of these sometimes incomplete data. This made it an unpopular and time-consuming task which tended to ensure that reports were produced several weeks late at best and were less complete in detail than they might have been.

## ***2.2 The automated process: an overview***

The automated alternative to the system described above was put into live use in January 1988. In the new system, the two members of Unit staff log their statistics on individual organisers, using an in-house program called WSTAT (for Write STATistics). Since this program has been inserted in the organiser's main menu, and has an initial letter unique within that menu, invoking the logging program is a simple matter of pressing the 'W' key. Once this is pressed, the user is prompted to enter:

- N or O for new/operational system;
- a three-letter code identifying the system itself;
- the computer time in minutes;
- the total time in minutes;
- a short description of the work carried out.

The date is taken from the organiser's calendar and added automatically, and the resulting record — structured from the first, and legible — is written to a file. At the end of the month, the files from the two organisers are downloaded to an IBM PS2/50, using the Psion communications package, and the files are subsequently cleared down ready for next month's log. On the microcomputer, the files are combined and processed using a dBase III plus command file, which then produces the kind of structured monthly report illustrated in Figure 2. Using this new system, the monthly statistical report, which previously took several hours to produce, and was typically several weeks late in production, may be produced in less than 20 minutes on the first working day of the new month.

## ***2.3 The organiser logging programs***

### *a) WSTAT*

WSTAT is the main logging program. Having pressed W (for WSTAT) on the organiser's main menu the user is presented with the options:

*Xit, Con, Date:*

- if 'X' is chosen the program exits to the main menu of the organiser without recording anything.
- if 'D' date is chosen the user is prompted to enter a date other than the current day's date.
- if 'C' is chosen, the user is prompted with:  
*N,O = New, Op.Sys.*  
and must enter either 'N', if the work being logged relates to a new or developing system, or 'O', if the work being logged relates to an operational system.

The user is then prompted with:

*SYSTEM:*

in order that the three-letter code identifying the system in question may be entered. If EXE is pressed at this point (the Psion equivalent of a return key) a facility to search for and display, or to display

sequentially, the currently available codes is invoked. Exiting from this facility brings back the prompt *SYSTEM:*.

Day of Mth	System Name	Comp uter time	Over all time	Description of task
<b>** CATEGORY: OPERATIONAL SYSTEMS</b>				
15	AQ: BK ORDERS CDROM	90.00	90.00	BRS SOFTWARE/BOOKBANK
2	AQ: GENERAL	0.00	30.00	GEAC DEMO ETC
14	CA: GEAC CATALOGUING	60.00	90.00	PRINT/ANALYSE ** KEEP
14	CA: GEAC CATALOGUING	60.00	60.00	LOOK INTO MPDUPL ERROR
7	CA: GEAC CATALOGUING	60.00	60.00	GRSNS FOR DUPLICATE RECORDS
9	CA: GEAC CATALOGUING	60.00	90.00	MPDUPL PROJECT
9	CA: GEAC CATALOGUING	90.00	90.00	INVESTIGATE MBOVRN PROBLEM
9	CA: OCLC ONLINE LINK	30.00	60.00	CHECK NEW TERMINAL DOWNLOAD
8	CA: OCLC ONLINE LINK	30.00	30.00	TERMINAL PARAMETERS
2	R&I: ONLINE SERVICE	15.00	15.00	COLLECTORS CHECK
7	R&I: ONLINE SERVICE	120.00	120.00	ONLINE TRAINING/AH
14	R&I: ONLINE SERVICE	30.00	60.00	OLD IBM SEARCH STRATEGIES
7	R&I: ONLINE SERVICE	30.00	30.00	CHECK/ERASE COLLECTORS
2	R&I: ONLINE BILLS	30.00	30.00	BILLS PROGRAM UPDATE
9	R&I: ONLINE BILLS	0.00	15.00	VAT IN ONLINE BILLING
7	R&I: PRESTEL	60.00	60.00	AMSTRAD PRESTEL PROCEDURES
14	R&I: JANET CATALOGUES	0.00	30.00	AMSTRAD PRESTEL ACCESS
15	R&I: DOMESDAY PROJ.	120.00	120.00	ECODISC/INTERACTIVE VIDEO
8	R&I: CD ROM	60.00	60.00	ORGANISE CDROM FILES
7	R&I: CD ROM	0.00	75.00	CDROM SUBS/R+I
8	RS: CIRCULATION SYS.	30.00	30.00	HUGO SYSTEM ERRORS
9	RS: CIRCULATION SYS.	30.00	60.00	RESOLVE MUDDLED ITEM TRANSACTION
2	RS: CIRCULATION SYS.	30.00	30.00	CIRC TABLES CHANGES
7	RS: TELEX/E.MAIL SYS	60.00	60.00	MONITOR/TIDY TGOLD FILES
14	RS: TELEX/E. MAIL SYS	30.00	30.00	REPLY TO TGOLD MESSAGES
9	RS: TELEX/E. MAIL SYS	60.00	60.00	TGOLD FILES
2	SY: STATISTICS PROG	30.00	60.00	PAPER TO ID MTNG
1	SY: STATISTICS PROG	60.00	60.00	MONTHLY STATS ETC
9	SY: PSION	0.00	30.00	CHASE FORMATTER ORDER WITH CSS
7	SY: SYS.UN. INVOICES	0.00	60.00	CHECK + CLEAR INVOICES
8	SY: SYS.UN. INVOICES	0.00	45.00	GEAC INVOICE PROGRESS
14	SY: SYS.UN. INVOICES	0.00	30.00	HITACHI/ARCHETYPE INVOICE
8	SY: GENERAL	0.00	30.00	O.ALLEN/9000 COURSE
3	SY: GENERAL	30.00	30.00	WORDPROCESSOR TRAINING
3	SY: GENERAL	30.00	30.00	MAIL AND EMAIL
2	SY: GENERAL	15.00	15.00	SLOW OVERNIGHTS PROBLEM
9	SY: GENERAL	60.00	90.00	WORD PROCESSOR TRAINING/MR
2	SY: GENERAL	10.00	15.00	TAPE OF **OCLZ
9	SY: GENERAL	0.00	30.00	NEW 9000 LINE/MARSHALLS
9	SY: GENERAL	15.00	15.00	DUMP FEC CHECK TO PRINTER
10	SY: GENERAL	30.00	30.00	CHECK SYSTEM/OVERNIGHTS ETC
9	SY: GENERAL	0.00	420.00	GEAC SOFTWARE DEMO/EDINBURGH
11	SY: GENERAL	30.00	30.00	CHECK SYSTEMS UP
11	SY: GENERAL	0.00	420.00	GEAC SOFTWARE DEMO/EDINBURGH
1	SY: GENERAL	60.00	60.00	GEAC OVERNIGHTS PROBLEM
1	SY: GENERAL	30.00	30.00	TGOLD EMAIL WORK
14	SY: GENERAL	0.00	30.00	GEAC/DATAPROJECTOR DEMO

