The Newsletter for SIR UK Users

SIR REPORTER

Contents

Editorial

We are particularly pleased to present in this issue an article by Tony Reardon, the owner of SIR Pty, on the problems which have been encountered in developing the new version of SIR for Windows. This version has been a long time a-coming, but now the major hurdles have been overcome and we anticipate a full release in early 1997. For the next issue, SIR Pty will be describing the features of the new version. By this time, Beta testing of the new version should be well under way, and we will be in a position to report comprehensively on how the new version looks. There should also be a solid date for the full release by then.

The one-day Conference at the end of June was a success, and a review of it by Hilary Beedham appears in this issue. This conference was a case of venturing into virgin territory for us, since the annual three-day Conferences had been a tradition for more years than any of us care to remember. We do intend to have several such one-day Conferences each year, some of them on specific topics. What topics would you, the reader, like to see focused on in this way? Perhaps a launch Conference for the advent of version 4? As ever, the User Group exists to facilitate your wishes, so let us know.

Those of you who read **INSIR**, the international newsletter put out by SIR Pty, will be aware that SIR has a web-page. For those who wish to get weaving with the white heat of technology, there is included a brief note by Dave Doulton on how to get started. Well ...the world-wide web is believed to be where it's all at these days, so happy exploring. Let us know how you get on, so that we can share your experience with others.

Michael Staley

Note from the Chair

Although I'm writing this just as I'm about to go off on my summer hols, by the time this issue drops on your desk I'll have gone and come back as, as, no doubt, will have you. So: hope you had a great summer; I'm sure I did.

Those of you who couldn't make it on June 28, missed an extremely thought provoking and enjoyable day, not to mention a really good boogie afterwards. As Hilary's report also points out, yours truly was somewhat incommoded by a very nice plaster wrapping around my left arm (the after-effects of an elegant back-flip at the roller rink) but, as you ask, it's much better now; I can touch type (after a fashion) again and don't have to seek out sympathetic colleagues to open my mail.

The turnout on June 28 suggests that the Committee was correct in assuming that one-day events are, in the current climate, preferable to residential conferences: lack of time and funds are increasingly affecting us all. Our decision to focus on one-day events is not, however, cast in stone, so please don't hesitate to give us your own views on the matter.

We also broke with tradition and held our Annual General Meeting on June 28, the major purpose of which was to elect this year's Committee. As it turns out, there was no change on that front (and, in consequence, none at the back of this Reporter either). We're still short of a full complement of Committee members, however, and, in general, always open to offers of participation from enthusiastic SIR users. So, if this accurately describes you, please drop me a line.

For the moment, however, Committee eyes are focused on November 13th, when we'll be holding the second one-day meeting of this year in Edinburgh. As details are included with this issue, I'll just say that the programme is shaping up to be a good one and Edinburgh is a very beautiful city. If you haven't yet, make a note of this date in your diary and try your best to attend.

Randy Banks

Events

November 13 — **SIR Users Conference Edinburgh**
A combination of training, tips and tricks and user papers.

BOOK NOW - Details are given on page 6.

SIR 1996 Conference
The Changing Face of SIR Applications
June 28, London

The 1996 Conference marked a departure from the traditional residential Conferences held in November in previous years. Quality was not, however, compromised by the reduction in quantity of speakers, and the numbers present suggested that the committee had accurately judged the feedback from the user survey, which had indicated that a one day event would be better attended than recent residential conferences.

The day began with a warm welcome from our one-armed Chair. Yes, Randy began the day with an arm in plaster!

Onto more serious matters, though. Randy first introduced a former member of the User Group committee, Stuart Mitchenall, who gave us a thought-provoking and stimulating keynote speech. He argued cogently that SIR is a highly suitable product for a small number of uses and for those uses it is the best product available. Stuart gave a brief history of the software, describing its early links with SPSS at a time when a 30 megabyte database was considered large and when the only computing power was available was a mainframe via an intelligent terminal. As one who first analysed data under precisely these conditions, Stuart took me, and I'm sure others, on a trip down memory lane (no pun intended!). This was not, however, a backward-looking paper; having set the scene and placed SIR firmly in a niche position as the best available software for the management of complex hierarchical datasets, Stuart argued that it would be a mistake for SIR to try and compete in the corporate market against products such as Oracle or Ingres. It is not and cannot be an industry giant, but it can maintain its current position in the market by responding to users and developing the features which users want. The key is to sell SIR for its strength as a data warehousing product, and to consolidate this with the development of ODBC.

