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BURP- the business report processor

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NAME
BURP - The BUusiness Report Processor

SYNOPSIS
BURP

DESCRIPTION
BURP is a report generation package which may be used to create
general reports or may be used to create relational tables of data
that may be manipulated via relational database style BURP commands.
A functionally complete set of utilities also provides the ability
to manipulate complete reports.

The user friendly BROWSE and EDIT facil i ties provide
functionality to support the following report operations :

* create/modify report data
* search report lines
* sort report lines
* project report columns
* select report lines
* join two reports
* apply mathematical equations
* print reports

Screen based on line help is available in all facilities.

FILES
/u/p/321/gS/devt
/u/p/321/gS/db
/u/p/321/gS/help

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LIMITATIONS
Due to MDBMS (Mini Data Base Management System) restrictions,
the report control database must be reorganized periodically,
in order to free the space occupied by deleted report records.

BUGS
None.
THE UNIVERSITY OF WOLLONGONG

DEPARTMENT OF COMPUTING SCIENCE

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Abstract

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Welcome to the BURP Technical Report. This report explains the invisible aspects of BURP and should be read in conjunction with the other BURP manuals in order to fully appreciate what the complete BURP package has to offer.

The basic concepts of BURP are the screen manipulation facilities, the keyboard interface, the report control database and the text manipulation data structures. The aspects of each of these concepts is explained in the Basic Concepts section and their use is explained in the What Happens Internally section.
BASIC CONCEPTS

THE SCREEN INTERFACE

The Screen Interface in BURP is totally controlled by a limited subset of the complete curses package (as opposed to mini-curses). Screen manipulation is kept to a minimum using the curses routines:

- **initso**() - determines terminal type, initialises curses data structures and ensures that first refresh clears the screen.
- **obreak**() - transfers keyboard characters typed immediately to the application program (rather than buffering until an ASCII newline character is typed). Allows BURP to take action without having to type newline char.
- **noecho**() - stops typed characters being echoed on the screen by the teletype driver. This allows BURP to do its own echoing when appropriate.
- **nonl**() - stops return from being translated into newline and stops newline from being translated into linefeed. This allows curses to optimise cursor movement.
- **leaveok**() - reduces the need for cursor motions when curses is updating the screen. BURP uses this function and relocates explicitly moves the cursor after refresh.
- **endwin**() - this function is called before exiting BURP. It restores the original tty modes, resets the terminal into the proper non-visual mode, and removes space allocated by curses data structures.
- **mvaddstr**() - writes a null terminated character string at the required position.
- **mvprintw**() - writes formatted output to the screen, analogous to the C function printf().
- **mvinch**() - read a character from the screen from the required position.
- **mvaddch**() - writes a character to the screen from the required position.
- **clrtoeol**() - clears the screen from the requested position to the end of the line.
olrtobot() - clears the screen from the requested position to the end of the screen.

move() - moves the cursor to the requested position.

refresh() - reflects what is stored in the curses screen/window onto the screen. This process it optimised as curses is already aware of what is currently being displayed on the screen.

NB. key pad curses routines are not used, to enhance portability of the BURP system.

THE KEYBOARD INTERFACE

Each Screen within the BURP system has its own keyboard interface. This approach was adopted so that individual screens/functions could tailor their keyboard interface requirements. e.g. only some functions allow scrolling; some functions have additional CNTL keys. If a general keyboard interface routine was provided, some functions would have to make multiple calls to this general routine until their data entry requirements were satisfied. Therefore the creation and maintenance of function based keyboard interface routines was considered a more desirable approach and provides some independance between functions.

THE USER’S FILE

The user’s files is generally called a “report” and is stored in the /u/p/321/g5/UserFiles directory. A user file has a logical record length of 128 characters, with any unused portion of a report line being blank padded and the last character being an ASCII newline character. The maximum report width of 128 characters was considered optimal for printing, text buffering and I/O purposes.
TEMPORARY FILES

Temporary files are required by many functions to manipulate the lines of a report. These temporary files share the same physical characteristics of the "user files". Temporary files are allocated by the MkTemp() routine. These files are stored in the /tmp directory and have a file name of the form /tmp/BURPX99999 where 99999 is the process id of the BURP session and X is a unique alphabetic character. When a temporary file is no longer required it is removed from the /tmp directory.

LINE POOL & TEXT LINES CHAINS

When a browse or edit session is initiated, a temporary file is created for use as a temporary text file. This file is required so that no maintenance of the user's file takes place until the user commits himself to the changes via the SAVE, END or MENU commands (depending on whether BROWSE or EDIT is being used). When this temporary file is created, two linked lists, referred to as the Line Pool and the Text Lines are created. Each node in these chains contains a unique block number and a pointer to the next node in the linked list (ie. a linked list with a single forward pointer). The Line Pool is a linked list containing the block numbers of lines in the temporary file that are yet to be used. The Text Lines is a linked list containing the block numbers of lines in the temporary file which are currently being used; it also maintains the order in which they are to be read when displaying the report. There are several atomic functions which are used in order to maintain these two linked lists:

MoreLines() - this routine increases the length of the LinePool linked list to be consumed by the TextLines linked list.

AllocLine() - this routine consumes the first node in the LinePool linked list and inserts it at the desired position in the TextLines linked list.

FreeLine() - this routine removes the desired node from the TextLines linked list and inserts it at the head of the LinePool linked list.
This approach to the control of report lines and their distribution in the temporary file ensures that when blocks are no longer required, they may be overwritten when new report lines are inserted into the report. The logical sequence of 'active' report lines is defined by the TextLines linked list.

There are several semi-atomic functions which use the AllocLine() and FreeLine() routines in order to manipulate lines of text and these associated linked lists:

**InsertLines()** - this routine inserts the required number of report lines at the desired position in the TextLines linked list. The inserted lines are initialised to blanks.

**DeleteLines()** - this routine deletes the required number of report lines at the desired position from the TextLines linked list.

**CopyLines()** - this routine copies the required number of report lines from the desired position in the TextLines linked list to a new position in the TextLines linked list.

**MoveLines()** - this routine moves the required number of report lines from the desired position in the TextLines linked list to a new position in the TextLines linked list.
THE LINE CACHE

When report lines are to be read from the temporary file the block number from their associated entry in the TextLines linked list is passed to a routine FindFrameBlockNo(). This is one of the routines which controls a cache of recently used report lines. The Line Cache is an memory array which contains 15 entries (commonly called frames). Whenever a new block is required to be read from the temporary file, a Least Recently Used (LRU) cache frame replacement algorithm is employed to free a cache entry for use by the new block. If the line cache entry to be freed has been modified, it is rewritten to the temporary file prior to the cache being overwritten by the new entry. Each entry in the line cache has the following items:

- **block number** - associated block number relative to start of temporary file.
- **user record** - 128 bytes of report line read from the temporary line block file.
- **reference tag** - the time piece used by the LRU algorithm.
- **modify flag** - indicates rewrite of line block required when cache entry is removed by the LRU routine.

There are several functions which are used to manipulate the line cache:

- **FindFrameBlockNo()** - finds the frame containing the requested block number. The frame cannot be located, the LRU frame is found and allocated.
- **LookFrame()** - looks for the frame containing the requested block number.
- **FindLRUFrame()** - finds the Least Recently Used (LRU) frame in the line cache.
- **GetFrame()** - returns a pointer to the requested cache entry.
- **FreeFrame()** - frees the requested block from the cache.
- **ReadTmpFile()** - reads the required block from the temporary file into the line cache.
- **WriteTmpFile()** - write the required block from the line cache to the temporary file.
- **InitCache()** - initialise all cache entries prior to use.
- **CacheFlush()** - write all modified lines from the line cache to the temporary file.
COLUMN SPECIFICATIONS LIST

The Column Specifications List is a linked list which is used to store a copy of the column specifications of a report from the database. This list allows more efficient access and manipulation of the column specifications during an EDIT or BROWSE session and the ability to CANCEL any changes to the column specifications.

The procedure, 
\textbf{ReadColumnSpecs ()}

reads the column specifications from the data base for a specified report name and constructs the linked list with single forward pointers. Each list node represents a column of the report and contains a copy of the data stored in the colcon record of the database. The \textbf{ReadColumnSpecs} procedure returns the address of the root node of the list. The structure of the column specifications list node is contained in \textit{vars.h}.

The Column Specifications List is maintained in BURP by the following facilities:

\textbf{EDIT} : The report column headings are maintained directly by the EDIT Facility. The \textit{COLUMN} command of the EDIT Facility maintains the number of columns, their widths, lengths, start positions and their type.

\textbf{PROJECT} : The Column Specifications list is re-built according to the column numbers and the order in which they are specified by the user in the Data Entry Line.

\textbf{JOIN} : The Column Specifications from the report to be joined with the current report, that are not columns on which the join is performed, are added to the Column Specifications List of the current report.

\textbf{SAVE} : The contents of the Column Specifications List replaces the column specifications in the database if the report exists. Otherwise, the Column Specifications List is used to create the report in the database. This command is invoked automatically when the END or MENU commands are used in the EDIT Facility.

On termination of an EDIT or BROWSE session the space allocated to the Column Specifications List is freed using the \textit{free()} primitive.
THE DATA BASE

Introduction

BURP utilises the MINI DATA BASE MANAGEMENT SYSTEM, MDBMS*, for storing and retrieving report names and their corresponding report control specifications. The implementation of the BURP data base from the design stage was achieved in four consecutive steps using MDBMS support utilities.

i) Data Base Definition, DBD.

ii) Data Definition Language, DDL**, definition and compilation.
The DDL provides a mechanism for the definition of schemas, areas, records, keys, elements, sets, and the constraints that are to be applied to each.

iii) Data Storage Definition Language, DSDL, definition and compilation.
The DSDL is a mechanism for the definition of the size requirements of the data base.

iv) Data Base Sub-Schema Generation, DBSSGEN.
The DBSSGEN provides a link between the data base schema created in the above steps and the application programs.

The report name and control specifications are maintained in the BURP data base using MDBMS supported Data Manipulation, DM, routines which facilitate creation, retrieval and update of data base records.

The MDBMS functions and utilities used by BURP are described in the following sections of this report. The descriptions are BURP contextual. A more general synopsis of the MDBMS functions and utilities may be obtained from the MDBMS User's Manual situated in the Computing Science Laboratories of the University of Wollongong.

In all references to a file name in this section of the report the prefix /u/p/321/g5/devt is assumed.

* Mini DBMS, An Educational Database Management System.
K.J. McDonnel, Computer Science Department, Monash University CLAYTON, VICTORIA.

** The Data Definition Language (DDL) for MDBMS is a subset of the language described in the CODASYL Data Description Language Committee's journal of Development (1978).
Data Base Design (DBD)

The BURP data base has a simple hierarchic structure containing two records, REPCON and COLCON. The REPCON record is uniquely keyed on the report name and contains general report information. The COLCON record is keyed on the column number and contains information for a single column of a report. The relationship between these records is the set CONTROL. Within this set REPCON is the owner record and COLCON is the member record. There may be many columns per report, hence, there may be many set occurrences per REPCON record. REPCON records are inserted in ascending order of report name and the COLCON records are inserted in ascending order of column number within a REPCON record. CONTROL sets are to be inserted automatically when a COLCON record is inserted. Duplicate column numbers within a report are not permitted.

Data Requirements

Report : Total length 172 characters.

Report Name : 8 character unique key. The report name must start with an alphabetic character, any remaining characters can be any combination of alphabetic, numeric and national characters.

Report Description : 20 characters containing a description of the report. The description is displayed in the Catalogue Facility and is maintained by the DESCRIPTION/STATUS utility.

Report Status : 1 character containing either a 'T' (Temporary), or a 'P' (Permanent). The status is displayed in the Catalogue Facility, it defaults to 'T' and is maintained by the DSCR/STAT Utility. The Cleanup Utility deletes any Temporary reports not accessed for 30 days or more.
Report Heading : 128 characters maintained by the EDIT facility.

Date Last Access : 6 character date in the form DDMMYY. Maintained by the catalogue.

Date Last Update : 6 character date in the form DDMMYY. Maintained when a report is saved.

Flag Edit : Single character containing either '0', false, or '1', true. This flag is set to true by the Catalogue Facility when a report is selected for editing. Whilst this flag is set to true no other user may select the report for editing, delete or rename the report. This flag is reset to false on termination of the edit session.

Number Browse : 2 characters containing the number of users currently browsing a report. This value is incremented by the Catalogue Facility when a report is selected for browsing and decremented on termination of the browse session. A report may not be deleted or renamed if this value is greater than zero.

Colcon : Total length 268 characters.

(All fields are maintained by Column Specifications List and are updated on the database when the report is saved.)

Column Number : 2 character unique key. Column numbers are assigned from left to right of the report.

Start Position : 3 characters containing the start position of the column relative to the User File.

Length : 3 characters containing the length of a column.

Type : 1 character containing either a 'C', character, or a 'N', numeric which describes the type of data that can be stored in the column. Mathematical operations may be performed on numeric columns only.

Number Decimals : 3 characters containing the number of decimals for a numeric column.

2 Column Headings : 128 characters each, maintained by EDIT.
Data Definition Language (DDL)

The DDL specification for the DBD is as follows:

```
SCHEMA NAME IS REPORT.
AREA NAME IS BURP.
RECORD NAME IS REPCON
  WITHIN BURP
  KEY IS ASCENDING REP-NM
  DUPLICATES ARE NOT ALLOWED.
  01 FILLER TYPE IS CHARACTER 172.
  03 REP-NM TYPE IS CHARACTER 8.
  03 DSCRPTN TYPE IS CHARACTER 20.
  03 REP-ST TYPE IS CHARACTER 1.
  03 HEAD1 TYPE IS CHARACTER 64.
  03 HEAD2 TYPE IS CHARACTER 64.
  03 DTEACES TYPE IS CHARACTER 6.
  03 DTEUPDT TYPE IS CHARACTER 6.
  03 FLAG-EDIT TYPE IS CHARACTER 1.
  03 NOBROWSE TYPE IS CHARACTER 2.
RECORD NAME IS COLCON
  WITHIN BURP
  KEY IS ASCENDING COL-NUM
  DUPLICATES ARE LAST.
  01 FILLER TYPE IS CHARACTER 268.
  03 COL-NUM TYPE IS CHARACTER 2.
  03 START TYPE IS CHARACTER 3.
  03 LENGTH TYPE IS CHARACTER 3.
  03 COL-TYP TYPE IS CHARACTER 1.
  03 COL-DEC TYPE IS CHARACTER 3.
  03 COLHED1 TYPE IS CHARACTER 64.
  03 COLHED2 TYPE IS CHARACTER 64.
  03 COLHED3 TYPE IS CHARACTER 64.
  03 COLHED4 TYPE IS CHARACTER 64.
SET NAME IS CONTROL
OWNER IS REPCON
ORDER OF INSERTION LAST.
MEMBER IS COLCON
INSERTION IS AUTOMATIC RETENTION IS OPTIONAL
SET SELECTION IS THRU CONTROL IDENTIFIED BY KEY REP-NM.
END-SCHEMA.
```
NOTE: DDL does not allow the specification of non-character fields.
Also, DDL has a maximum field width of 64 characters.
To overcome the problem of report and column headings requiring 128 characters these fields were bisected for ddl compilation and concatenated after the DBSSGEN (step iv).

The command, "ddl -u burp.ddl", creates the UNIX file, report.sch, which contains the compiled schema. This file is used for the creation of the data base, DSDL, and for the MDBMS reporting utilities (dbstat, dbrep and dbcheck).

Data Storage Definition Language (DSDL)

The DSDL specification for the BURP data base is as follows:

(area burp
  page = 8192 bytes
  size = 60 pages
  buffers = 1.
)

The page size was chosen in consideration of the fact that each page contains a fixed length (76 bytes) page header and at most 32 user records. That is:

page size = 76 + (32 * Maximum record length)
= 76 + (32 * 268)
= 76 + 8576
= 8652

Since the specification was "at most 32 user records", then 8652 is the maximum space requirement per page, hence, 8192, 2 to the power 13, was chosen.