Figure 2. Systems Unit statistical report – a sample report

Day of Mth	System Name	Computer time	Overall time	Description of task
2	SY: GENERAL	15.00	15.00	EMAIL CHECKS
8	SY: GENERAL	60.00	60.00	PROCOMM MANUAL TO WORDPROCESSOR
14	SY: GENERAL	0.00	60.00	MARSHALLS/NEW 9000 LINE
9	SY: GENERAL	15.00	15.00	DC 42 BAD SECTOR/DRIVE 1
7	SY: GENERAL	0.00	60.00	IT WORKING PARTY
15	SY: GENERAL	60.00	60.00	CHECK OVERNIGHT BATCHES
15	SY: GENERAL	0.00	180.00	DYNIX DEMO/HONEYWELL BULL
8	SY: GENERAL	0.00	60.00	GEAC PRINTER/LIGHTPEN PROBLEMS
1	MISCELLANEOUS	0.00	210.00	EGA POLICY MTNG
** Subtotal **		1735.0	3765.0	

Day of Mth	System Name	Computer time	Overall time	Description of task
<b>** CATEGORY: SYSTEMS R&amp;D</b>				
3	AQ: GEAC BOOK ORDERS	0.00	30.00	ELECTRONIC SUGGESTIONS
14	AQ: BK ORDERS CDROM	90.00	90.00	INVESTIGATE BOOKBANK SOFTWARE
2	CA: DATABASE	15.00	15.00	DUPLICATES PROGRAM
7	R&I: ONLINE SERVICE	90.00	90.00	PROCOMM FILES
3	R&I: PRESTEL	240.00	204.00	AMSTRAD PRESTEL ACCESS
2	R&I: JANET CATALOGUES	210.00	210.00	PROCOMM AND JANET
2	R&I: DOMESDAY PROJ.	0.00	30.00	DISC DRIVE PEP
2	SY: GENERAL	420.00	420.00	GEAC 9000 COURSE/BRISTOL
3	SY: GENERAL	30.00	60.00	9000 CIRC PREP
7	SY: GENERAL	0.00	180.00	CONTRACT DETAIL
1	SY: GENERAL	420.00	420.00	GEAC 9000 COURSE/BRISTOL
3	SY: GENERAL	0.00	30.00	CONTRACT
3	SY: GENERAL	420.00	420.00	GEAC 9000 COURSE/BRISTOL
4	SY: GENERAL	420.00	420.00	GEAC 9000 COURSE/BRISTOL
9	SY: GENERAL	30.00	30.00	9000 KQ COMMANDS
3	SY: GENERAL	0.00	45.00	PHONE CALLS : GEAC
** Subtotal **		2385.0	2694.0	
*** Total ***		4120.0	6459.0	