SIR can identify itself as a component in a client server environment, contributing to on-line analytical processing as a research tool with a unique data handling capability.

To sum up, Stuart argued that SIR is a unique database tool for analytical users; it needs OLAP functionality; it needs client-server capability; OLAP tools do not need MS Office functionality (such as graph); and SIR has the potential to meet the challenge. It is for SIR to rise to this challenge and consolidate its position.

Kathy Brooks (FORVUS) then gave us a very interesting training session on systems management. This session was very welcome to a number of users, since it is an area which is often neglected. I don't recall any discussion of this topic at any of the conferences I have attended in the past, yet it is of critical importance when one is dealing with unique data. The importance of the topic was reinforced by the amount of discussion which it generated in terms of the relative benefits of keeping backups, unloaded files or export files as a means of preserving data from loss.

There followed from Toni Moulin a summary of the SIR International conference in Bremen. This will be reviewed elsewhere, but suffice to say that the conference was well attended, the papers were interesting and Bremen was a great venue.

Steve Flack then picked up on many of the points made by Stuart in his keynote speech, taking us further down memory lane with more history of the product. Steve identified some of the key changes which have influenced the development of SIR to date, such as the move to users working directly on PCs, and the expectation that the PC-based software should handle large and complex datasets. He argued that SIR should go back to its roots as an excellent data manager and cleaner and build on its inherent strength as a data management tool.

He also argued that SIR could use other software as a front end and asked whether or not it is necessary for such a product to have its own GUI interface. His personal conclusion, supported by at least some users, is that it is not. Like Stuart, Steve concluded that SIR should build on its existing strengths and that ODBC should be developed to improve its interface with other products.

After a short AGM of the User Group there was an enjoyable lunch, in the course of which there were many opportunities for SIR users to meet and discuss their particular problems or difficulties with others. It always surprises me at such events to discover that the problem you thought was peculiar to you has been encountered by others! Even better when one of those others has a solution!

Following lunch, we had a great paper from Dan Adams who is fairly new to SIR, working alongside Dave Doulton at Southampton university. Dan compared SIR with PARADOX, software with which he was already familiar before using SIR. His initial impression was that SIR was difficult - he was unfamiliar with the idea that one can have more than one key field and found the interface confusing. However, he became more comfortable when he discovered SQL (a favourite of mine as well) and once he had conquered a steep learning curve, concluded that PQL is intuitive and powerful and that overall, the effort involved in learning to use SIR was worthwhile.

Mike Campbell then offered a detailed paper on the integration of SIR with Staffware, as part of a DfEE project to simplify and automate the workflow through the system using workflow management software. By describing sections of the workflow in detail, Mike explained how and where the Staffware software made better use of resources. He then went on to explain why they had decided to continue using SIR despite reservations in some quarters. It was clearly important that there had been a lot of investment in SIR training, with fifteen staff members having been trained to use SIR. It was also pointed out that SIR has useful data validation and consistency checking facilities which are integral to the new system and could not be lost. Additionally, the code generator was being enhanced so that SIR could also be used to its full potential, thereby releasing programming staff for other work.

Mike looked forward to the promised SIR GUI as an important development in the continued use of SIR by his department. One problem however, could not be resolved: the lack of integration between SIR and Staffware caused concern about the integrity of the data when they were passed between packages. After considering the options (screen scraping, SIR host and passing data to a UNIX file) the 'crudest most reliable' option was chosen and the data were transferred using a UNIX file.