The size, 60 pages, describes the number of pages available to the data base.
The buffers, 1, describes the number of pages to be allocated to an application program when the area is opened.

The command, "dsdl report < burp.dsl", initialises the data base. The compiled schema (report.sch) and the size requirements are combined to create the data base which resides in the UNIX file, burp.
Data Base Sub-Schema Generation (DBBSSGEN)

The DBBSSGEN is the final step in the creation of the BURP data base. It creates a sub-schema that works as an interface between the data base and the application program. The DBBSSGEN command,

```
$ dbssgen -o burp.subcl burp.ddl
=> translate c
=> quit
```

creates a file, burp.subcl, which contains 'C' data structures that correspond to the record layouts of the records in the DDL, i.e. repcon and colcon. These structures have been altered so that single character arrays appear as single characters and 64 character arrays are combined into the required 128 character heading arrays. The altered forms of these structures are stowed in burpdb.h which is included in all application programs that access the data base.
Data Manipulation (DM) Routines

The DM primitives utilised by BURP to retrieve, create and update report control specifications are summarised below. These manipulation primitives are not usable unless the data base has been invoked and opened via the following primitives:

invoke ("report") : Invokes schema - "report". Performed only once per BURP session in the BURP mainline (main.c).

aopen ("burp", usage) : Opens the area for usage. If usage is "retrieval" only the primitives for retrieval purposes are permitted. If usage is "update" all the DM primitives are permitted.

uwa ("repcon", repcon) uwa ("colcon", colcon) : Defines the locations of the data structures (user work areas) of each record.

Retrieval:

findq ("repcon", "rep-nm", "first") : Finds repcon record qualified by the contents of rep-nm in the repcon uwa.

frec ("repcon", posn) : Finds the posn, "first" or "next", occurrence of record repcon.

fset ("control", posn) : Used in sequence following a call to either findq or frec to retrieve the colcon record specified by posn, "first" or "next" beneath the current repcon segment.

get () : Returns the current record to the appropriate uwa.

Creation:

store (rname) : Stores the data from the appropriate uwa specified by rname, "repcon" or "colcon" into the data base. Colcon records are stored beneath the current repcon record.
Update -

modify ( rname )
: Replaces the current rname record, "repcon", or "colcon", with the contents of the appropriate uwa.

delete ( rname )
: Deletes the current rname record. If rname is "repcon" then the repcon segment is deleted along with all corresponding sets and colcon records. If rname is "colcon" then the current colcon record is deleted along with the sets of which it is a member.

close ( "burp" )
: Closes the area. Any changes made are moved to the data base.

Error Conditions

The status of each call to a DM primitive is monitored by the primitive call, dbsr ( &DBStatus ), which returns the contents of the data base status register in DBStatus. If DBStatus is considered to be erroneous the message, "DATA BASE ACCESS ERROR : 99999" will be displayed on the message line of the current BURP screen. 99999 is the contents of DBStatus, the first 2 identify the DM primitive that caused the error. For example:

04 - delete
08 - store
10 - freec

The remaining 3 digits identify the error. A complete list of which may be found in the MDBMS User's Manual.
Data Base Maintenance

The performance of the BURP data base is an integral part of the overall efficiency of the BURP system. MDBMS does not support the re-use of deleted space, hence, it is necessary to initialise the data base from time to time, depending on the work load placed on the system, to maintain its peak efficiency. The dbstat utility of MDBMS is a good way to monitor the amount of used, deleted and free space in the BURP data base. (see below for an example of the dbstat output from the BURP data base when it is empty). If the amount of free space is not monitored and is reduced to the minimum, a data base access error will result in a store operation with a return code of 08703 (Space exhausted in area).

Data base initialisation is done simply by invoking the shell command INITIALISE which performs the following tasks:

a) The loaddown file is removed if it exists.
b) The contents of the data base are loaded down to a file (load).
c) The data base schema is recompiled. (ddl)
d) The data base is initialised. (dsdl)
e) The contents of the file are loaded back onto the data base.

NOTE: The INITIALISE utility should not be invoked whilst users are connected to the BURP system as loss of updates and data inconsistency will result. It is recommended that the INITIALISE function be performed following completion of the CLEANUP Utility, that is, once per week.

Dbstat Output

Area: 'burp' (60 pages)

<table>
<thead>
<tr>
<th></th>
<th>Average</th>
<th>Minimum</th>
<th>Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Free space/page</td>
<td>8116.7</td>
<td>8101 (p)</td>
<td>8117 (p)</td>
</tr>
<tr>
<td></td>
<td>100.02 %</td>
<td>99.83 %</td>
<td>100.02 %</td>
</tr>
<tr>
<td>Deleted space/page</td>
<td>0.0</td>
<td>0 (p)</td>
<td>0 (p)</td>
</tr>
<tr>
<td></td>
<td>100.00%</td>
<td>100.00%</td>
<td>100.00%</td>
</tr>
<tr>
<td>Free rec slots/page</td>
<td>31.0</td>
<td>30 (p)</td>
<td>31 (p)</td>
</tr>
<tr>
<td></td>
<td>96.82 %</td>
<td>93.75 %</td>
<td>96.87 %</td>
</tr>
</tbody>
</table>
WHAT HAPPENS INTERNALLY WHEN THE CATALOGUE IS USED

When BROWSE, EDIT or the PRINT Utility is requested the CATALOGUE Facility is invoked to allow the user to select the desired report. The CATALOGUE Facility Screen is displayed along with the report names their description, status, last access date and last update date. The report names are read in alphabetic order from the data base until the end of the data base or the end of the screen is detected. When there are more reports on the data base than on the screen, use of the CTRL-N key forces a qualified data base call on the last report name on the screen to set data base position. Sequential "next" calls are then made to extract the report names to be displayed. Each time a screen of report names is displayed the report name at the top of the screen is saved so that if a CTRL-P scroll operation is requested the top of the previous screen is used to restore position in the data base.

When the LOCATE command is issued the report name entered in Data Entry Line is searched for and if found becomes the top of the display screen. Otherwise the next report name in alphabetic sequence becomes the top of the display screen. To minimise data base accessing in the searching process, tests are made against the report names that make up the tops of the scrolling pages to determine where sequential data base reads and name testing should begin.

When a report is selected for processing, either by entering the report name in the Data Entry Line or by selecting the report from the list of names on the screen, the procedure, HasAccess() is invoked to ensure that the user has the necessary access.

HasAccess(), performs the following edits on the report name:

a) The corresponding data base repcon record is retrieved. If the record was not found and the request was made for the BROWSE or PRINT Facility then an appropriate error message is displayed. Otherwise an EDIT session is invoked for a new report.

b) Ensures that the user has at least read access for the BROWSE and PRINT Facilities and both read and write access for the EDIT Facility. Access authority checks are made using the access() primitive.

c) If the EDIT Facility is requested and the flag-edit field on the data base is set to TRUE then access to the report is not permitted as the report is currently being edited by another user.
On successful completion of the above edits the flag-edit value in the data base is changed to TRUE if the EDIT Facility is required, or the nobrowse field is incremented if the BROWSE Facility is requested, before control is passed to the appropriate Facility. Similarly, these fields are reset when control is returned to the CATALOGUE.

WHEN A BROWSE/EDIT SESSION IS INITIATED

When an edit session is initiated, if the report is a new report the column specification screen is displayed for the user to establish his required column specifications. If the user cancels this function he is returned to the catalogue screen and the edit session is cancelled.

When a browse or edit session is initiated, the column specifications for the current report are established by invoking the ReadColumnSpecs routine if the report already exists or by reading the specifications established by column specifications in the case that the report is new.

After establishing the report column specifications, the users file (if it is an existing report) is copied into a temporary file the LinePool and TextLines linked lists are established. All maintenance of the report lines and their logical sequence is then performed through calls to the Line Cache routines and the linked list maintenance routines.

After the report control data structures have been created, the first page of report data, the column and report headings and the BURP browse or edit screen headings are displayed on the screen, awaiting the user's first response.
WHEN THE MENU COMMAND IS USED

When the MENU command is used, control is returned through the invoking screen functions to the BURP Mainline which displays the BURP Menu. If the MENU command was invoked from EDIT then the SAVE command is initiated prior to control being returned to the mainline.

WHEN THE END COMMAND IS USED

When the END command is used, control is returned to the screen function that initiated the present screen function. If the END command was invoked from EDIT then the SAVE command is initiated prior to control being returned to the previous screen function. If the END command was invoked from HELP then the contents of the taken on execution of HELP are restored before control is returned.
WHEN THE FIND COMMAND IS USED

When the FIND command is used, the Data Entry Line is deciphered to determine the find string and any text or column boundary constraints. There are three distinct types of finds that can be made; these different types may be combined and are categorised by:

a) **Basic Full Report Find**

This type of find searches the complete report bounded from the first character in the first column to the last character in the last column. It is specified on the data entry line as

```plaintext
==> john
```

or in the case that the find string contains blanks,

```plaintext
==> "john smith"
```

b) **Full Report Text Find**

This type of find searches the complete report bounded from the first character in the first column to the last character in the last column. The Text Find searches for all occurrences of the string where each character in the string may be in upper or lower case. It is specified on the data entry line with a first character 't' and surrounded by double quotes ('"'), as follows

```plaintext
==> t"john smith"
```

c) **Bounded Find**

This type of find searches the complete report, given a column or a column range to search. This type of find is specified on the data entry line as

```plaintext
==> "john 7" 2
```

this will search column 2 for the string 'john 7'

```plaintext
==> "john 7" 3 7
```

this will search columns 3 to 7 inclusive, for the string 'john 7'

From the EDIT mainline there are several parameters passed to the FIND routine, these include the search string, and the x-y position at which the search is to begin. The Data Entry Line buffer is first passed to the FIND lexical analyser for deciphering of the find string, whether text mode is to be used and determination of the effective search boundaries. Provided the syntax is correct a linear search algorithm is then employed to search the report data from the required find start position until an occurrence of the find string of the end of the report data is encountered. The search algorithm uses the TextLines linked list and the FindFrameBlockNo() to search the report lines in their logical sequence. A status, string location position and error message are passed back to the invoking routine.
WHEN THE RFIND COMMAND IS USED

When the RFIND (repeat find) command is used, the Data Entry Line is deciphered to determine the find string and any text or column boundary constraints, as in the FIND command. The RFIND command, however, differs from the FIND command in that the search string is remembered and each additional find of the same string starts from the position immediately after the last found string occurrence. Additionally, the Command Cell is kept on the RFIND command position on the command line until the user explicitly moves it.

See the previous section titled "WHEN THE FIND COMMAND IS USED".
WHEN THE PROJECT COMMAND IS USED

When the PROJECT command is used, the Project Specifications List is created to facilitate the construction of the resultant report. The column numbers specified by the user in the Data Entry Line are extracted in sequence. For each column to be projected a node is added to the Project Specification List containing the starting position and length of the column from the Column Specifications List. The starting position of the column in the resultant report is calculated and moved to the node.

When the Project Specifications List is complete the Column Specifications List for the resultant report is constructed. Each report line in the TextLines linked list is modified to contain only the data for the projected columns in the sequence specified by the Project Specifications List.

If the user required projection with suppression of like report lines then the SORT command is used with a suppress option before the space allocated to the Project Specifications List is freed and control is returned to the BROWSE facility to display the resultant report.
WHEN THE SELECT COMMAND IS USED

The SELECT command is used to apply boolean expressions to columns of data to suppress the display of report lines that do not satisfy the boolean expression being applied. The boolean expression involves combinations of constant factors, column numbers, preceded with a 'c' to distinguish them from the constant factors, and the following operators:

- = - equal to
- <> - not equal to
- > - greater than
- >= - greater than or equal to
- () - to order the precedence of operations

When the SELECT command is used, the Data Entry Line is deciphered to determine the boolean test to be applied to the lines of the report. A typical selection may look like:

```plaintext
===> c2 = "john smith" & (c5 <> mary | c6 >= 23.72)
```

The deciphering of the boolean test is performed by a lexical analyser tailor written for BURP's Select command and a Yacc ** generated parser.

The rules given in the Yacc specification are as follows:

```plaintext
%start final
%token AND OR RELOP COLUMN STRING NUMERIC
%left OR
%left AND
%

/* beginning of rules section */

final : expr { TreeRoot.dummytreeptr = $1; )

expr : expr AND expr { $$ = MakeNode(....); )
| expr OR expr { $$ = MakeNode(....); )
| piece

piece : COLUMN RELOP COLUMN { $$ = MakeNode(....); )
| COLUMN RELOP STRING { $$ = MakeNode(....); )
| COLUMN RELOP NUMERIC { $$ = MakeNode(....); )
| ' ( expr ) ' { $$ = $2; )
```

```
As the input is parsed, a binary expression tree is built which represents the comparison operations and their precedence.

When the syntax of the boolean expression has been successfully evaluated, the column/constant types are compared to ensure that numeric columns are only compared with numeric columns or numeric constants. If any discrepancy is discovered, an appropriate error message is returned to the invoking procedure.

When the types of columns and constants has been successfully checked, the boolean expression is evaluated for each line in the report. This is done via recursive decent of the binary expression tree which was built by the parser. An integer with value 1 (true) or 0 (false) is returned to the evaluation routine. When the false value is returned a call to the DeleteLines routine is made, in order to remove the line which did not satisfy the selection expression from the TextLines linked list.

**Yacc : Yet Another Compiler Compiler**, Stephen C. Johnson, Bell Laboratories, Murray Hill, New Jersey
WHEN THE JOIN COMMAND IS USED

When the JOIN command is used, the Column Specifications of the join report are retrieved from the data base and the Join Specifications Screen is presented to the user. This screen contains layouts of both the current report and the join report. The specification of which column(s) of both reports are to make up the Join Keys is done by entering the same Join Number in the required column of each report.

If the SUBMIT command is used the Join Numbers entered in the current report’s columns are matched against the Join Numbers entered in the join report’s columns. For each Join Number a node is added to the Join Specifications List containing the column number, start and length of the corresponding columns.

When the Join Specifications List is completed both reports are sorted on the columns which make up the Join Keys by invoking the SORT procedure. After sorting the Column Specifications for each column of the join report that are not part of a Join Key are added to the Column Specifications List of the current report. The TextLines linked list is used to extract the lines in the current report. The file containing the sorted join report is read and the Join Specifications List is used to compare the data from both report lines. If the Join Keys match then the data in the columns from the join report is added to the current report line, otherwise the current report line is removed from the current report or a new line is added to the current report. This joining procedure is continued until the end of both files is detected. The join performed is a natural join which can best be described by the following example.

<table>
<thead>
<tr>
<th>Current Report</th>
<th>Join Report</th>
<th>Resultant Report</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>A</td>
<td>A</td>
</tr>
<tr>
<td>A</td>
<td>B</td>
<td>A</td>
</tr>
<tr>
<td>B</td>
<td>E</td>
<td>B</td>
</tr>
<tr>
<td>D</td>
<td>E</td>
<td>E</td>
</tr>
<tr>
<td>E</td>
<td>E</td>
<td>E</td>
</tr>
<tr>
<td>F</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

On completion of the JOIN the space allocated to the Join Specifications List and the Column Specifications List for the join report is freed and the temporary file containing the join report is unlinked before control is returned to the BROWSE Facility to display the resultant report.
WHEN THE SORT COMMAND IS USED

When the SORT command is used, the Data Entry Line is deciphered to determine the type of sort to be performed. The SORT command serves as an interface to the UNIX sort function, by building the necessary command string from the user's specifications. There are two types of sort performed by this function,

a) Full File Sort.
   The report is loaded into a temporary file from the TextLines linked list and one of the following UNIX system calls are made:
   i) ascending : sort < BURPa99999 > BURPb99999
   ii) descending : sort -r < BURPa99999 > BURPb99999
   iii) suppression : sort -u < BURPa99999 > BURPb99999

   The temporary file BURPb99999 becomes the temporary report file for the EDIT or BROWSE session. The TextLines linked list, Line Cache, etc., are reloaded from this temporary file.

b) Column Sort.
   Each line of the report is loaded into a temporary file. If the report lines are read from the TextLines linked list unless the sort request is to sort the Join Report (see "WHEN THE JOIN COMMAND IS USED"). In this case the temporary file is loaded directly from the appropriate User File. Before each report line is loaded into the temporary file an Internal Field Separator, IFS, currently a tilde (~), is moved to the single character that separates the data in each column. This IFS character facilitates the identification of each column by the UNIX sort function. The UNIX sort function's IFS character is changed from the default whitespace characters to a tilde using the -t option. The following examples show how the user's input is translated into the required Unix system call:
   i) user input : 1 2 4d
      system call : sort +0 -1 +1 -2 +3 -4 -r -t~
   ii) user input : 1nd 2 s
      system call : sort +0 -n -1 -r +1 -2 -u -t~

   Input/Output re-direction is the same as in a Full File sort. On completion of the sort the TextLines linked list, Line Cache etc., are reloaded from the sorted temporary file changing all IFS characters back to a blank.

   All temporary files no longer required are unlinked before control is returned to the invoking procedure.
WHEN THE MATH COMMAND IS USED

The MATH command is used to apply mathematical expressions to numeric columns of data. Expressions must contain a target column identifier and may be self referencing. The mathematical expression involves combinations of constant factors, column numbers, preceded with a 'c' to distinguish them from the constant factors, and the following operators:

* - multiplication  / - division
+ - addition  - - subtraction
() - to order the precedence of evaluation

NB. operators * and / taken precedence over operators + and /.

When the MATH command is used, the Data Entry Line is deciphered to determine the equation to be applied to the lines of the report. A typical math expression may look like:

