I. OVERVIEW.

Many computer users would like the ability to use a "relational" search on a recent snapshot of their database to produce a list of items which fulfill the criteria of the search. Each "ad hoc" inquiry can be entered as needed. The user can always find them by logging on. ISPF edits the SAS (or other) "skeleton" according to values of the variables given on the panel. No VGET or VPUT is necessary to transmit values; editing is done automatically. The output of the process is a list of items which is retrieved by VGET, allocated to SYSIN, and it is passed to SAS.

Panel variables and the report name are passed to the CLIST invoked by the panel and then any run-time variables are passed by the CLIST to the SAS program and then run.

Panel definition.
   CLIST invoked by ISPF.
   SAS program and use of SAS macro variables and CLIST PUTFILE to insert the panel choices in the SAS program.

III. B OPTION: USERS WRITE THEIR OWN REPORTS.

Diagram: Programmer-user-data and report.

The programmer sets up a system whereby the user can go directly to the data and make up a report. Deciding on the search variables. Not all variables available need be used as search variables to cull the database by placing them on the panel. Choice of variables is based on data structures and user request. If, for example, the patient's marital status will never be the basis for an inquiry, there is no need to put it on the panel. Also:
1. The most important or often used items should be placed at the top of the panel.
2. Similar items should be grouped together.

Partial search is allowed in two ways:
1. A string entered by the user in the input area for the item is contained in the data item (for example, looking for all patients with "erman" any place in their last name).
2. The leading portion of the data item is known (for example, searching for patients whose room number starts with "12")

Sort variables can be chosen by the user. Understanding sorting seems to be one of the easier things for users to grasp. The order of the sort can be given by the user specifying "1", "2", etc., next to the possible sort item. Users can get the unsorted version of the report, and then decide which sort seems most important (e.g., by patient name). User request will lead to the selection of sort items. This feature is similar to QMF's ability to select or change the "SORT BY" of the report after the records are returned and perused.

Three parts of the system: SAS programs were chosen for the report writing due to the power and reliability of SAS; OS/MVS interactive Command Language ("CLISTs") were chosen for its control over the system; ISPF was used for reliable, easily defined panels for user interface. A simplified system is presented here, with panels as the user sees them, their definition using ISPF Dialog Management Services, and the skeleton SAS programs used.

Panel design.

Example 1. A large system.

Screen implementation example: Overview. ISPF edits the SAS (or other) "skeleton" according to values of the variables given on the panel. No VGET or VPUT is necessary to transmit values; editing is done automatically. The output of the process is a list of items which is retrieved by VGET, allocated to SYSIN, and it is passed to SAS.
CLIST FEATURES.

Sort variables are set by the CLIST. The sort order variables are retrieved by VGET for this special processing. If numeric, the desired order is matched up with the SAS program variables names.

Output and allocations are set by the CLIST and can be tailored for each application.

Data sets needed to install the system in each account:
1. SASLIB.DATA : All the SAS programs.
   Also the ISPF skeleton library ISPSSLIB.
   Also the SAS include library SASLIB.
2. CLIST : CLIST library allocated to SYSPROC.
3. PLIB.DATA : ISPF panels (ISPPLIB).
4. START.CLIST : Prologue to set up system.
5. ISPF.ISPPROF : ISPF profile.

SKELETON SAS PROGRAM.

")SEL" is used to insert code segments and SAS steps. Panel variables modify SAS code. The observations are counted before presentation, and may be printed via PF key at a number of locations.

EFFECT OF THE SYSTEM, USER VIEW.

The user can logon, make an extract, and then call on the relational option. Search is based on whatever knowledge the user has, records are retrieved to fill out that knowledge. Search can 'narrow in' on an area of user concern.

Once a skeleton has been set up, the users can devise and run their own reports. Depending on how elaborate the skeleton is, data items can be included and excluded from the report on request from the panel, be string search or partial string search variables, header or summary items.

Although more laborious to construct than queries in a purchased product such as QMF, potential users of a "relational" reporting strategy can determine to some extent how well suited to their application it may be, before purchasing the product. Furthermore, such a reporting system does not require DBA approval, or long lead times before delivery.

For more information or complete source code, contact:
D. Korthof (213) 970-8873
Northrop Corp. 4350/82
Hawthorne, CA 90250

MODIFIED ISPF PRIMARY OPTION MENU

SAS/ISPF REPORT WRITER

RELATIONAL INQUIRY PANEL

修改后的 ISPF 主菜单

SAS/ISPF 报表生成器

关系查询面板