My colleague, Margaret Ward then explained how we use SIR in the Data Archive. One of the key points she made was that although only a relatively small number of datasets held in the Archive are in SIR format, these surveys actually represent a large proportion of the data which we supply to users. However, we have very few users of these datasets who use SIR. The Archive makes a great deal of use of the options in SIR to output into other software formats: SPSS and SAS, for example and has written a suite of programs which, fed by information supplied by the user, allows us to generate a PQL program which will output a tailor made dataset. It was clear from the discussion that Margaret's paper provoked that ODBC would have great advantages for the research community, using data supplied from the Archive.

Following tea, we had an update on SIR Version 4 from Kathy Brooks. Kathy reported that a new programmer had been 'poached' in Australia in order to keep the promises on development which were made at the recent International conference. There was a general feeling that finally we have a group in charge in Australia who are aware of the issues which are of most concern to users - in particular we want a stable product which draws on its strengths rather than trying to be all things to all people - and is reacting to these needs. For the many users who have attended past conferences and been left wondering whether or not anyone is listening to us; this was a refreshing change of mood and one which we all hope will be sustained.

Following Kathy, Tracy Kirk of FORVUS gave a training session which picked up on Margaret's earlier theme of data transfer into other software and demonstrated in some detail the transfer of data into Microsoft Office. As an occasional user of Microsoft Office, I found this useful and the discussion which followed suggested that others also found it so.

The day's formal proceedings ended with a short panel discussion which was wide-ranging and picked up on a few of the issues raised during the day. Randy closed the day with the usual presentation of gifts to speakers. We then retired to the 'den' for cheese and wine and a good time was had by all. I'll leave it to others to let you know whether any other parts of our Chair were plastered by the end of the evening.....

Hilary Beedham

Trials & Tribulations of a Software Developer

SIR has been working on a new release for quite some time and the editor of Reporter has asked SIR to give some idea as to what is happening with this release. The following article, by Tony Reardon, gives some background and explanation of the current situation.

The major area SIR wanted to target for the next release was the user interface and the look and feel of the software. The system had evolved from a single command line interface to a full screen, menu driven system, but this was still text on a 24 by 80 character screen. We had three major technical issues to address over and above simply building a new interface:

We had to support existing customer developed systems. Because our older versions of PQL required programs to know low level information about the screen, we had to provide the equivalent under a new interface.

We had to provide cross-platform independence. A PQL developer had to be insulated from platform specific details. In other words, a PQL program should work on a Windows PC or any Unix machine with Motif, etc.

We had to provide system flexibility. We could not hard code our own menus or dialogs since we had already allowed users to customise these. We wanted to give ourselves the flexibility to design and redesign screen layouts without involving C programmers. We wanted to deliver the same screen development environment to our customers for their own applications.

We decided that we would support existing applications by creating a window that looks like a 24 by 80 text screen. We call this the 'execution window', and this provides all old PQL programs ***(or SIR functions which we haven't moved to a GUI interface)*** with the same style of user interface as a DOS screen or VT terminal, but under a native GUI environment. This means that old 'full screen' PQL still works and all existing programs can be run without modification.

We have made numerous other internal changes to the software, and we decided to release a 4.0 beta with all these internal changes plus the execution window. We wanted to ensure that we picked up any problems with the core SIR functions, so that we could then concentrate on the new GUI front end. Some beta testers were disappointed that the look and feel of this version was unchanged, but of course that was our aim at this point. We wanted a version that ran under native Windows or Motif and supported all applications designed to use a character screen.

Our GUI requirements gave rise to the following design approach:

We specified an internal logical interface. This provides functions for all other software modules and is identical across all platforms.

The logical layer calls a physical layer that performs detail calls to different routines depending on the particular physical environment.

We defined a high-level language that we can process and turn into particular logical level accesses plus associated actions with embedded SIR/PQL commands. All screens and user interactions can then be defined in terms of this new language, now known to us as Windows Design Language ***(WDL).*** These definitions are intended to be at a relatively high level, easily understandable and easily modified. In a subsequent release we

intend to provide a graphic interface for a user to design a screen that automatically generates WDL.