```latex
\text{expression} = c2 = c3 \times ((25.6 + c8 - c4) / (c2 / 100))
```

The deciphering of the expression is performed by a lexical analyser tailor written for BURP's Select command and a Yacc generated parser.

The rules given in the Yacc specification are as follows:

```latex
%start final
%token COLUMN CONSTANT MULT DIVIDE ADD SUBT
%left ADD SUBT
%left MULT DIVIDE
%
/* beginning of rules section */

final : COLUMN '=' expr (strcpy(target,$1); TreeRoot = $3; )
;
expr : expr MULT expr ( $$ = MakeNode(...); )
| expr DIVIDE expr ( $$ = MakeNode(...); )
| expr ADD expr ( $$ = MakeNode(...); )
| expr SUBT expr ( $$ = MakeNode(...); )
| piece

piece : COLUMN ( $$ = MakeNode(...); )
| CONSTANT ( $$ = MakeNode(...); )
| \text{'} expr \text{'} ( $$ = $2; )
;
```
As the input is parsed, a binary expression tree is built which represents the atomic mathematical operations and their precedence. Only columns with numeric types may specified in an expression.

When the syntax of the expression has been successfully parsed, a dummy evaluation is performed to ensure that the target column is large enough to hold the result of the expression. If the target is not large enough, the expression is not evaluated and a message is returned to the invoking procedure. The evaluation of the expression is done via recursive decent of the binary expression tree which was built by the parser. A double precision floating point value is returned to the evaluation routine; this value is converted from double float to alphanumeric, based on the formating rules defined in the column specifications. Any blank field referenced during evaluation will be converted to zero. An attempt to divide by zero will result in the intermediate result being set to zero, and an appropriate error message will be returned to the invoking procedure after evaluation of the expression for all the report lines.

**Yacc : Yet Another Compiler Compiler , Stephen C. Johnson, Bell Laboratories, Murray Hill, New Jersey**
WHEN THE RESTORE COMMAND IS USED

When the RESTORE command is used, all changes made since the last SAVE or UPDATE command are ignored.

If the RESTORE command is invoked from the EDIT or BROWSE Facilities then the current temporary file is re-created and the appropriate User File is re-loaded as per "WHEN AN EDIT/BROWSE SESSION IS INITIATED".

If the RESTORE command is invoked from the DESCRIPTION/STATUS Utility then the current description and status displayed on the screen are replaced with the description and status from the data base.

If the RESTORE command is invoked from the SECURITY Facility then the report access permissions currently displayed on the screen are replaced with the reports actual access permissions.
WHEN THE COLUMN COMMAND IS USED

When the COLUMN Command is used, control is passed to the Column Specifications Facility which creates a New Column Specifications List (Newlist) to facilitate the alteration of the column specifications of a report. The Newlist has the same form as the Column Specifications List (OrigList) in that there is one node for each column. However, each node of the Newlist contains the following extra information:

Finish Position: This field contains the finishing position of each column. This field is displayed on the screen and is used to ensure that when a column length is altered that the resulting report does not exceed the maximum report width.

Old Column Number: This field contains the original column number. This field is used in conjunction with the Origlist to perform the necessary updates to the User File. This field is not displayed.

Previous Pointer: This field contains a pointer to the previous node in the list for scrolling purposes.

If an EDIT session of a new report is invoked then the COLUMN command is invoked automatically. In this case the Origlist doesn't exist so the Newlist is created with one node in which the Column Number field is set to "1" and all other fields are initialised.

If the user alters the length of a column the finishing position of that column, and both the start and finish positions of each remaining column to the end of the list are calculated automatically by the RecalcPositions () procedure.

When the ISRTCOL command is issued the AllocColumn () procedure is invoked to insert the specified number of nodes after the node identified by the Data Cell. The column number in each node from the insert position is then updated to maintain a sequence by the RecalcNumbers () procedure.

When the DLETCOL command is issued the FreeColumn () procedure is invoked to delete the specified number of nodes starting from the node identified by the Data Cell. The column numbers, start and finish positions of the columns after the deleted columns are re-calculated.
When the COPYCOL command is issued a number of nodes are copied from one position in the Newlist to another. The first step of this command identifies the number of nodes to be copied and the starting node. A check is made at this stage to ensure that the duplication of these columns will not exceed the report width maximum. The second step of this command identifies the node where the copy is to be made. The nodes are copied by invoking the CopyColNewList() procedure, this procedure finds the node to be copied, inserts the new node using the AllocColumn() procedure and then copies the data into the new node. The column numbers, start position and finish position in each node starting from the copy to position are re-calculated.

When the MOVECOL command is issued a number of nodes are moved from one position in the Newlist to another. The first step of this command identifies the number of nodes (columns) to be copied and the starting node. The second step of this command identifies the node, to where the move is to be made. The nodes are first copied using CopyColNewList() procedure and then deleted from the old position using the FreeColumn() procedure. The column numbers, start and finish positions are recalculated as in the other commands.

When the UPDATE command is issued the contents of the Newlist are checked for errors. If the Newlist is valid then Column Specifications are updated as follows:

a) A Changelist is created from the Newlist and the Origlist. Each node corresponds to the changing of an original column's specifications and contains the following data:
   - FlagCharType - signals that the column is to become a character column.
   - NewStart - the original column's new start position.
   - OldStart - the original column's old start position.
   - NewLength - the original column's new length.
   - OldLength - the original column's old length.
   - NewNumDec - the original column's new number of decimals.

b) The Newlist is used to create the Column Specifications List for the resultant report.

c) The Textlines linked list is used to extract the report lines from the temporary file. Each line is rebuilt from the Changelist. Changed Numeric columns are reformatted using the PutNum() procedure.

d) The space allocated to the Origlist, Newlist and Changelist is freed using the free() primitive.
WHEN THE INSERT COMMAND IS USED

When the INSERT command is used the following steps are taken to insert the specified number of lines into the report:

a) The InsertLines() procedure is called, passing the number of lines to be inserted and the position at which the lines are to be inserted.

b) For each line to be inserted, a call is made to the AllocLine routine to allocate a node from the LinePool and insert it at the desired place in the TextLines linked list. A line cache frame is allocated for the new report line and the actual report line is initialised to blanks.

WHEN THE DELETE COMMAND IS USED

When the DELETE command is used the following steps are taken to delete the specified number of lines from the report:

a) The DeleteLines() procedure is called, passing the number of lines to be deleted and the position at which the lines are to be deleted.

b) For each line to be deleted, a call is made to the FreeLine routine to remove the affected nodes from the TextLines linked list; as nodes are removed they are placed at the head of the LinePool linked list. This practice of reclaiming unused entries ensures that space allocated of nodes and space allocated in the temporary file is not wasted.
WHEN THE MOVE COMMAND IS USED

When the MOVE command is used the following steps are taken to move the specified number of lines in the report:

a) The MoveLines() procedure is called, passing the number of lines to be moved and the position to which the lines are to be moved.

b) For each line to be moved, a call is made to the AllocLine routine to allocate a node from the LinePool and insert it at the desired place in the TextLines linked list. A line cache frame is allocated for the new report line and then the actual report line is copied from its original position to its new position. The FreeLine routine is then called to remove the original node from the TextLines linked list; when a node is removed it is placed at the head of the LinePool linked list.

WHEN THE COPY COMMAND IS USED

When the COPY command is used the following steps are taken to move the specified number of lines in the report:

a) The CopyLines() procedure is called, passing the number of lines to be copied and the position to which the lines are to be copied.

b) For each line to be copied, a call is made to the AllocLine routine to allocate a node from the LinePool and insert it at the desired place in the TextLines linked list. A line cache frame is allocated for the new report line and then the actual report line is copied from its original position to its new position.
WHEN THE PRINT COMMAND IS USED

When the PRINT command is used, the Print Specifications Screen is displayed. The user has the ability to alter the default print specifications and to request the totalling of columns, as desired. If the SUBMIT command is used then a print request is built in the following manner:

A temporary file is created to store the formatted report. If the PRINT command was invoked directly from either the EDIT or BROWSE Facility then the report data is read from the TextLines linked list. Otherwise the report data is taken from the User File specified by the user when the PRINT Utility is requested from the Utilities menu.

The report headings are set up as per the Print Specifications and are moved to the print file.

If the user requires totalling of columns then a Column Totals List is created. Each node of this list contains the column number, start position and length of each column to be totalled as well as a field in which the running column total is stored.

For each report line the value in the columns to be totalled is added to the corresponding total in the Column Totals List. If printing of of totals only was not requested then the report line is moved to the print file. The column totals are formatted and moved to the print file and the system call,

```
lp -s < BURPX99999
```

is executed for each copy of the print file requested to send the print file to the printer.

Before control is returned to the invoking procedure the space allocated to Column Totals List is freed and the temporary print file is unlinked.
WHEN THE SAVE COMMAND IS USED

When the SAVE command is used, the following steps are taken to save the contents of the report currently being edited or browsed:

a) The corresponding report User File is created using the creat () primitive.
b) The report lines are retrieved from the TextLines linked list by the FindFramBlockNo () procedure and are written to the User File.
c) The UpdColumnSpecs () procedure is called to move the contents of the Column Specifications List and the report heading to the data base. If the report being saved is a new report then a repcon record is stored in the data base containing the report defaults and a colcon record is stored for each node of the Column Specifications List. Otherwise the date last updated and report heading fields are modified and all colcon segments are deleted. The new colcon segments are then stored as above.

WHEN THE HELP COMMAND IS USED

When the HELP command is used, the file names from the /u/p/321/g5/help directory that contain the help information are moved to a static filename array. Each file contains a single screen of help text pertaining to the current facility being used.

The procedure, help (), is invoked which saves the contents of the current screen before displaying the first page of help information. The pages of text are displayed in the sequence specified by the order of the filename array when the ENTER key or CTRL-N is pressed by the user. Usage of CTRL-P displays the previous page of help text. The display of the pages wraps around in both directions when either the bottom or the top of filenames in the array is detected.

When the END command is used the saved screen is restored before control is returned to the invoking screen function.
WHEN THE PRINT UTILITY IS USED

When the PRINT Utility is used the CATALOGUE Facility is invoked to allow the user to select the report name to be printed. See "WHEN THE CATALOGUE IS USED".

When the report to be printed is selected from the CATALOGUE Facility the PRINT Command is invoked. See "WHEN THE PRINT COMMAND IS USED".

WHEN THE RENAME UTILITY IS USED

When a report name to be renamed is entered the HasAccess () procedure is invoked to ensure that :-

a) The report exists.
b) The user has both read and write access to the report.
c) The report is not currently being edited or browsed.

The new report name is checked for validity and non-existence by the RptNoExist () procedure.

When the UPDATE command is issued the following steps are taken to rename the report:-

a) The ReadColumnSpecs () procedure is called to retrieve the Column Specifications for the report to be renamed.
b) The repcon record is retrieved and a copy of the contents is stored in the data base under the new report name.
c) The delete () primitive is called to delete the repcon and colcon segments of the renamed report from the data base.
d) A colcon record for each node of the Column Specifications List is stored in the data base under the new report name.
e) The following system call is performed to move the contents of the old User File to the new User File.

mv /u/p/321/g5/UserFiles/XX /u/p/321/g5/UserFiles/YY

Where XX is the old report name and YY is the new report name.
WHEN THE DELETE UTILITY IS USED

When a report name to be deleted is entered the HasAccess() procedure is invoked to ensure that:

a) The report exists.
b) The user has both read and write access to the report.
c) The report is not currently being edited or browsed.

When the UPDATE command is issued the following steps are taken to rename the report:

a) A qualified data base call is made to position the data base at the report name to be deleted.
b) The delete() primitive is called to delete the repcon and colcon segments of the current report.
b) The following system call is performed to delete the appropriate User File.

rm /u/p/321/g5/UserFiles/XX
Where XX is the report name to be deleted.

WHEN THE COPY UTILITY IS USED

When a report name to be copied is entered the HasAccess() procedure is invoked to ensure that:

a) The report exists.
b) The user has at least read access to the report.

The "copy to" report name is checked for validity and non-existence by the RptNoExist() procedure.

When the UPDATE command is issued the following steps are taken to copy the report:

a) The ReadColumnSpecs() procedure is called to retrieve the Column Specifications for the report to be copied.
b) The repcon record for the copy report is retrieved and a copy of the contents is stored in the data base under the "copy to" report name.
c) A colcon segment for each node of the Column Specifications List is stored in the data base under the "copy to" report.
d) The following system call is performed to copy the User File.

cp /u/p/321/g5/UserFiles/XX /u/p/321/g5/UserFiles/YY
Where XX is the copy report name and YY is the "copy to" report name.
e) The following system call is performed to give group write access to the "copy to" User File.

chmod g+w /u/p/321/g5/UserFiles/YY
WHEN THE DESCRIPTION/STATUS UTILITY IS USED

When a report name is entered the HasAccess () procedure is invoked to ensure that:
   a) The report exists.
   b) The user has both read and write access to the report.

If the report name is validated then the repcon record for the report is retrieved from the data base and the report's description and status are displayed.

When the UPDATE command is issued the description and status in the data base for the current report are replaced by the contents of the corresponding fields on the screen.

When the RESTORE command is issued the description and status on the screen are replaced by the contents of the corresponding fields from the data base for the entered report name.
WHEN THE SECURITY UTILITY IS USED

When a report name is entered the HasAccess () procedure is invoked to ensure that:

a) The report exists.
b) The user has both read and write access to the report.

If the report name is validated then the access permissions for the report are retrieved by the system call,