Figure 2 (cont.). Systems Unit statistical report – a sample report

Once the appropriate system code has been entered, the user is prompted with:

- *COMPUTER TIME*: (the time spent using a computer, to be entered in minutes)
- *OVERALL TIME*: (the total time working on the system in question, again to be entered in minutes)

Entering the overall time produces the prompt:

*DESCRIPTION*:

in order that the kind of work done on the system in question may be recorded. Entering this, the last part of the log entry, produces the prompt:

*Xt, Cn, Date, Ed, Q:*

Entering 'X', for exit, returns control to the organiser's main menu, having written the record just entered to the statistics file. Entering 'C', for continue, allows a second entry to be recorded from the "N,O = New, Op.Sys." prompt. Entering 'D' is equivalent to 'C', except that the user may enter the date to be recorded against the next entry, in preference to having the system date recorded. Entering 'E', for edit, allows the entry just recorded to be edited before it is written to the file. Entering 'Q', for quit, returns control to the organiser's main menu without writing the record just entered to the statistics file.

b) *XSTAT*

The second program, XSTAT, has two functions. Function one allows the file of statistical entries to be listed, a useful feature if the user needs confirmation that an entry has been made or made correctly. Function two, used only at the beginning of a new month when the statistics file has been downloaded, allows the file to be cleared down ready for a new set of entries.

c) *ZCODE*

The third program, ZCODE, has one function: it allows new three-letter statistical codes to be added to the list of system codes.

#### ***2.4 Downloading the statistics to a PS2/50 and dBase III Plus***

When all of the statistics for a given month have been logged, the files from the two organisers are downloaded to two separate files on an IBM PS2/50 microcomputer, using the Psion communications link. The communications link package comprises a communications cable, communications software for the organiser, and communications software for an IBM compatible microcomputer. It will connect the organiser to 'a printer, desktop computer, modem, or any-device which has an RS232 or RS423 port'. Amongst other things, it will enable the printing of files and programs from the organiser, the use of the organiser as a terminal (e.g. for use with telex or electronic mail services), or, as in this case, file transfer between the organiser and an IBM compatible microcomputer.

The file transfer process takes only a few minutes and involves connecting each organiser in turn to the microcomputer's serial port, invoking the software on both the organiser and the microcomputer, and choosing the 'transmit' option on the organiser's communications menu (the parameters for communication having been previously set up and saved). In this instance, Psion's own protocol is used to control the communications process (other alternatives available are xmodem and no protocol). Once the two files have been transferred to the microcomputer, they are cleared down on the organisers, so that the new month's statistics can be recorded.

#### ***2.5 Processing the files and producing the report***

Once the files are on the microcomputer, the process of producing the report is virtually automatic. A dBase III Plus program file is run which converts the files to dBase format, combines them into one file, translates the category codes and system codes into the headings seen in the report, indexes and sorts the resulting files, and outputs it in the structured report format shown in Figure 2.

The two organiser files are converted to dBase HI Plus format using the dBase *APPEND FROM* (filename) *DELIMITED WITH*, command, the Psion field separator (TAB) having been globally replaced with a comma during the file transfer process (*DELIMITED WITH "TAB"* does not appear to work in dBase). Appending each file to the same dBase file produces a single file of Unit statistics. This is then put in system code order using the dBase *SORT* command, the system codes and the 'O' and 'N' categories are translated into their full names using the *REPLACE* command, indexed by category using the *INDEX* command and printed out in the format shown in Figure 2 using the

REPORT FORM command. Provided that there are no new system codes to add before processing can take place, the whole process is automatically handled by a single command file and takes less than 10 minutes. If new codes are required, the process takes a little longer, perhaps another 10 minutes.

### **3. Concluding remarks**

The organiser has proved a significant aid in a number of areas of Systems Unit work and there are now plans to investigate its potential in the wider area of library operations as a whole. The possibility of extending its use in the gathering and reporting of library statistics is now being actively investigated, the hope being that it will both reduce the workload of staff in this area and significantly increase the speed with which monthly statistical reports are produced. There is also some interest in the potential usefulness of having a large body of those library statistics (currently held manually) in machine readable form for the first time. Another area of interest is in the development of databases of common interest which can be created and updated centrally on a microcomputer and downloaded regularly to individual organisers. This idea has yet to be discussed in full. However, a small experimental step towards it has already been taken, the library's internal telephone directory having been put on a microcomputer so that it may be updated and downloaded to organisers in this manner.

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