We had to decide how to develop each of these components as follows:

The WDL processor*.** We wrote this component using lex and yacc which take the WDL code and turn it into a program that calls the logical layer functions. This is firstly a C based approach ***(yacc produces C code), but then the yacc programmer ***(us)*** inserts actions in either C or C++ as the needs dictate. Since we interface with a C++ system ***(see below)*** and use C++ compilers, all our inserts are in C++.

***The logical layer*.** Because this is dealing with objects and with a physical layer in C++, we use C++ to develop it.

The physical layer. This maps logical objects to routines available in a GUI system. There are commercial systems that do some of this and we have taken a system called wxWindows ***(a C++ based system)*** as our base and extended it. Since this is in C++, then C++ is the main development tool.

***Integrating with SIR*.** SIR is still written in Fortran and the machine dependent routines are now all in C. The link between SIR and the front end is written as if messages are being passed between the components in a client/server environment. However in our current implementations, SIR is not a separate process and runs in the same address space as all the above. Therefore all the SIR modules have to be linked with all of the GUI modules.

This is the plan, and this is what we are attempting to deliver. This approach has given rise to a number of problems that have caused unplanned delays. Among these problems are:

As we need to deliver a multi-platform solution*,** we are dealing with different operating systems, different GUIs, different compilers. We are compiling and linking across three languages ***(C++, Fortran, C) and are building a very large system ***(thousands of modules).*** We have had enormous difficulties because of this. We attempt to develop in ANSI standard wherever possible, but still modules and processes which work happily on one system fail on others. We have found ourselves debugging compilers/linkers and then discovering that the most simple test suites with Fortran calling C did not work to standards.

The system is very large. We have to use dynamic load libraries and the technicalities of these can be difficult.

Because of the size and mixed environment, it is difficult to get debuggers to work properly and effectively, and this hampers development.

***We had to adopt an iterative approach to building these layers*.** We built an initial physical layer, then a logical layer, then a WDL specification and WDL processor and then an initial set of screens. We were then able to identify further requirements and repeat the process. Working in a GUI environment was new to us and we needed to use this iterative approach. However this has meant that we are always going back and revisiting and revising all of the layers. Examples of functions we have added quite recently have been greying out of menu choices under program control and two lists scrolling in tandem.

We have had a real fight with compilers and linkers under Windows, which meant that we could not get our full GUI SIR version working on Windows. We have been unable to produce a sensible schedule because we simply did not know how long it might take to overcome these problems.

We are very pleased to be able to say that as of early August we have got past this stage. We now have an initial version of the system running on Windows NT and see no problems in other 32-bit Windows versions of this. We expect to be in a position by the end of this month to do initial alpha testing on this version and identify any problems that need correction. Hopefully, this will then shortly lead on to a beta release.

On associated topics, you may know that we have been exploring how to use SIR on the Internet, and there is a very interesting article on this in the latest issue of INSIR. This has led us to review our documentation delivery methods, and we have decided to completely alter our documentation to be 'web pages' with active links between pages and topics. We are working on this and expect that this new documentation format will be delivered as part of the initial SIR 4.0 release.

Tony Reardon
August 1996

SIR Conference 13 November, Edinburgh

Following the highly successful one-day conference in London in June ***(described elsewhere in this issue),*** we have scheduled a one-day conference in Edinburgh on Wednesday 13 November. The day will be a combination of training, tips and tricks and user papers and be a

great opportunity to learn more about SIR and to meet other users. Three of the user papers are described below, and we have room for one more - please contact Peter Ritchie ***(address inside back cover***) if you would like to present a paper. Athough we expect that most delegates will come from the Edinburgh area, the programme starts at 10.30, with coffee and registration at 10am, to give a little travelling time for those arriving from Aberdeen, Darlington etc.

The conference is a snip at £35, and space is limited, so please complete and return the enclosed booking form as soon as possible.

Statistical Metadata - A Role For SIR?
Dr Joanne Lamb
Centre for Educational Sociology

Official statisticians are exploiting Information and Communication Technology (ICT) to improve both data capture and dissemination of statistics. Particular areas of activity include the exploitation of the World Wide Web and the use of meta-information systems. SIR has a history of providing powerful tools for manipulating metadata.