```
stat ( "/u/p/321/g5/UserFiles/XX", &stbuf )
```

where XX is the report name and stbuf is a structure of type stat ( declared in the include sys/stat.h ) and contains the fields:

- st_uid : owner identity.
- st_gid : group identity.
- st_mode : contains the owner, group and other access permissions. i.e. read, write and execute.

Owner permissions are extracted from st_mode by masking st_mode with the octal constant, 0000600, and testing the resulting value value. That is:-

- 0000600 : Read and write access.
- 0000400 : Read access only.
- 0000200 : Write access only.
- otherwise : No access.

Group permissions are extracted from st_mode by masking st_mode with the octal constant, 0000060, and testing the resulting value for 0000060, 0000040 etc.. as above.

Other permissions are extracted from st_mode by masking st_mode with the octal constant, 0000006, and testing the resulting value for 0000006, 0000004 etc.. as above.

When the UPDATE command is issued the getuid () primitive is invoked to obtain the current user identity. If the user identity does not equal the owner identity of the report ( st_uid ) then the user is not permitted to update the access permissions and an error message is displayed. Otherwise the access permissions are updated using chmod system calls. For example :

<table>
<thead>
<tr>
<th>Permission</th>
<th>System Call</th>
</tr>
</thead>
<tbody>
<tr>
<td>Add owner read access.</td>
<td>chmod u+r /u/p/321/g5/UserFiles/XX</td>
</tr>
</tbody>
</table>
| Add Group read and write access. | chmod g+r /u/p/321/g5/UserFiles/XX  
| | chmod g+w /u/p/321/g5/UserFiles/XX |
| Remove other read and write access. | chmod o= /u/p/321/g5/UserFiles/XX |

Where XX is the report name.
WHEN THE CLEANUP UTILITY IS USED

When the CLEANUP Utility is used, the following steps are taken to delete "old" reports. An "old" report has a Temporary status and a last access date less than 30 days from the current date.

a) The `time()` procedure is invoked to obtain today's date in seconds since the 1st January 1970, GMT. The number of seconds since the above date 30 days ago is calculated by subtracting 30 x 60 x 60 from today's date in seconds.

b) The `localtime()` procedure is called to obtain the calendar format of the date 30 days ago. (`localtime` returns a pointer to a structure of type, `tm`. The time functions and their relevant structure declarations are stored in `time.h`).

c) Each report record in the data base is read and if the report has a Temporary status the last access date is checked.

d) If the report is to be deleted then the `delete()` primitive is invoked to delete the report and all its colcon records from the data base.
The following system call is used to delete the corresponding User File:
```
rm /u/p/gs/UserFiles/XX
```
Where XX is the report name.
REFERENCE MANUAL
# Table of Contents

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>BURP ENVIRONMENT</td>
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<td>Report Environment</td>
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<td>Menu Option Selection</td>
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<td>Scrolling Options</td>
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<td>2</td>
<td>FACILITIES AND UTILITIES</td>
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<td></td>
<td>Main Menu Facility</td>
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<td>Report Catalogue Facility</td>
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<td>Browse Facility</td>
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<td>Join Specifications Facility</td>
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<td>Edit Facility</td>
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<td>Column Specifications Facility</td>
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<td>Utilities Menu Facility</td>
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<td></td>
<td>Print Report Utility</td>
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<td></td>
<td>Copy Report Utility</td>
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<td>Rename Report Utility</td>
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<td></td>
<td>Delete Report Utility</td>
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<td>Description/Status Utility</td>
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<td>Report Security Utility</td>
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<td></td>
<td>Tutorial Facility</td>
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<td>3</td>
<td>COMMANDS</td>
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<td>Cancel Command</td>
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<td>Column Command</td>
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<td>Copy Command</td>
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<td>Copycol Command</td>
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<td>Delete Command</td>
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<td>Dletcol Command</td>
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<td></td>
<td>End Command</td>
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<td></td>
<td>Find Command</td>
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<td></td>
<td>Help Command</td>
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<td></td>
<td>Insert Command</td>
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<td>Join Command</td>
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<td>Line Command</td>
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<td>Math Command</td>
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<td>Menu Command</td>
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<td>Move Command</td>
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<td>Movecol Command</td>
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<td></td>
<td>Print Command</td>
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<td></td>
<td>Project Command</td>
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<td>Restore Command</td>
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<td>Return Command</td>
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<td></td>
<td>Rfind Command</td>
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<td></td>
<td>Save Command</td>
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<tr>
<td></td>
<td>Select Command</td>
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<td></td>
<td>Sort Command</td>
</tr>
<tr>
<td></td>
<td>Submit Command</td>
</tr>
<tr>
<td></td>
<td>Update Command</td>
</tr>
<tr>
<td>4</td>
<td>ERROR MESSAGES</td>
</tr>
</tbody>
</table>
B U R P  E N V I R O N M E N T

REPORT ENVIRONMENT

Report Definition

A report can be viewed as a series of horizontal lines of data formatted into variable width, vertical columns (fields), with each horizontal line consisting of a set of related data.

Report Name

The name of a report is unique and can be a maximum of 8 characters. It must start with an alphabetic character and can contain alphanumeric and national (@ # $) characters.

Report Specification Restrictions

The report can be a maximum of 126 characters wide and the length of the report is restricted to the limit of the hardware/software environment.

A report can contain a maximum of 63 columns. Each column is separated by a blank character, which is included in the width of the report. There are two types of columns - character and numeric. Only the numeric column is restricted to a width of 16 characters for mathematical calculation purposes.

Column specifications for a report are not fixed upon its creation.

Report Storage

The report data is stored in a flat file and the report specifications are stored on a database. (see BURP TECHNICAL REPORT for a more detailed explanation)

Report Security

Each report has its own access permission tags which specify the accessing permissions of users for that report. A report has permission tags for the owner of the report (the person who created the report), the group which the owner belongs to, and for all users of BURP. For each of these, the owner of the report can set up the permission tags in the Report Security Utility to READ and/or WRITE access. Read access gives only browse, print and copy access to a report, whereas write access gives you browse, edit, print, copy, rename, delete and update access to a report.
Report Catalogue

A catalogue of all the reports which currently exist in BURP is displayed whenever a report is to be selected for browsing, editing or printing. (see Report Catalogue Facility section in this manual for further details)

Report Display

A report may be displayed in the Browse or Edit Facilities. The report is displayed as follows: (see Figure 1.1)

- Report Name - the name of the report currently being browsed or edited. It is displayed on the second line of the screen, enclosed within brackets.
- Report Heading - the heading of the report is displayed on the fourth line of the screen.
- Report Column Headings - the headings for each column of report data are bounded by the width of the column and are displayed on the fifth and sixth lines of the screen.
- Column Number Line - the column numbers for each column are displayed on the seventh line of the screen.
- Report Data Section - the report data is displayed on the remaining section of the screen (excluding the very last line).

Figure 1.1 Edit Facility - Display of 'STUDENTS' report.