The presentation will review the state of the art in official statistics research and examine the potential for SIR to contribute to this field

2000+ and SIR
John Lemon
University of Aberdeen

If we are to believe both the computing and popular press the computing industry faces the biggest disaster since .... ? On the other hand the 'millennium hype' could be just that. A report today claims many industries will fail one second after midnight on 1st January 2000 due to computer programs and machines which will be unable to cope with the new millennium.

SIR can cope with dates after 31st December 1999 but can the data bases and programs? The Aberdeen Maternity and Neonatal Data Bank (AMNDB) was developed in the 'heady' days of '85 when this was not a consideration and so dates were 'DDIMMIYY'. Rather than wait till the last minute a minor re-structure became a major one as the AMNDB was made 'millennium' compliant - it was not as easy as first thought but success was finally achieved.

RICE from PRIME to PC
Peter Ritchie and Patrick Brown
Institute of Occupational Medicine

RICE, the asbestos fibre counting quality assurance scheme is a major mainframe-based application that is currently being ported from PRIME to PC.

Peter Ritchie and Patrick Brown, of the Institute of Occupational Medicine will describe some pros and cons of the work carried out so far, and discuss ideas for future development of the database on PC.

SIR On The WEB

The internet is currently the 'in thing' in computing, and SIR has arrived. For those of you who have a web browser and an internet connection, try the **URL http://www.sir.com.au.**

This is SIR's home page. It has links to technical details about SIR, full text, pictures and graphics from all the SIR Applications series. There are also details about the SIR company itself. Also included is a section giving links to other database related pages. There is a news section and a very useful Tips and Tricks section.

The most recent Tip at the time of writing is a full article on how to access the SIR package from a web page. A form can easily be constructed to gather parameters for a database search. These parameters are then posted to a CGI script which calls SIR, the output from which includes HTML commands. This output is then sent back as a document to the browser. This is a very easy way to include pictures in your output, as references can be put in the output which will cause the picture to be shown in the document.

Other goodies I shall leave you to explore yourself. It is well worth taking the time to visit the SIR page.

Dave Doulton

Forvus News

Here at Forvus, we are currently enjoying a particularly manic period of activity courtesy of the Department for Education and Employment. Bernie has recently 'put-to-bed' what is effectively **Phase I** of the 1996 School and College Performance Tables - the Absence Survey. This entails the despatching of Survey forms to around 25,500 English Schools to collect information on pupil absence (Authorised and Unauthorised).

The returns were validated before the summer recess, keeping our Telephone Help-Desk operators busy by taking queries from schools seeking guidance.

Meanwhile, Kathy and Janet have been busy preparing for **Phase II** of the project and have also been avidly practising their range of serene facial expressions to carry them through the more stressful episodes which lie ahead of them! As Phase II not only entails the checking of exam results for over 1 million students but now includes additional work to process the Primary School Performance Tables.

After two years of successfully producing the Secondary and 16-18 performance tables for the Department for Education and Employment, Forvus has also been awarded the contract to produce the first ever Primary School Performance Tables. These are based on the achievements of children in Key Stage 2, and will cover about 15,000 schools in England.

The three sets of tables are all produced in SIR, using Mforms and Mdbms for data collection, and complex suites of PQL to validate and query problems. The final datasets are output to QuickTAB and in a special text format which is used directly by the printers. It is likely that the Secondary and 16-18 tables will be published around November with the Primary tables following next March, so Bernie, Kathy and Janet will be pretty busy until then. But Tracy will still be working on general SIR work, and will be looking after SIR support.

With last year's TV and advertising spend quoted as 3103 million by the Advertising Association, Steve Howard has recently applied his statistical and analytical skills, using SAS®, for a major UK Advertising Agency (that wishes to remain anonymous!) Steve's work entailed the investigation of short term causes of brand choice for individual brands. The work carried out helped the agency to assess the impact fo TV advertising on brand sales.