```
|EDIT|MENU|END|RETURN|INSERT|DELETE|MOVE|COPY|PRINT|SAVE|CANCEL|HELP|.
<table>
<thead>
<tr>
<th></th>
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<tbody>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>STUDENT</td>
<td>CSCI 201  - MID SESSION EXAM RESULTS</td>
<td></td>
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<tr>
<td>NUMBER</td>
<td>STUDENT NAME</td>
<td>RESULT</td>
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</tr>
<tr>
<td>18200356</td>
<td>ANDREWS RAYMOND GREG</td>
<td>PASS</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18203671</td>
<td>ATKINSON BRUCE ROBERT</td>
<td>CREDIT</td>
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<tr>
<td>18212985</td>
<td>BAILEY GEOFF THOMAS</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>18200506</td>
<td>BAKER JOHN DAVID</td>
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<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
```

A report may be a maximum of 126 characters wide. The screen can only display 80 characters at the one time. Also, a report may be longer than the 16 lines of report data that can be displayed at the one time. So, scrolling options are provided to scroll the report display horizontally and vertically. (refer following section - Scrolling Options)

The Report Heading, Report Column Headings and the Column Number Line are only scrolled horizontally so that they are always displayed on the screen. Whereas, the Report Data Section may be scrolled horizontally (with the headings) or vertically.
There are three menu screens in BURP – the BURP Main Menu and the Utilities Menu and the Tutorial Menu. See relevant sections in the FACILITIES AND UTILITIES chapter of this manual for a detailed description of the options which are available from the menus.

The menu options are selected as follows:

**Data Cell**

The Data Cell is an inverse-video portion that is used to select a menu option.

The Data Cell is always visible on the screen and the 'HOME' position of the Data Cell is the facility name in the top left-hand corner of the screen.

The Data Cell is moved by using the arrow keys: down arrow to move down the list of options and the up arrow to move up the list of options.

**Selecting A Menu Option**

A menu option is selected by moving the Data Cell to the required option and pressing the 'ENTER' key.

**NOTE**: To select a menu option the Command Cell must be at its 'HOME' position.
COMMAND EXECUTION

Command Line

The Command Line is the first line of every screen. It displays the name of the current facility, followed by the commands available in that facility. (see Figure 1.2)

Figure 1.2 Browse Facility Command Line

Command Cell

The Command Cell is an inverse-video portion that is used to indicate the command to be executed.

The Command Cell is always visible on the screen and the 'HOME' position of the Command Cell is the facility name in the top left-hand corner of the screen.

Selecting A Command

A command is selected by moving the Command Cell across the Command Line to the required command. The Command Cell is moved by using the 'TAB' key to move it forwards across the Command Line and by using the 'ESCAPE' key to move it backwards.

Executing A Command

A command is executed by moving the Command Cell to the required command and pressing the 'ENTER' key. Some commands may require additional information which is entered on the Data Entry Line. (see following section on Data Entry for an explanation of the Data Entry Line)

Once a command is successfully executed, the Command Cell will be returned to the Home position, except when executing the following commands:
- RFIND command - the Command Cell is not moved to the Home position so that the RFIND command can be repeatedly executed to continue searching for a string occurrence.
- MOVE command - this command is a two step command, and after the first step is executed, the Command Cell is not moved until the second step is completed. Moving the Command Cell off the command before completing the second step will cancel the command. This is the case for all other two step commands - COPY, MOVECOL and COPYCOL.
DATA ENTRY

Data Cell

The Data Cell is an inverse-video portion that is used to indicate a field to update.

The Data Cell is always visible on the screen and the Home position of the Data Cell is the facility name in the top left-hand corner of the screen.

The Data Cell is moved by using the arrow keys: down arrow to move down the screen, up arrow to move up the screen, left arrow to move left across the screen and right arrow to move right across the screen.

A field to be updated is indicated by moving the Data Cell to the required field and pressing the 'ENTER' key.

NOTE: To update a field, the Command Cell must be at its Home position.

Data Entry Line

The Data Entry Line is the second line of each screen which involves data entry. The Data Entry Line is to the right of the '===>' symbol. This symbol only appears when there is a Data Entry Line for that particular screen, otherwise the second line of the screen is blank.

On some screens, the Data Entry Line is preceded by the current report name enclosed in brackets. (see Figure 1.3)

Figure 1.3 Browse Facility Command Line and Data Entry Line

The Data Entry Line is used to enter data for updating fields or to enter information for the execution of commands. The Cursor is used on the Data Entry Line and it may be moved along the Data Entry Line by using the 'CLEAR' key to move it forwards and the 'HOME' key to move it backwards.
Entering Data

Data may be entered into a field by moving the Data Cell to the field to be updated, entering the required data on the Data Entry Line and pressing the 'ENTER' key. (see Figure 1.4)

The Data Entry Line will be cleared and the data will appear in the field indicated by the Data Cell. However, if the data entered on the Data Entry Line is invalid in some way, it will not be moved to the field, it will remain on the Data Entry Line and an error message will be displayed explaining why the data is invalid. Data may be invalid for a number of reasons - it may be too long or of the wrong type, etc..... The error message displayed will explain why the data is incorrect.

Figure 1.4 Edit Facility - 'STUDENT' report.
Step one, enter data and position the Data Cell.

|EDIT : MENU END RETURN INSERT DELETE MOVE COPY PRINT SAVE CANCEL HELP|
|STEMENTS) ===> H DIST|
|================================|=|\CSCI 201 - MID SESSION EXAM RESULTS|
|STUDENT |
|NUMBER  STUDENT NAME RESULT |
|-------|------------------------|------------------|
|8200356 ANDREWS RAYMOND GREG PASS|
|8203671 ATKINSON BRUCE ROBERT CREDIT|
|8212985 BAILEY GEOFF THOMAS |
|8200506 BAKER JOHN DAVID|

Step two, after pressing 'ENTER', the field is updated.

|EDIT : MENU END RETURN INSERT DELETE MOVE COPY PRINT SAVE CANCEL HELP|
|STEMENTS) ===> |
|================================|=|\CSCI 201 - MID SESSION EXAM RESULTS|
|STUDENT |
|NUMBER  STUDENT NAME RESULT |
|-------|------------------------|------------------|
|8200356 ANDREWS RAYMOND GREG PASS|
|8203671 ATKINSON BRUCE ROBERT CREDIT|
|8212985 BAILEY GEOFF THOMAS H DIST|
|8200506 BAKER JOHN DAVID|

To do a simple change of a field which already contains data, such as a mistyped character, redisplay the incorrect field on the Data Entry Line. A field can be redisplayed by moving the Data Cell to that field and using CNTL-D. Now, move the cursor to the mistyped character and change it. Then press 'ENTER' to update the field. If this redisplaying option is available, then CNTL-D will be displayed on the bottom line of the screen, with the scrolling options.
Leading blanks are automatically removed from the data entered on the Data Entry Line when entered into a field. To enter data with leading blanks, use a ‘\n’ to begin your data entry so that the leading blanks are not removed. (see Figure 1.5)

Some fields to be updated may be longer than the Data Entry Line. For example, entering the report heading which may be a maximum of 126 characters. Even though the Data Entry Line is only 64 characters long in the Edit Facility, you may enter a heading longer than the Data Entry Line. Just continue typing and the heading will be scrolled to the left, character by character. The cursor may be moved forwards and backwards along the Data Entry Line to redisplay the heading to check it before you enter it into the report. (see Figure 1.5)

Figure 1.5 Edit Facility – ‘CSCI211’ report displayed.
Steps to enter a report heading with leading blanks and longer than the data entry line.

First 64 characters entered for the report heading, with leading blanks indicated by the ‘\n’.

The report heading is now entered, and the first 3 characters have been scrolled off the left end of the Data Entry Line.

The heading is entered and is displayed in full on the Report Heading Line.
SCROLLING OPTIONS

The display of data may be scrolled using the Scrolling Options provided for that particular screen. The Scrolling Options available for a particular screen are displayed on the bottom line of the screen. (see Figure 1.6) They are:

- CNTL-L: will scroll to the left-most data
- CNTL-R: will scroll to the right-most data
- CNTL-P: will scroll to the prev page of data
- CNTL-N: will scroll to the next page of data

Figure 1.6 Browse Facility Scrolling Options

Scrolling Data

Data may be scrolled vertically a certain number of lines or horizontally a certain number of characters by entering the number on the Data Entry Line and executing the Scroll Option. (see Figures 1.7 and 1.8) Scrolling of a report is confined to the report boundaries, i.e., a horizontal scroll request will scroll to the furthest edge of the report data; this edge is dependent on the total report width.

Figure 1.7 Edit Facility - 'STUDENT' report.
Step one, enter requirements to scroll the report to the right 4 characters.

<table>
<thead>
<tr>
<th>EDIT : MENU END</th>
<th>RETURN</th>
<th>INSERT</th>
<th>DELETE</th>
<th>MOVE</th>
<th>COPY</th>
<th>PRINT</th>
<th>SAVE</th>
<th>CANCEL</th>
<th>HELP</th>
</tr>
</thead>
<tbody>
<tr>
<td>{(STUDENTS)}===&gt;4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>=================================================================&quot;</td>
<td>CSCI 201 - MID SESSION EXAM RESULTS</td>
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<td></td>
<td></td>
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<td></td>
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<td>STUDENT</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>NUMBER</td>
<td>STUDENT NAME</td>
<td>RESULT</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18200356</td>
<td>ANDREWS RAYMOND GREG</td>
<td>PASS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18203671</td>
<td>ATKINSON BRUCE ROBERT</td>
<td>CREDIT</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18212985</td>
<td>BAILEY GEOFF THOMAS</td>
<td>H DIST</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18200506</td>
<td>BAKER JOHN DAVID</td>
<td>CREDIT</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
After the scrolling option CNTL-R is executed, the report will be scrolled left 4 characters.

<table>
<thead>
<tr>
<th>STUDENT</th>
<th>STUDENT NAME</th>
<th>RESULT</th>
</tr>
</thead>
<tbody>
<tr>
<td>1356</td>
<td>ANDREWS RAYMOND GREG</td>
<td>PASS</td>
</tr>
<tr>
<td>1671</td>
<td>ATKINSON BRUCE ROBERT</td>
<td>CREDIT</td>
</tr>
<tr>
<td>1985</td>
<td>BAILEY GEOFF THOMAS</td>
<td>H DIST</td>
</tr>
<tr>
<td>1506</td>
<td>BAKER JOHN DAVID</td>
<td>CREDIT</td>
</tr>
</tbody>
</table>

Figure 1.8 Edit Facility - 'STUDENT' report.
Enter requirements to scroll the report up one line.

After the scrolling option CNTL-N is executed, the report will be scrolled to display the next line of report data. The report headings and the column number line are not scrolled vertically.

<table>
<thead>
<tr>
<th>STUDENT</th>
<th>STUDENT NAME</th>
<th>RESULT</th>
</tr>
</thead>
<tbody>
<tr>
<td>16203671</td>
<td>ATKINSON BRUCE ROBERT</td>
<td>CREDIT</td>
</tr>
<tr>
<td>18212985</td>
<td>BAILEY GEOFF THOMAS</td>
<td>H DIST</td>
</tr>
<tr>
<td>18200506</td>
<td>BAKER JOHN DAVID</td>
<td>CREDIT</td>
</tr>
<tr>
<td>18201733</td>
<td>COWIN CATHERINE JANE</td>
<td>DIST</td>
</tr>
</tbody>
</table>
FACILITIES AND UTILITIES

MAIN MENU FACILITY

The Main Menu Facility is the facility you connect to when you start your BURP session. You can choose one of the facilities displayed on the screen:

- Browse Facility - to browse a report
- Edit Facility - to edit a report
- Utilities Facility - to perform utility functions
- Tutorial Facility - to display BURP tutorial information
- Exit Facility - to end a BURP session

All these facilities are discussed in following sections of this chapter except for the Exit Facility. Selection of the Exit Facility option will terminate your session with BURP.

The HELP command is also available from the Main Menu Facility. Execution of this command will return you the Tutorial Menu screen as would the selection of the Tutorial option.

Figure 2.1 BURP Main Menu Screen

---

For HELP: press 'TAB' key once, then press 'ENTER'
REPORT CATALOGUE FACILITY

The Report Catalogue Facility displays the existing reports in BURP, in alphabetical order. The Report Catalogue Screen is displayed whenever the Edit or Browse Facility is selected from the Main Menu Screen or whenever the Print Utility is selected from the Utilities Menu Screen. The catalogue of reports is displayed for the selection of an existing report to either browse, edit or print, or to specify a new report to create in the Edit Facility.

The following information is displayed for each report:
- Report Name: the unique name of a report.
- Report Description: a short text to describe the report, maintained in the Description/Status Utility and defaults to the Report Name when the report is created. (see the Report Description/Status Utility section in this chapter)
- Report Status: indicates if the report has a temporary or permanent status, maintained in the Description Status Utility and defaults to temporary. (see the Report Description/Status Utility section in this chapter)
- Last Access Date: date the report was last browsed or edited.
- Last Update Date: date the report was last edited.

Figure 2.2 Report Catalogue Screen
Selecting A Report From The Catalogue

To select a report, either enter the name of the report on the Data Entry Line of the Report Catalogue Screen and press the 'ENTER' key or indicate the report from the catalogue displayed with the Data Cell and press the 'ENTER' key. If the report you wish to indicate is not currently displayed on the screen, you can use the scrolling options to scroll the catalogue of reports or you can use the LOCATE command to automatically scroll the catalogue to that report. To locate the report entry, enter the report name on the Data Entry Line and execute the LOCATE command. (see the COMMAND chapter in this manual for a detailed explanation of the LOCATE command).

The catalogue displays all the reports, even though you may not have sufficient access authority to select some of the reports. If you attempt to select a report for editing and you do not have WRITE access for this report or you attempt to select a report to browse or print and you do not have at least READ access for this report, a message will be displayed, the report will not be retrieved and you will remain in the Report Catalogue Facility to select another report.

Specifying A New Report Name

A new report may be created in the Edit Facility, by specifying a new report name in the Report Catalogue Facility.

To specify a new report, enter the name of the new report on the Data Entry Line of the Report Catalogue Screen and press the 'ENTER' key.

The new report name must be unique, a maximum of 8 characters, start with an alphabetic character and contain alphanumeric and/or national (@ # $) characters.

Returning To The Main Menu Facility

Execution of either the MENU or END commands will return you to the Main Menu Facility.
BROWSE FACILITY

The Browse Facility displays the report selected from the Report Catalogue Facility.

You may browse a report which is currently being edited or browsed by someone else using BURP.

You must have at least READ access to a report to be allowed to browse it. (See the Report Environment section in this manual for an explanation of report access permissions.)

Display Of The Report

The report is displayed as follows: (see Figure 2.3)

Report Name - the name of the report currently being browsed. It is displayed on the second line of the screen, enclosed within brackets.

Report Heading - the heading of the report is displayed on the fourth line of the screen.

Report Column Headings - the headings for each column of report data are bounded by the width of the column and are displayed on the fifth and sixth lines of the screen.

Column Number Line - the column numbers for each column are displayed on the seventh line of the screen.

Report Data Section - the report data is displayed on the remaining section of the screen (excluding the very last line).

The display of the report data may be temporarily altered by executing the relational commands available in the Browse Facility.

Browse Commands

The commands available in the Browse Facility are displayed on the Command Line, and are as follows:

MENU - return to the Main Menu Facility.
END - return to the Report Catalogue Facility.
FIND - to find an occurrence of a string in the report.
RFIND - to continue finding occurrences of a string.
PROJECT - to suppress the display of specified columns.
SELECT - to suppress the display of selected lines of data.
JOIN - to join the report being browsed with another report.
Execution of this command will return you the Join Specifications Facility for entry of the joining specifications.
SORT - to sort the lines of report data.
RESTORE - to restore the display of the report, after it has been changed with the above commands.
PRINT - to print a hard copy of the report.
SAVE - to create a new report.
HELP - to display help information for the Browse Facility.
See the COMMAND chapter of this manual for a more detailed description of these commands.
Figure 2.3 Browse Facility Screen

<table>
<thead>
<tr>
<th>STUDENT</th>
<th>STUDENT NAME</th>
<th>A1</th>
<th>A2</th>
<th>A3</th>
<th>A4</th>
<th>A5</th>
<th>ME</th>
<th>FE</th>
<th>TOT</th>
<th>FINAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>18200356</td>
<td>ANDREWS RAYMOND GREG</td>
<td>5</td>
<td>4</td>
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<td>7</td>
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<td>28</td>
<td>59</td>
<td>PASS</td>
</tr>
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<td>ATKINSON BRUCE ROBERT</td>
<td>6</td>
<td>6</td>
<td>7</td>
<td>9</td>
<td>7</td>
<td>15</td>
<td>28</td>
<td>71</td>
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</tr>
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<td>18212985</td>
<td>BAILEY GEOFF THOMAS</td>
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<td>7</td>
<td>8</td>
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<td>8</td>
<td>12</td>
<td>28</td>
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<td>CREDIT</td>
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<tr>
<td>18200506</td>
<td>BAKER JOHN DAVID</td>
<td>5</td>
<td>6</td>
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<td>11</td>
<td>27</td>
<td>62</td>
<td>PASS</td>
</tr>
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<td>18230175</td>
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<td>7</td>
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<td>8</td>
<td>16</td>
<td>29</td>
<td>73</td>
<td>CREDIT</td>
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<td>18216826</td>
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<td>6</td>
<td>3</td>
<td>4</td>
<td>8</td>
<td>8</td>
<td>12</td>
<td>17</td>
<td>63</td>
<td>PASS</td>
</tr>
<tr>
<td>18134433</td>
<td>CARR ELIZABETH JANE</td>
<td>9</td>
<td>9</td>
<td>10</td>
<td>10</td>
<td>10</td>
<td>19</td>
<td>28</td>
<td>96</td>
<td>H DIST</td>
</tr>
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<td>18143870</td>
<td>CLARK JAMES ANDREW</td>
<td>7</td>
<td>7</td>
<td>9</td>
<td>8</td>
<td>8</td>
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<td>27</td>
<td>73</td>
<td>CREDIT</td>
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<td>18200173</td>
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<td>6</td>
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<td>8</td>
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<td>13</td>
<td>21</td>
<td>61</td>
<td>PASS</td>
</tr>
<tr>
<td>18215239</td>
<td>DAVIS STEVEN JOHN</td>
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<td>9</td>
<td>9</td>
<td>8</td>
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<td>31</td>
<td>82</td>
<td>DIST</td>
</tr>
<tr>
<td>18215493</td>
<td>DOYLE ANDREW PETER</td>
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<td>10</td>
<td>10</td>
<td>19</td>
<td>37</td>
<td>96</td>
<td>H DIST</td>
</tr>
<tr>
<td>18246311</td>
<td>DUFFY MAUREEN ALICE</td>
<td>4</td>
<td>4</td>
<td>6</td>
<td>6</td>
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<td>20</td>
<td>54</td>
<td>PASS</td>
</tr>
<tr>
<td>18211036</td>
<td>EDWARDS PETER JOHN</td>
<td>6</td>
<td>6</td>
<td>9</td>
<td>7</td>
<td>9</td>
<td>13</td>
<td>22</td>
<td>72</td>
<td>CREDIT</td>
</tr>
<tr>
<td>18222772</td>
<td>EVANS JUDITH ALISON</td>
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<td>7</td>
<td>7</td>
<td>7</td>
<td>8</td>
<td>12</td>
<td>19</td>
<td>70</td>
<td>CREDIT</td>
</tr>
<tr>
<td>18218892</td>
<td>FARRAR MELISSA JANE</td>
<td>8</td>
<td>8</td>
<td>9</td>
<td>9</td>
<td>10</td>
<td>16</td>
<td>32</td>
<td>83</td>
<td>DIST</td>
</tr>
<tr>
<td>18208973</td>
<td>FISHER EDDIE</td>
<td>3</td>
<td>3</td>
<td>7</td>
<td>7</td>
<td>6</td>
<td>11</td>
<td>20</td>
<td>52</td>
<td>PASS</td>
</tr>
</tbody>
</table>

Browse Scrolling Options

The Scrolling Options available in this facility are displayed on the bottom line of the screen. See the Scrolling Option section in the BURP ENVIRONMENT chapter of this manual for a more detailed explanation of these options and how they are executed.

Creating A New Report

The report being displayed in the Browse Facility may be temporarily modified by using the relational commands available: PROJECT, SELECT, JOIN and SORT. This modified version of the report can be saved into a new report, by entering the name of the new report on the Data Entry Line and executing the SAVE command.

Printing A Report

The report being displayed in the Browse Facility may be printed by executing the PRINT command. Execution of the PRINT command will display you the Print Specifications Screen for the entry of necessary information for the printing of the report (see the section on the Print Report Utility in this chapter). If the report being browsed has been temporarily modified, the modified version of the report will be printed.
JOIN SPECIFICATIONS FACILITY

The Join Specifications Facility displays the skeletons of the two reports to be joined for the entry of the join specifications.

Display Of Reports To Be Joined

The following information is displayed for each report:
- Report Name - the names of the two reports being joined.
- Report Title Header - the headings for both reports.
- Column Headings - the column headings for each column for both the reports.
- Column Numbers - the column numbers for each column for both reports.

Figure 2.4 Join Specifications Screen

```
JOIN CANCEL SUBMIT HELP
(CSCI201) ==>]
CSCI 201 - STUDENT RESULTS
STUDENT FINAL
NUMBER STUDENT NAME GRADE
1-------1---------------------2------3----------------------------------
(CSCI1211)
CSCI 211 - STUDENT RESULTS
STUDENT FINAL
NUMBER STUDENT NAME GRADE
1-------1---------------------2------3----------------------------------

CRTL-L : LEFT CRTL-R : RIGHT CRTL-D : DISPLAY
```
Entering Join Specifications

To specify a column from the first report to be joined with a particular column of the second report, you enter the same number into each of these columns. These two columns must have the same column specifications. The joining of two reports may be performed on more than one column. This is specified by entering a unique number for each column into the appropriate columns of the first report and entering the corresponding numbers into the desired columns of the second report.

The display of the report columns may be scrolled left or right for the entry of the join specifications by using the scrolling options.

For Example, report A and B have the following specifications:

A - column 1, character type column, width = 7
- column 2, character type column, width = 30
- column 3, character type column, width = 6

B - column 1, character type column, width = 7
- column 2, character type column, width = 30
- column 3, character type column, width = 6

Report A has student results for one subject and report B has student results for another subject. Both these reports have a student number, a student name and a grade for the completed subject. To create a report for students who did both these subjects, and join their results for these two subjects, join the reports on their first two columns. To join these two reports on their first two columns - enter a '1' into the first column of report A and a '1' into the first column of report B, and enter a '2' into the second column of report A and a '2' into the second column of report B.

An example line of report A -
8260784 SMITH Johnathon Andrew CREDIT
An example line of report A -
8260784 SMITH Johnathon Andrew PASS

The report being browsed will have the first three columns of report A joined with the third column of report B, if the first two columns of each report have similar entries to be joined.

The example lines above would be joined to give the following line:
8260784 SMITH Johnathon Andrew CREDIT PASS
Joining The Reports

When you have finished entering the join specifications, you execute the SUBMIT command to join the two reports. After the two reports are successfully joined, the Browse Facility Screen is returned with the reports joined together.

When the two reports are joined, the resulting report will be truncated, if necessary, to the 126 character maximum report width. Any columns which cross this boundary will be omitted.

 Cancelling The Join Request

To cancel the joining of the two reports, you can execute the CANCEL command and return to the Browse Facility.
EDIT FACILITY

The Edit Facility displays the existing report selected from the Report Catalogue Facility or the new report specified in the Report Catalogue Facility.

You may edit a report which is currently being browsed but not currently being edited by someone else using BURP.

You must have WRITE access to an existing report to be allowed to edit it. (see the Report Environment section in this manual for an explanation of report access permissions)

The Edit Facility allows you to update the report heading, the column headings, the column specifications, and the report data.

Display Of The Report

The report is displayed as follows: (see Figure 2.6)

Report Name - the name of the report currently being browsed. It is displayed on the second line of the screen, enclosed within brackets.

Report Heading - the heading of the report is displayed on the fourth line of the screen.

Report Column Headings - the headings for each column of report data are bounded by the width of the column and are displayed on the fifth and sixth lines of the screen.

Column Number Line - the column numbers for each column are displayed on the seventh line of the screen.

Report Data Section - the report data is displayed on the remaining section of the screen (excluding the very last line).

Edit Commands

The Edit Facility has a primary and a secondary command line. To display the secondary command line, execute the LINE command. To redisplay the primary command line, execute the RETURN command. (see Figure 2.5)

Figure 2.5 Edit Facility, Primary Command Line

```
| EDIT | MENU END | COLUMN LINE FIND RFIND SORT MATH | PRINT SAVE CANCEL HELP |
```

Edit Facility, Secondary Command Line

```
| EDIT | MENU END | RETURN INSERT DELETE MOVE COPY | PRINT SAVE CANCEL HELP |
```
The commands available in the Edit Facility are as follows:

- **MENU** - save the report and return to the Main Menu Facility.
- **END** - save the report and return to the Report Catalogue Facility.
- **COLUMN** - to display the Column Specifications Facility, to update the column specifications for the report.
- **LINE** - to display the secondary command line.
- **RETURN** - to display the primary command line.
- **INSERT** - to insert line(s).
- **DELETE** - to delete line(s).
- **MOVE** - to move line(s).
- **COPY** - to copy line(s).
- **FIND** - to find an occurrence of a string in the report.
- **RFIND** - to continue finding occurrences of a string.
- **SORT** - to sort the lines of report data.
- **MATH** - to apply arithmetic formulae to columns of report data.
- **PRINT** - to print a hard copy of the report.
- **SAVE** - to save the report or create a new report.
- **HELP** - to display help information for the Edit Facility.

See the COMMAND chapter of this manual for a more detailed description of these commands.

**Figure 2.6 Edit Facility Screen**

<table>
<thead>
<tr>
<th>STUDENT</th>
<th>STUDENT NAME</th>
<th>A1</th>
<th>A2</th>
<th>A3</th>
<th>A4</th>
<th>A5</th>
<th>ME</th>
<th>FE</th>
<th>TOT</th>
<th>FINAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>18200356 ANDREWS RAYMOND GREG</td>
<td>5 4 6 7 3 11 28 59 PASS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18203671 ATKINSON BRUCE ROBERT</td>
<td>6 6 7 9 7 15 28 71 CREDIT</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18212985 BAILEY GEOFF THOMAS</td>
<td>7 7 8 9 8 12 28 72 CREDIT</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18200506 BAKER JOHN DAVID</td>
<td>5 6 6 6 6 11 27 62 PASS</td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18230175 BISHOP GREG ALLAN</td>
<td>8 7 7 7 8 16 29 73 CREDIT</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18216826 BROWN JOHN DAVID</td>
<td>6 3 4 8 8 12 17 63 PASS</td>
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<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>18134433 CARR ELIZABETH JANE</td>
<td>9 9 10 10 19 28 96 H DIST</td>
<td></td>
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</tr>
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<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>18200173 COOPER PAUL FRANK</td>
<td>6 7 6 8 7 13 21 61 PASS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18215239 DAVIS STEVEN JOHN</td>
<td>8 9 9 8 8 16 31 82 DIST</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18215493 DOYLE ANDREW PETER</td>
<td>9 10 10 10 19 37 96 H DIST</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18248311 DUFFY MAUREEN ALICE</td>
<td>4 4 6 6 8 12 20 54 PASS</td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
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<tr>
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</tr>
<tr>
<td>18216892 FARRAR MELISSA JANE</td>
<td>8 8 9 9 10 16 32 83 DIST</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18208973 FISHER EDDIE</td>
<td>3 3 7 6 11 20 52 PASS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

ICNTL-L : LEFT  CNTL-R : RIGHT  CNTL-P : PREV  CNTL-N : NEXT
Edit Scrolling Options

The Scrolling Options available in this facility are displayed on the bottom line of the screen. See the Scrolling Option section in the BURP ENVIRONMENT chapter of this manual for a more detailed explanation of these options and how they are executed.

Updating The Report

The report headings, column headings and report data may be updated. The lines of report data may be inserted, deleted, moved and copied. Columns of data may also be updated by altering the column specifications for the report. The entry of data is explained in greater detail in the Data Entry section of the BURP ENVIRONMENT chapter of this manual.

Saving The Report

Once the entry of report data is completed, the report can be saved by executing one of three commands:

SAVE - the report will be saved and you will remain in the Edit Facility.

END - the report will be saved and you will be returned to the Report Catalogue Facility.

MENU - the report will be saved and you will be returned to the BURP Main Menu Facility.

Creating A New Report

Once the entry of report data is completed for a new report, it can be created by executing one of the following commands:

SAVE - the new report will be created and you will remain in the Edit Facility.

END - the new report will be created and you will be returned to the Report Catalogue Facility.

MENU - the new report will be created and you will be returned to the BURP Main Menu Facility.

Also, a new report can be created with a copy of the report currently being edited, by entering the name of the new report on the Data Entry Line and executing the SAVE command.

The new report will have the following access permission tags created, which may be updated in the Report Security Utility:

- you (the owner) will have READ and WRITE access.
- your UNIX group will have READ and WRITE access.
- all other users will have READ access.

The description of the new report is set to the report name and the status of the new report is temporary. The report description and status may be updated in the Description/Status Utility.
Printing The Report

The report being displayed in the Edit Facility may be printed by executing the PRINT command. Execution of the PRINT command will display you the Print Specifications Screen for the entry of necessary information for the printing of the report (see the section on the Print Report Utility in this chapter). If the report being edited has been updated and not saved, the modified version of the report will be printed.
COLUMN SPECIFICATIONS FACILITY

The Column Specifications Facility displays the column specifications of the report being created or updated in the current Edit session.

When a new report is specified for creation in the Report Catalogue Facility, you will be required to specify the report's column specifications before you will be displayed the report in the Edit Facility for the entry of report data.

The column specifications of a report may be changed after it is created by executing the COLUMN command in the Edit Facility. (see the COMMAND chapter in this manual for a more detailed description of this command.) You may insert, delete, move and copy columns of report data. The column width and number of decimals can also be changed. Only the type of an existing column may not be altered.

Display Of Column Specifications

The following specifications are displayed for each column of the report:

- Column Number - the sequence number for that column.
- Type - there are two types of columns; character (C) and numeric (N).
- Width - the number of characters in a column, not counting the blank character between columns.
- Number Decimals - number of decimals for a numeric type column i.e. the number of integers after the decimal point.
- Start Position - the number of characters from the beginning of a report line, that the column starts in.
- Finish Position - the number of characters from the beginning of a report line, that the column ends in.
- Column Heading - the heading for the column.

While updating the column specifications, the column numbers are automatically resequenced. Also, when you update the width of the column, the start and finish positions of the columns within the report are recalculated; the last finish position being the current report width.

The column headings of existing columns are displayed to aid the updating of columns. When a new column is created, the column heading is blank and is entered in the Edit Facility.
Figure 2.7 Column Specifications Screen

<table>
<thead>
<tr>
<th>COLUMN SPECIFICATIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>COLUMNS: UPDATE ISRTCOL DLETCOL MOVECOL COPYCOL CANCEL HELP</td>
</tr>
<tr>
<td>(CSC121) =&gt;</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>COLUMN NUMBER</th>
<th>TYPE</th>
<th>WIDTH</th>
<th>DECIMALS</th>
<th>POSN</th>
<th>POSN</th>
<th>HEADING</th>
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<td>7</td>
<td></td>
<td>1</td>
<td>7</td>
<td>STUDENT NUMBER</td>
</tr>
<tr>
<td>2</td>
<td>C</td>
<td>30</td>
<td></td>
<td>9</td>
<td>38</td>
<td>STUDENT NAME</td>
</tr>
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<td>3</td>
<td>N</td>
<td>2</td>
<td></td>
<td>40</td>
<td>41</td>
<td>A1 10</td>
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<td>A2 10</td>
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<td></td>
<td>52</td>
<td>53</td>
<td>A5 10</td>
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<td>N</td>
<td>2</td>
<td></td>
<td>58</td>
<td>59</td>
<td>FE 40</td>
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<td>10</td>
<td>N</td>
<td>3</td>
<td></td>
<td>61</td>
<td>62</td>
<td>TOT 100</td>
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<td>11</td>
<td>C</td>
<td>6</td>
<td></td>
<td>64</td>
<td>69</td>
<td>FINAL GRADE</td>
</tr>
</tbody>
</table>

Entering Column Specifications

The following column specifications may be updated for each column:

**Type** - There are two types of columns; character (C) and numeric (N). Columns should be specified as character unless they are to contain numbers for mathematical purposes. The type of an existing column may not be changed. Only the type of a new column may be changed.

**Width** - A character column must be at least one character wide. A numeric column width must include an extra character for a sign, thus it must be at least two characters wide. If the numeric column is to have decimals, then the width must also include characters for at least one number before the decimal point and the decimal point itself. The maximum width of a numeric column is 16, to preserve precision in mathematical calculations.

**Number Decimals** - number of decimals are only entered for a numeric column to specify the number of integers after the decimal point.
The total width of the report is restricted to 126 characters. The width of a report includes the width of each column and a blank character between each column. The report width restriction will restrict the insertion of columns and the specification of column widths. The total number of columns possible is 63. These would have to all be character type columns, one character wide. Also, there must be at least one column in a report. When you begin to enter your column specifications for a new report, a new first column will be automatically created. This first column will also be created if you attempt to delete all the columns of a report.

Columns can be inserted, deleted, moved and copied by executing the following commands:
- `ISRTCOL` - to insert new column(s).
- `DLETCOL` - to delete column(s).
- `MOVECOL` - to move column(s).
- `COPYCOL` - to copy column(s). in two steps - this command is

These commands are discussed in more detail in the COMMAND chapter of this manual.

Updating The Report With The New Column Specifications

When you have finished entering the column specifications, you execute the UPDATE command to update the report columns. After successfully updating the columns, the Edit Facility screen is displayed for the entry of report data.

If the column width or number decimals of an existing column is increased or decreased, the data in that column will be truncated or padded as follows:
- decreasing a character column, the data will be right truncated.
- increasing a character column, the data will be right padded with blank characters.
- decreasing the width of a numeric field, so as to decrease the amount of digits before the decimal point, the data will be left truncated.
- decreasing the number of decimals of a numeric field, the decimals will be right truncated.
- increasing the number of digits before the decimal point, the data will be left padded with blanks.
- increasing the number of decimals, the data will be right padded with zeros.

Cancelling Column Specifications Update

To cancel the change to the column specifications of a report, you can execute the CANCEL command and return to the Edit Facility without changing the columns of the report. Also, if you were creating a report and entering the column specifications for the first time, the creation of the report can be cancelled by executing the CANCEL command, and you will be returned to the Report Catalogue Screen.
The Utilities Facility is a menu facility which displays the report utilities available for selection:
- Print Report - to print a report
- Copy Report - to copy a report
- Rename Report - to rename a report
- Delete Report - to delete a report
- Report Description/Status - update report description/status
- Report Security - to update report security

All these facilities are discussed in following sections of this chapter.

The HELP command is also available from the Main Menu Facility. Execution of this command will temporarily display a relevant section of the Tutorial Facility. After reading the displayed 'help' information, you can return to the Utilities Menu Screen by executing the END command.

Execution of the MENU or END commands will return you to the Main Menu Screen.

Figure 2.8 Utilities Menu Screen
PRINT REPORT UTILITY

The Print Report Utility displays the print specifications required to obtain a hard copy of a report. The report to be printed is selected from the Report Catalogue Facility which is displayed when the Print Report Utility is selected from the Utilities Facility.

Figure 2.9 Print Specifications Screen

<table>
<thead>
<tr>
<th>PRINT</th>
<th>SUBMIT</th>
<th>CANCEL</th>
<th>HELP</th>
</tr>
</thead>
<tbody>
<tr>
<td>(PAYROLL ) ==&gt;</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

PRINT SPECIFICATIONS

| COPIES ==> | 1 |
| CENTRE REPORT ==> Y (Y/N) |
| CENTRE HEADING ==> Y (Y/N) WITHIN THE REPORT |

TOTALS
TOTAL COLUMNS ==> (COLUMN NUMBERS OR ALL)
PRINT TOTALS ONLY ==> N (Y/N)

EMPLOYEE PAYROLL

<table>
<thead>
<tr>
<th>CLOCK</th>
<th>WEEKLY</th>
<th>YEAR TO</th>
</tr>
</thead>
<tbody>
<tr>
<td>NUMBER</td>
<td>EMPLOYEE NAME</td>
<td>WAGE</td>
</tr>
<tr>
<td>-------</td>
<td>----------------</td>
<td>------</td>
</tr>
<tr>
<td>1-----</td>
<td>----------------</td>
<td>------</td>
</tr>
</tbody>
</table>

CRTL-L : LEFT  CRTL-R : RIGHT

Entering The Print Specifications

The following print specifications are required to be entered:

Copies - the number of copies of the report to be printed. The default is one.

Centre Heading - indicate if the report heading is to be centred with respect to the report data. The default is 'Y', to centre the heading.

Centre Report - indicate if the report data is to be centred on the page. Default is 'Y', to centre the report data.
Total Columns - the numeric columns of the report to be totalled are specified by entering the column numbers or by entering 'all' if all the numeric columns are to be totalled. The report heading, column headings and column numbers are displayed at the bottom of the screen to aid the specification of the column numbers to be totalled. This display of the report headings and column numbers may be scrolled horizontally using the scrolling options.

Print Totals Only - indicate if only the totals of the columns specified in the 'TOTAL COLUMNS' field are to be printed without the report data. Defaults to 'N', to print the totals with the report data.

Submitting The Print Request

After entering the print specifications, the report can be printed by executing the SUBMIT command. You will be returned to the Report Catalogue Screen, so you can either select another report to print or leave the Print Report Utility. The hard copy will be sent to the printer paired to the terminal you are using.

Cancelling The Print Request

Execution of the CANCEL command will return you to the Report Catalogue Screen without printing the report.
COPY REPORT UTILITY

The Copy Report Utility provides the facility to create a copy of an existing report.

Figure 2.10 Copy Report Utility Screen

Specifying The Report To Be Copied

The name of the report to be copied is entered into the "COPY FROM REPORT" field. You must have at least READ access to the report to be copied. If you have insufficient access authority to the report to be copied, a message will be displayed when you attempt to copy the report, the report will not be copied and you can then re-enter the report to be copied or leave the utility.

Specifying The Report To Be Created

The name of the report to be copied to and created is entered into the "COPY TO REPORT" field. This report must be a new report and have a new, unique name. If this report name is invalid, a message will be displayed when you attempt to copy the report, the report will not be copied and you can then re-enter the report name to be copied to or leave the utility.
Copying The Report

After specifying the report names, the report is copied to the new report by executing the UPDATE command. A message will be displayed to indicate that the report has been successfully copied.

The new report will have the following access permission tags created, which may be updated in the Report Security Utility:
- you (the owner) will have READ and WRITE access.
- your UNIX group will have READ and WRITE access.
- all other users will have READ access.

The description of the new report is set to the report name and the status of the new report is temporary. The report description and status may be updated in the Description/Status Utility.

Leaving The Copy Utility

Execution of the END command will return you to the Utilities Facility and execution of the MENU command will return you to the Main Menu Facility. If you execute either of these commands after entering the report names for the report copy, and before executing the UPDATE command, the report will not be copied.
The Rename Report Utility provides the facility to rename an existing report.

Figure 2.11 Rename Report Utility Screen

Specifying The Report To Be Renamed

The name of the report to be renamed is entered into the "REPORT NAME" field. You must have at least WRITE access to the report to be renamed. If you have insufficient access authority to the report, a message will be displayed when you attempt to rename the report, the report will not be renamed and you can then reenter the report to be renamed or leave the utility.

Specifying The New Report Name

The new name of the report is entered into the "NEW REPORT NAME" field. This report name must be unique. If the report name is invalid, a message will be displayed when you attempt to rename the original report, the report will not be renamed and you can then reenter the new report name or leave the utility.
Renaming The Report

After specifying the report names, the report is renamed using the UPDATE command. A final check is performed by the UPDATE command to make sure no-one else is editing or browsing the report. If someone is editing or browsing the original report, the report will not be renamed. If no-one is editing or browsing the report, the report will be renamed and a message will be displayed to indicate that the report has been successfully renamed.

The new report will have the same access permission tags as the old report. The description and status of the new report is the same as that of the old one.

Leaving The Rename Utility

Execution of the END command will return you to the Utilities Facility and execution of the MENU command will return you to the Main Menu Facility. If you execute either of these commands after entering the report names for the report rename, and before executing the UPDATE command, the report will not be renamed.
DELETE REPORT UTILITY

The Delete Report Utility provides the facility to delete an existing report.

Figure 2.12 Delete Report Utility Screen

Specifying The Report To Be Deleted

The name of the report to be deleted is entered into the "REPORT NAME" field. You must have at least WRITE access to the report to be deleted. If you have insufficient access authority to the report, a message will be displayed when you attempt to delete the report. The report will not be deleted and you can then reenter the report to be deleted or leave the utility.
Deleting The Report

After specifying the report name, the report is deleted using the UPDATE command. A final check is performed by the UPDATE command to make sure no-one else is editing or browsing the report. If someone is editing or browsing the report, the report will not be deleted. If no-one is editing or browsing the report, the report will be deleted and a message will be displayed to indicate that the report has been successfully deleted.

Leaving The Delete Utility

Execution of the END command will return you to the Utilities Facility and execution of the MENU command will return you to the Main Menu Facility. If you execute either of these commands after entering the report name for the report deletion, and before executing the UPDATE command, the report will not be deleted.
REPORT DESCRIPTION/STATUS UTILITY

The Report Description/Status Utility provides the facility to update the report description and the report status of an existing report.

Figure 2.13 Report Description/Status Utility Screen

<table>
<thead>
<tr>
<th>DSCR/STAT UTILITY</th>
<th>MENU END UPDATE RESTORE</th>
</tr>
</thead>
</table>

- **REPORT NAME**
- **REPORT DESCRIPTION**
- **REPORT STATUS** *(T/TEMPORARY, P/PERMANENT)*

### Specifying The Report Name

The name of the report that is to have its description and status displayed is entered into the "REPORT NAME" field. You must have READ and WRITE access to the report to display its description and status. If you have insufficient access authority to the report, a message will be displayed when you attempt to display the report description and status. The report description and status will not be displayed, and you may then re-enter a report that is to have its current description and status displayed, or leave the utility.

### Displaying The Report Description/Status

On successful entry of a report name, the following fields are displayed for the report:

- **Report Description** - a description of the report.
- **Report Status** - the current status of the report. This may be either temporary or permanent.
Entering The Report Description/Status

The following fields may be updated for the report:

Report Description - The description is a free-format text of a maximum of 20 characters.

Report Status - The status may be set to temporary by entering 'T' or 'TEMPORARY', or to permanent by entering 'P' or 'PERMANENT'.

A 'temporary' report will be deleted by the Report Clean-Up Job which runs weekly, if the last access date for the report is more than 30 days ago. A 'permanent' report will not be deleted by the Report Clean-Up Job. (Refer the Technical Report for a more detailed description of the Report Clean-Up Utility).

Updating The Report Description/Status

The report description and status fields may be updated by executing the UPDATE command. A message will be displayed to indicate that the report description and status have been successfully updated.

Restoring The Report Description/Status

The original report description and status fields may be re-displayed at any time prior to execution of the UPDATE command, by executing the RESTORE command. A message will be displayed to indicate that the report description and status have been successfully restored.

Leaving The Report Description/Status Utility

Execution of the END command will return you to the Utilities Facility and execution of the MENU command will return you to the Main Menu Facility. If you execute either of these commands after entering the report description and status, and before executing the UPDATE command, the report description and status will not be updated.
REPORT SECURITY UTILITY

The Report Security Utility provides the facility to update the report access permissions.

Figure 2.14 Report Security Utility Screen

| SECURITY UTILITY : MENU END UPDATE RESTORE HELP |
| ===> | |
| | |
| | |
| | |
| | |
| | |
| | |
| | | REPORT NAME ===> |
| | | CURRENT GROUP ID ===> |
| | | READ WRITE |
| | | OWNER ACCESS |
| | | GROUP ACCESS |
| | | OTHERS ACCESS |
| | |

Specifying The Report Name

The name of the report that is to have its security access permissions displayed is entered into the "REPORT NAME" field. You must have READ and WRITE access to the report for the access permission tags to be displayed. Only the owner of a report may update the report access permission tags. If you have insufficient access authority to the report, a message will be displayed when you attempt to display or update the report access permission tags. The report security will either not be displayed or not be updated, and you may then re-enter a report that is to have its current access permission tags displayed, or leave the utility.
Displaying The Report Security

On successful entry of a report name, the following fields are displayed for the report:
- Current Group ID - the current Unix group ID of the owner of the report.
- Owner Access - the current read and write access permission tags for the owner of the report.
- Group Access - the current read and write access permission tags for the group to which the owner belongs.
- Others Access - the current read and write access permission tags for other users.

Entering The Report Access Permission Tags

Only the owner, group and others access permission tags for a report may be updated. These access permission tags may be set by entering 'Y' for yes, or '_' or 'N' for no.

Updating The Report Security

The report security access permission tags may be updated by executing the UPDATE command. A message will be displayed to indicate that the report security has been successfully updated.

Restoring The Report Security

The original report security access permission tags may be re-displayed at any time prior to execution of the UPDATE command, by executing the RESTORE command. A message will be displayed to indicate that the report security has been successfully restored.

Leaving The Report Security Utility

Execution of the END command will return you to the Utilities Facility and execution of the MENU command will return you to the Main Menu Facility. If you execute either of these commands after entering the report access permission tags, and before executing the UPDATE command, the report security will not be updated.
TUTORIAL FACILITY

The Tutorial Facility provides on-line information regarding the available facilities of BURP, the general operations of BURP, the commands and their execution procedures.

Accessing The TUTORIAL From The BURP MAIN MENU

To access a fully detailed explanation of BURP, select the TUTORIAL option from the selection list. This may be achieved by moving the Data Cell to the TUTORIAL option on the screen and pressing enter.

Figure 2.15 BURP Main Menu Screen

For HELP: press 'TAB' key once, then press 'ENTER'
Accessing The TUTORIAL Using the HELP command

At all times within BURP, the Tutorial information is available with the execution of the HELP command. Executing the HELP command will present to you a small portion of the general tutorial information, explaining to you, where you are within BURP, and the commands available. The Material presented will only be pertinent to the current BURP facility.

Figure 2.16 Sample BURP screen

Browsing The TUTORIAL Information

When the Tutorial Facility is accessed the first screen of tutorial information will be presented to you for browsing. To access the second and subsequent screens of information, the screens may be scrolled using the Scrolling Options explained in the BURP ENVIRONMENT chapter of the manual. Alternatively, you may simply press the Enter Key to present the next sequential screen of detail.

Each screen of information will indicate to you if another screen follows. Once the last screen is reached, execution of the scroll down (or pressing the Enter Key), will return to you the beginning of the Tutorial Facility.

Exiting From The TUTORIAL Facility

When you no longer require the tutorial information, executing the END command which will return you back to the facility you where in when you asked for help.
COMMAN D S

CANCEL COMMAND

The CANCEL command In EDIT

This command allows you to end the current EDIT session without saving any changes made to the report. The report will be restored to the same format as it was when it was last saved.

Upon successful execution of the CANCEL command you will be returned to the Report Catalogue Screen. The Data Cell and Command Cells are returned to the Home position and a message is displayed to indicate the status of the CANCEL command.

The CANCEL command In JOIN

The CANCEL command in JOIN, allows you to exit from the JOIN Specification screen without joining the report. The original report will have the same format as it did before you began the Join operation.

Upon successful execution of the CANCEL command you will be returned to the BROWSE Facility. The Data Cell and the Command Cell are returned to the Home position and a message is displayed to indicate that the JOIN operation was not carried out.

The CANCEL command In COLUMN Specifications

The CANCEL command in the COLUMN Specifications screen, allows you to cancel any changes that you have made to a report’s columns. When creating a new report, the creation of the report may be cancelled by executing the CANCEL command.

Upon successful execution of the CANCEL command you will be returned to either the EDIT Facility, for an existing report, or to the Report Catalogue Screen when cancelling a new report. The Data Cell and the Command Cell are returned to the Home position and a message is displayed to indicate the column changes or report creation was cancelled.
COLUMN COMMAND

The COLUMN command will allow you to change the column specifications of the report currently being edited.

Execution of the COLUMN command will display you the Column Specifications Screen, for the entry of the changes to the column specifications of the report. You may change the width and number decimal specifications of existing columns and you may insert, delete, move and copy columns. (See the Column Specifications Facility section in the manual and the ISRTCOL, DLETCOL, MOVECOL and COPYCOL sections of the COMMAND chapter.)
COPY COMMAND

This command copies an existing line of data from one position in a report to another position in the report. After the line has been copied, it will exist both in its original position and its new position.

The execution of the COPY command is a two-step process.

STEP 1. - Specifying The Line(s) To Be Copied

To copy one or more lines of a report, enter the number of lines to be copied on the Data Entry Line. If no number is entered the default is to copy one line. Move the Data Cell to the line to be copied and execute the COPY command. If the number of lines to be moved is greater than one, lines will be copied starting at the line indicated by the Data Cell and continuing down the report for the specified number of lines. The maximum number of lines to be copied at one time is twenty.

If the number entered is invalid, a message explaining the error will be displayed on the message line and no lines will be copied. The Data Cell and Command Cell will not be moved, and you can re-enter the number on the Data Entry Line and execute the COPY command again.

To copy remaining lines from the end of a report, position the Data Cell on the first line of the block to be copied and enter a number great enough to copy all the remaining lines. This number may be greater than the existing number of report lines.

NOTE: The maximum of 20 lines still applies, so there must be less than 20 lines after the line indicated by the Data Cell for it to copy all remaining lines of the report.

After completion of step 1 the Data Cell is positioned at the Home position and the Command Cell remains on the COPY command. The number entered on the Data Entry Line is removed, and you cannot change the number of lines to be copied without restarting the command.

STEP 2. - Specifying Where To Copy The Line(s) To

To copy lines to the appropriate place in the report, position the DATA-CELL on the line prior to where the lines are to be copied to. When copying lines before the first line displayed on the screen, position the Data Cell at the Home position and execute the COPY command.

If the line prior to where the line(s) are to be "copied after" is not currently displayed on the screen, you can scroll the report, using the Scrolling Options, to display this line for positioning of the Data Cell.
The report will then be re-displayed with the required number of lines copied. Lines of the report will be shuffled down to allow for the insertion of the copied lines. The Data Cell is positioned on the first line that was copied. In those circumstances where the lines were copied after the last line on the screen the whole report will have been scrolled by one line.

If the position of the Data Cell is invalid, a message explaining the error will be displayed, and no lines will be copied. The Data Cell will not be moved and the Data Entry Line will not be changed. You can then reposition the Data Cell to a valid position and execute the COPY command again.

### Repeating Lines Using the COPY Command

You can use the COPY command to repeat a single line or a block of lines, by positioning the Data Cell, in the second step, on the line to be copied or on the last line of a block to be copied.

### Resetting The COPY Command

If, after step 1, it is decided not to proceed with the copy operation (for example, if the number of lines you requested to copy was incorrect), the COPY command can be cancelled by moving the Command Cell off the COPY command.

For example, to copy two lines starting from "ATKINSON" enter the number two (2) into the Data Entry Line and position the Data Cell on the line:-