In conclusion, on a more personal note our intrepid traveller Philip Truscott has recently returned from the Olympic Games in Atlanta. Philip was there purely as a spectator and not in his usual role of recruiting new converts (or Quanverts) to QuickTAB!

Anne Chalon

SIR/PC - Who wants what?

SIR (UK) recently polled its SIR/PC users to find out what flavour of Version 4 they would prefer when it turns up. The options were for DOS Extended, Windows, Windows 95, and Windows NT. Users were also asked if they wanted SIR on diskette or CD format.

Of the 30 or so users who responded, there seems to be an even split between those wanting DOS, Windows and Windows 95. This takes account of a number of multi-user sites that require more than one format. Only two users required the Windows NT version.

Similarly, there was an even split between users wanting diskettes and users preferring CD ROM format.

Forvus on the Web too

By the time you read this, Forvus will also have its Web pages up and running. These will be used to keep people informed of all the services that we offer, links to other related sites, and any interesting snippets of news and gossip (printable!) from Chez Forvus. The Web address is **http:\\www.forvus.co.uk**

Government Health Warning - Roller blading can be 'armful to your health

The SIR User Group Conference (again)

Someone came up with the suggestion that we could usefully(!) fill in some space with some tasteful piccies of the conference. Typically, nobody thought to take any shots of the esteemed speakers, but there were plenty taken at the apres-conference buffet/disco. So many in fact, that it would be difficult to select a few for inclusion. However, we submit this shot of Toni Moulin of the Beeb, which in itself is unusual as it is the only photo to be found in which the subject is not holding some kind of alcoholic beverage. Oh, and one of Janet Dyson offering SIR technical help (now available in cans) to a SIR user.

Steve Flack

Accessing Data Variables in Arrays

In Blaise questionnaires, data is often held in multidimensional tables or arrays. The subscript often requires a calculation. Consider, for example, the industry and occupation codes array for a household of up to eight people, where each person may have up to six jobs. The appropriate cell position in the array will be dependent on person number and within it job number. For programming purposes the variable name has to be constructed, using the root of the table and then adding the array position, derived in the course of the program. We can then use NGET (or SGET if we are accessing a string variable) to extract the data in the variable.

The following retrieval, using a two-dimensional array set up in Blaise, is an example of such an approach. There were two variables in this array, extending from WICOD00 to WICOD47 and WOCOD00 to WOCOD47. An external file, NEWLIS.TXT, provided the serial number, person number and job number required. The reference later to CASEID and REMSERNO is to actual keys used in the schema.

```
retrieval
integer xcase xrem perno jobno i
wicod wocod
string fname j cellname serno
set fname ("newlis.txt")
open infile / dsnvar = fname / read
loop
read (infile,err=eof) xcase(i3)
xrem(i9) 1x perno(i3) 1x jobno(i3)
case is xcase
. move vars caseid
. process rec 1 with (xrem)

.   compute i = (6 * perno) - 6 +
(jobno - 1)    | calculate subscript
.   ifthen (i le 9)
.     compute j = "0" + format (i)
.   else
.     compute j = format (i)
.   endif
.   compute wic = "wicod" + j
.   compute wicod = nget (wic)
.   compute woc = "wocod" + j
.   compute wocod = nget (woc)

.   compute serno = format (caseid,3)
+
        format (remserno,9) + chklet
.   write serno(a13) 3x perno 3x
jobno
    3x wic 1x wicod(i3) 3x woc 1x
    wocod(i4)

. end process rec
end case is
pool
eof:
close infile
end retrieval
```

This retrieval, though a relatively simple example, illustrates the principle of building up the variable name and retrieving it. It has proved extremely useful in my programming work, especially where the data has come via a Blaise survey questionnaire, where such tables or arrays are commonplace.

Michael Staley

Producing Subtotals in TABULATE

There is a TOTAL key word for use in the Tabulate procedure but no SUBTOTAL. Have you ever wanted to have subtotals in your table? I have, and have found a way, which makes use of the VALUE LABELS statement.