```
8203671 ATKINSON BRUCE ROBERT CREDIT
```

<table>
<thead>
<tr>
<th>EDIT</th>
<th>MENU</th>
<th>END</th>
<th>RETURN</th>
<th>INSERT</th>
<th>DELETE</th>
<th>MOVE</th>
<th>COPY</th>
<th>PRINT</th>
<th>SAVE</th>
<th>CANCEL</th>
<th>HELP</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(!STUDENTS)</td>
<td>===&gt;</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>!CSCI 201 - MID SESSION EXAM RESULTS !</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>!STUDENT !</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NUMBER</td>
<td>STUDENT NAME</td>
<td>RESULT</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-------</td>
<td>---------------</td>
<td>--------</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8200356</td>
<td>ANDREWS RAYMOND GREG</td>
<td>PASS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8203671</td>
<td>ATKINSON BRUCE ROBERT</td>
<td>CREDIT</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8212985</td>
<td>BAILEY GEOFF THOMAS</td>
<td>CREDIT</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8200506</td>
<td>BAKER JOHN DAVID</td>
<td>PASS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8204657</td>
<td>DAVIES MARK JOHN</td>
<td>CREDIT</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8223456</td>
<td>FRANKLIN BEN</td>
<td>FAILED</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8274803</td>
<td>JOHN LITTLE</td>
<td>CREDIT</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
After step 1 of the COPY command the screen will appear as follows, with the Data Cell situated at the Home position.

<table>
<thead>
<tr>
<th>EDIT</th>
<th>MENU END RETURN INSERT DELETE MOVE COPY PRINT SAVE CANCEL HELP</th>
</tr>
</thead>
<tbody>
<tr>
<td>(STUDENTS) ==&gt; 2</td>
<td></td>
</tr>
<tr>
<td>======================================================================================== INDICATE COPY 'AFTER' LINE =</td>
<td></td>
</tr>
<tr>
<td>CSCI 201 - MID SESSION EXAM RESULTS</td>
<td></td>
</tr>
<tr>
<td>STUDENT</td>
<td></td>
</tr>
<tr>
<td>NUMBER</td>
<td>STUDENT NAME</td>
</tr>
<tr>
<td>--------</td>
<td>--------------</td>
</tr>
<tr>
<td>18200358 ANDREWS RAYMOND GREG</td>
<td>PASS</td>
</tr>
<tr>
<td>18203671 ATKINSON BRUCE ROBERT</td>
<td>CREDIT</td>
</tr>
<tr>
<td>18212985 BAILEY GEOFF THOMAS</td>
<td>CREDIT</td>
</tr>
<tr>
<td>18200506 BAKER JOHN DAVID</td>
<td>PASS</td>
</tr>
<tr>
<td>18204657 DAVIES MARK JOHN</td>
<td>CREDIT</td>
</tr>
<tr>
<td>18223456 FRANKLIN BEN</td>
<td>FAILED</td>
</tr>
<tr>
<td>18274803 JOHN LITTLE</td>
<td>CREDIT</td>
</tr>
</tbody>
</table>

After indicating where the lines are to be copied to the report would appear as follows, with the Data Cell position on the first line that was copied. Assume the lines are to be copied after "FRANKLIN".

<table>
<thead>
<tr>
<th>EDIT</th>
<th>MENU END RETURN INSERT DELETE MOVE COPY PRINT SAVE CANCEL HELP</th>
</tr>
</thead>
<tbody>
<tr>
<td>(STUDENTS) ==&gt; 2</td>
<td></td>
</tr>
<tr>
<td>======================================================================================== LINES COPIED =</td>
<td></td>
</tr>
<tr>
<td>CSCI 201 - MID SESSION EXAM RESULTS</td>
<td></td>
</tr>
<tr>
<td>STUDENT</td>
<td></td>
</tr>
<tr>
<td>NUMBER</td>
<td>STUDENT NAME</td>
</tr>
<tr>
<td>--------</td>
<td>--------------</td>
</tr>
<tr>
<td>18200358 ANDREWS RAYMOND GREG</td>
<td>PASS</td>
</tr>
<tr>
<td>18203671 ATKINSON BRUCE ROBERT</td>
<td>CREDIT</td>
</tr>
<tr>
<td>18212985 BAILEY GEOFF THOMAS</td>
<td>CREDIT</td>
</tr>
<tr>
<td>18200506 BAKER JOHN DAVID</td>
<td>PASS</td>
</tr>
<tr>
<td>18204657 DAVIES MARK JOHN</td>
<td>CREDIT</td>
</tr>
<tr>
<td>18223456 FRANKLIN BEN</td>
<td>FAILED</td>
</tr>
<tr>
<td>18203671 ATKINSON BRUCE ROBERT</td>
<td>CREDIT</td>
</tr>
<tr>
<td>18212985 BAILEY GEOFF THOMAS</td>
<td>CREDIT</td>
</tr>
<tr>
<td>18274803 JOHN LITTLE</td>
<td>CREDIT</td>
</tr>
</tbody>
</table>
COPYCOL COMMAND

This command copies an existing column of data from one position in a report to another position in the report. After the column has been copied, it will exist both in its original position and its new position.

The execution of the COPYCOL command is a two-step process.

STEP 1 - Specifying The Column(s) To Be Copied

To copy one or more columns of a report, enter the number of columns to be copied on the Data Entry Line. If no number is entered the default is to copy one column. Move the Data Cell to the type, width or number decimal field for the column or the first column of a block to be copied and execute the COPYCOL command.

If the number entered is invalid, a message explaining the error will be displayed on the message line and no columns will be copied. The Data Cell and Command Cell will not be moved, and you can re-enter the number on the Data Entry Line and execute the COPYCOL command again.

To copy remaining columns from the end of a report, position the Data Cell on the first column of the block to be copied and enter a number great enough to copy all the remaining columns. This number may be greater than the existing number of report columns.

There is a restriction on the number of columns to be copied at the one time. The maximum number of report columns is restricted to 63 and the maximum report width is restricted to 126 characters. If the requested copy of columns will exceed either of these two restrictions, then the columns will not be copied and a message will be displayed to explain which restriction is being violated.

After completion of step 1 the Data Cell is positioned at the Home position and the Command Cell remains on the COPYCOL command. The number entered on the Data Entry Line is removed, and you cannot change the number of columns to be copied without restarting the command.

STEP 2 - Specifying Where To Copy The Column(s) To

To specify where the columns are to be copied after, position the DATA-CELL on the type, width or number decimal field of the column prior to where the columns are to be copied after. When copying columns before the first column displayed on the screen, position the Data Cell at the Home position and execute the COPYCOL command.
If the column prior to where the column(s) are to be "copied after" is not currently displayed on the screen, you can scroll the report, using the Scrolling Options, to display this column for positioning of the Data Cell. The number of columns to be copied has been removed from the Data Entry Line, so you can specify the number of lines to scroll the display of column specifications.

The column specifications will be re-displayed with the required number of columns copied. The column numbers will be resequenced and the start and finish positions of the columns will have been recalculated.

If the position of the Data Cell is invalid, a message explaining the error will be displayed, and no columns will be copied. The Data Cell will not be moved and the Data Entry Line will not be changed. You can then reposition the Data Cell to a valid position and execute the COPYCOL command again.

Repeating Columns Using the COPYCOL Command

You can use the COPYCOL command to repeat a single column or a block of columns, by positioning the Data Cell, in the second step, on the column to be copied or on the last column of a block to be copied.

Resetting The COPYCOL Command

If, after step 1, it is decided not to proceed with the copy operation (for example, if the number of columns you requested to copy was incorrect), the COPYCOL command can be reset by moving the Command Cell off the COPYCOL command.

For example, to copy the two columns 2 and 3 after column 4, enter the number two (2) into the Data Entry Line and position the Data Cell on, say, the type field for the second column.

---

| COLUMNS : UPDATE ISRTCOL DLETCOL MOVECOL COPYCOL | CANCEL HELP |
| (CSCI211 ) ====> 2 |
|=================================================================================|
| COLUMN SPECIFICATIONS |
| COLUMN TYPE NUMBER START FINISH COLUMN |
| NUMBER C/N WIDTH DECIMALS POSN POSN HEADING |
| 1 C 7 | 1 7 STUDENT NUMBER |
| 2 C 30 | 9 38 STUDENT NAME |
| 3 N 2 | 40 41 A1 10 |
| 4 N 2 | 43 44 A2 10 |
| 5 N 2 | 46 47 A3 10 |
**After step 1 of the COPYCOL command the screen will appear as follows, with the Data Cell situated at the Home position.**