Suppose you have a person variable defined in your schema as:

```
Var labels ECONPO       Economic
position
Value labels ECONPO (1)Employees -
Full time
           (2)Employees -Part time
           (3)Self-empl +employees
           (4)Self-empl no emps
           (5)On a Govt scheme
           (6)Waiting to start job
           (7)Unemployed
           (8)'Students(econ inact)'
           (9)Permanently sick
           (10)Retired
           (11)Looking after home
           (12)Other inactive
```

then you can tabulate it, e.g.:

```
Tabulate   ECONPO then TOTAL, SEX/
           Filename =   ...  etc
```

The rows of the tabulation will be the values of ECONPO (SEX in the columns). There will also be a total row but what if you want subtotals?

To create subtotals for, say, economically active persons (ECONPO values 1-7) and economically inactive persons (ECONPO values 8-12) I inserted in my code, in the process records block,

```
Recode     SUBTOT1= ECONPO (1 thru 7
= 1)
```

TIPS & TRICKS

```
            (else = 0)
Recode      SUBTOT2 = ECONPO (8 thru
12 = 1)
            (else = 0)
Value labels      SUBTOT1 (1)Econ
active/
            SUBTOT2 (1)Econ inactive
```

There was a problem, though. A subtotal, unlike an overall total, needs to come in the middle of the rows. To arrange for this I split ECONPO by also inserting the following:

```
Compute     ECONPO1 = ECONPO
Compute     ECONPO2 = ECONPO
Value labels ECONPO1
    (1)Employees - Full time
    (2)Employees - Part time
    (3)Self-empl +employees
    (4)Self-empl no emps
    (5)On a Govt scheme
    (6)Waiting to start a job
    (7)Unemployed/
     ECONPO2
    (8)'Students (econ inact)'
    (9)Permanently sick
    (10)Retired
    (11)Looking after home
    (12)Other inactive

I could now create a table with
subtotals in the rows.

Tabulate ECONPO1 then SUBTOT1 then
ECONPO2
    then SUBTOT2, SEX/
    Filename =     ... etc
```

Codes not mentioned in the VALUE LABELS statement do not show up in the tabulation.

Philip A. Street

Using DBMS Record Sorting

One of the frustrations of working with SIR/PC is the platform - lack of it, some might say -upon which it operates. DOS has some maddening limitations. One of these is the SORT command, which will not work on files which DOS hallucinates are large, but which seem positively pocket-sized to the casual observer.

Recently it became necessary to sort a file of size 65k prior to processing. I could have changed the program so that instead of reading, reformatting and writing one record at a time, a tabfile was set up and indexed. However, I elected to call DBMS specifically to sort the file, though doubtless the SIR purists amongst us will write me off as irretrievably pedestrian, meriting exile in the outer darkness.

The controlling batch file creates a procedure of several lines, which is saved in the database procedure file in a family called SYSTEM. A subsequent call to DBMS executes this procedure, as follows:

```
echo.
echo        Calling SIR to sort
%1.cso prior to processing.....
echo.
echo PROCEDURE SYSTEM.SIRSORT REPLACE
> srt.com
echo READ \XX\EXTERNAL\%1.A00 >>
srt.com
echo SORT (12 5) >> srt.com
echo WRITE \XX\EXTERNAL\%1.A00 >>
srt.com
echo END CLEAR >> srt.com
echo END PROCEDURE >> srt.com
echo.
echo.
dbms/ba/db=ms/pw=pw/rs=rs/ws=ws/in=sr
t.com
echo.
echo.
dbms/ia/db=ms/pw=pw/rs=rs/ws=ws/ex=si
rsort/ts=100000
ECHO.
ECHO.
```

The initial call to DBMS stores the four lines between PROCEDURE and END PROCEDURE in the family SYSTEM. It is worth noting that if this family does not already exist, it will be created. The subsequent call uses the EXECUTE option to the execute the lines of the procedure; procedures to be executed with this option must reside in the family SYSTEM.

Again as a matter of personal preference, I prefer to create command files at the time of running by using the ECHO command in DOS, in line with the KISS principle (Keep It Simple, Sweetie). An old raincoat will never let you down.

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