```plaintext
<table>
<thead>
<tr>
<th>COLUMNS</th>
<th>UPDATE</th>
<th>ISRTCOL</th>
<th>DLETCL</th>
<th>MOVECOL</th>
<th>COPYCOL</th>
<th>CANCEL</th>
<th>HELP</th>
</tr>
</thead>
</table>
|        (CSCI211 ) ===>
|---------|--------|---------|--------|---------|---------|--------|------|

<table>
<thead>
<tr>
<th>COLUMN SPECIFICATIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>NUMBER</td>
</tr>
<tr>
<td>C/N</td>
</tr>
<tr>
<td>C/N</td>
</tr>
<tr>
<td>1</td>
</tr>
<tr>
<td>2</td>
</tr>
<tr>
<td>3</td>
</tr>
<tr>
<td>4</td>
</tr>
<tr>
<td>5</td>
</tr>
</tbody>
</table>

**After indicating where the lines are to be copied to the column specifications will appear as follows:**

```plaintext
<table>
<thead>
<tr>
<th>COLUMNS</th>
<th>UPDATE</th>
<th>ISRTCOL</th>
<th>DLETCL</th>
<th>MOVECOL</th>
<th>COPYCOL</th>
<th>CANCEL</th>
<th>HELP</th>
</tr>
</thead>
</table>
|        (CSCI211 ) ===>
|---------|--------|---------|--------|---------|---------|--------|------|

<table>
<thead>
<tr>
<th>COLUMN SPECIFICATIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>NUMBER</td>
</tr>
<tr>
<td>C/N</td>
</tr>
<tr>
<td>C/N</td>
</tr>
<tr>
<td>1</td>
</tr>
<tr>
<td>2</td>
</tr>
<tr>
<td>3</td>
</tr>
<tr>
<td>4</td>
</tr>
<tr>
<td>5</td>
</tr>
<tr>
<td>6</td>
</tr>
<tr>
<td>7</td>
</tr>
</tbody>
</table>
|```
DELETE COMMAND

This command deletes unwanted lines of data from a report.

To delete a line of a report, position the Data Cell on the unwanted line and execute the DELETE command. Alternatively, if a block of lines are to be deleted, starting from the line indicated by the Data Cell, enter the number of lines to be deleted on the Data Entry Line prior to executing the DELETE command.

The report will then be re-displayed with the required number of lines deleted. All remaining lines of the report will be shuffled up to occupy the blank space. The Data Cell and Command Cell will have been returned to the Home position.

Specifying The Number Of Lines Required

Enter the number of lines required to be deleted on the Data Entry Line. If this number is greater than one, lines will be deleted starting at the line indicated by the Data Cell and continuing down the report for the specified number of lines. If the number of lines is omitted then the default is to delete one line.

If the number entered is invalid, a message explaining the error will be displayed on the message line and no lines will be deleted. The Data Cell and Command Cell will not be moved, and you can re-enter the number on the Data Entry Line and execute the DELETE command again.

To delete lines to the end of the report, move the DATA-CELL to the first line of the block to be removed and enter a number great enough to delete all the remaining lines. This number may be greater than the existing number of report lines.

NOTE: The maximum of 20 lines still applies, so there must be less than 20 lines after the line indicated by the Data Cell for it to delete all remaining lines of the report.

Positioning The Data Cell

To delete a line from a report, position the Data Cell on the unwanted line or if more than one line is to be deleted, position the Data Cell on the first line of the block to be deleted and execute the DELETE command.
For example, to delete two lines starting from "ATKINSON"
Enter the number two (2) into the Data Entry Line and position the Data Cell on the line:-
8203671 ATKINSON BRUCE ROBERT CREDIT

<table>
<thead>
<tr>
<th>EDIT</th>
<th>MENU END</th>
<th>RETURN</th>
<th>INSERT</th>
<th>DELETE</th>
<th>MOVE</th>
<th>COPY</th>
<th>PRINT</th>
<th>SAVE</th>
<th>CANCEL</th>
<th>HELP</th>
</tr>
</thead>
<tbody>
<tr>
<td>(STUDENTS) ===&gt; 2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

After the DELETE command is executed the report will appear as follows, with the Data Cell situated at the Home position.

<table>
<thead>
<tr>
<th>EDIT</th>
<th>MENU END</th>
<th>RETURN</th>
<th>INSERT</th>
<th>DELETE</th>
<th>MOVE</th>
<th>COPY</th>
<th>PRINT</th>
<th>SAVE</th>
<th>CANCEL</th>
<th>HELP</th>
</tr>
</thead>
<tbody>
<tr>
<td>(STUDENTS) ===&gt; 2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

If the position of the Data Cell is invalid, a message explaining the error will be displayed, and no lines will be deleted. The Data Cell will not be moved and the Data Entry Line will not be changed. You can then reposition the Data Cell to a valid position and execute the DELETE command again.

NOTE: You cannot delete the Report Heading or Column Heading lines. Thus it is invalid to position the Data Cell on either of these three lines for the DELETE command.
DLETCOL COMMAND

This command deletes unwanted columns of data from a report.

To delete a column of a report, position the Data Cell on the type, width of number decimal field of the unwanted column and execute the DELETE command. Alternatively, if a block of columns are to be deleted, starting from the column indicated by the Data Cell, enter the number of columns to be deleted on the Data Entry Line prior to executing the DELETE command.

The column specifications will then be re-displayed with the required number of columns deleted.

Specifying The Number Of Columns Required

To delete one or more columns of a report, enter the number of columns to be deleted on the Data Entry Line. If no number is entered the default is to delete one column. Move the Data Cell to the type, width or number decimal field for the column or the first column of a block to be deleted and execute the DLETCOL command.

If the number entered is invalid, a message explaining the error will be displayed on the message line and no columns will be deleted. The Data Cell and Command Cell will not be moved, and you can re-enter the number on the Data Entry Line and execute the DLETCOL command again.

To delete columns to the end of the report, move the DATA-CELL to the first column of the block to be removed and enter a number great enough to delete all the remaining columns. This number may be greater than the existing number of report columns.

Positioning The Data Cell

To delete a column from a report, position the Data Cell on the type, width or number decimal field of the unwanted column or if more than one column is to be deleted, position the Data Cell on the first column of the block to be deleted and execute the DLETCOL command.

The column specifications will be re-displayed with the required number of columns deleted. The column numbers will be resequenced and the start and finish positions of the columns will have been recalculated.

If you attempt to delete all the columns of a report, a new column will be automatically inserted.
If the position of the Data Cell is invalid, a message explaining the error will be displayed, and no columns will be deleted. The Data Cell will not be moved and the Data Entry Line will not be changed. You can then reposition the Data Cell to a valid position and execute the DLETCOL command again.

For example, to delete two columns starting from column 2 enter the number two (2) into the Data Entry Line and position the Data Cell on the column:-

```
COLUMNS : UPDATE ISRTCOL DLETCOL MOVECOL COPYCOL CANCEL HELP
(CSCI211 ) ====> 2
```

```
COLUMN SPECIFICATIONS

<table>
<thead>
<tr>
<th>COLUMN TYPE</th>
<th>NUMBER</th>
<th>START</th>
<th>FINISH</th>
<th>COLUMNS</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>7</td>
<td>1</td>
<td>7</td>
<td>STUDENT NUMBER</td>
</tr>
<tr>
<td>C</td>
<td>30</td>
<td>9</td>
<td>38</td>
<td>STUDENT NAME</td>
</tr>
<tr>
<td>N</td>
<td>2</td>
<td>40</td>
<td>41</td>
<td>A1 10</td>
</tr>
<tr>
<td>N</td>
<td>2</td>
<td>43</td>
<td>44</td>
<td>A2 10</td>
</tr>
<tr>
<td>N</td>
<td>2</td>
<td>46</td>
<td>47</td>
<td>A3 10</td>
</tr>
</tbody>
</table>
```

After the DLETCOL command is executed the column specifications will appear as follows, with the Data Cell situated at the Home position.

```
COLUMNS : UPDATE ISRTCOL DLETCOL MOVECOL COPYCOL CANCEL HELP
(CSCI211 ) ====>
```

```
COLUMN SPECIFICATIONS

<table>
<thead>
<tr>
<th>COLUMN TYPE</th>
<th>NUMBER</th>
<th>START</th>
<th>FINISH</th>
<th>COLUMNS</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>7</td>
<td>1</td>
<td>7</td>
<td>STUDENT NUMBER</td>
</tr>
<tr>
<td>N</td>
<td>2</td>
<td>9</td>
<td>10</td>
<td>A2 10</td>
</tr>
<tr>
<td>N</td>
<td>2</td>
<td>12</td>
<td>13</td>
<td>A3 10</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
```
END COMMAND

Execution of the END command will exit you from the current BURP facility, and return you to the previous logical screen.

Execution of the END command in BROWSE will not save any changes made to the report that you may have requested using the PROJECT, JOIN, SELECT or SORT commands. Execution of the END command in EDIT will automatically save the changes made to the report.

If the END command is executed from within any of the Utilities no report processing is carried out. For example, if you are in the Copy Facility and execute the END command (prior to executing the UPDATE command) then the report will not be copied. The same situation applies to each of the other Utilities.

The following table shows the screens which will be returned upon execution of the END command:

<table>
<thead>
<tr>
<th>CURRENT SCREEN</th>
<th>SCREEN RETURNED TO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Report catalogue screen</td>
<td>Main BURP menu, or</td>
</tr>
<tr>
<td></td>
<td>utilities menu screen</td>
</tr>
<tr>
<td>Report being browsed</td>
<td>Report catalogue</td>
</tr>
<tr>
<td>Report being edited</td>
<td>Report catalogue</td>
</tr>
<tr>
<td>Copy report option</td>
<td>Utilities menu</td>
</tr>
<tr>
<td>Rename report option</td>
<td>Utilities menu</td>
</tr>
<tr>
<td>Delete report option</td>
<td>Utilities menu</td>
</tr>
<tr>
<td>Description/status option</td>
<td>Utilities menu</td>
</tr>
<tr>
<td>Report security</td>
<td>Utilities menu</td>
</tr>
<tr>
<td>Tutorial menu</td>
<td>Main BURP menu</td>
</tr>
<tr>
<td>Any screen of tutorial info.</td>
<td>Tutorial menu, or screen from</td>
</tr>
<tr>
<td></td>
<td>which HELP command was selected</td>
</tr>
</tbody>
</table>

Upon successful completion of the END command the Data Cell and the Command Cell are returned to the Home position. If the END command was executed from EDIT a message will be displayed indicating the report was saved or created.
FIND COMMAND

The FIND command allows you to find and display the next occurrence of a character string in the report being browsed or edited.

The FIND command in EDIT

The search for the character string will begin from the position of the Data Cell. If the Data Cell is at the Home position, the search will start at the beginning of the first line displayed on the screen.

The FIND command in BROWSE

Since the BROWSE Facility does not have a Data Cell, the search for a character string will always begin at the beginning of the first line displayed on the screen.

Specifying The Character String

The FIND command searches the report for the character string entered on the Data Entry Line. If no string is entered then an error message will be displayed.

A character string is used to find the string exactly as entered.

Example - ===> This
In this example, the string "This" would be found, but "this" or "THIS" or any other variations would not be found. The report is searched for an exact match.

- Quoted Strings
In some cases, you may wish to find a string containing blanks, or a string which could be interpreted as containing column indicators. Such a string must be contained within quotes to remove ambiguity. A quoted string begins and ends with double quotes.

Example - ===> "MR JONES"
Example - ===> "Smith & Jones"
Example - ===> "12"

- Text Strings
A text string is used to find a character string regardless of whether alphabetic characters are upper or lower case. A text string is a quoted string that is preceded by the letter "T".

Example - ===> T"this"
In this example, the FIND command would locate the following variations: "THIS", "this", "This" etc.
Limiting The Search To Specified Columns

If columns are not specified then the whole of the report will be searched for the string. However a search can be limited to a single column by specifying the column number after the string to be searched for.

Example - ====> JONES 1
In this example, the FIND command will search for the string "JONES" in the first column of the report.

Alternatively, the search can be limited to a range of columns by specifying the column numbers after the string to be searched for.

Example - ====> 234.56 1 3
In this example, the FIND command will search for the string "234.56" in columns 1, 2 and 3 of the report.

If the string to be searched for can be interpreted as a column number, then it must be a quoted string to remove any ambiguity.

Example - ====> "23" 1 3

Results of the FIND Command

If the string is found the Data Cell will be positioned on the column containing the string and the Command Cell will be returned to the Home position. A message will be displayed to inform you that the string has been found. If the string is not currently on the screen, automatic scrolling will be performed to bring the string into view. The Data Entry Line is cleared of the search string.

If the string is not found, one of two messages will be displayed. If the search for a character string started from the beginning of the report the message "STRING XXXXX NOT FOUND", is displayed, where XXXXX is the string (or first five characters of the string) being searched for. This message indicates to you that the whole of the report has been searched and the string has not been found. If the search began from elsewhere in the report, the message "END OF REPORT REACHED" is displayed. This message is to inform you that the string had not been located in that portion of the report where the search started, to the end of the report. You can use the RFIND command to continue searching from the top of the report.

In either of the above cases, the Data Cell (if it is currently displayed in the BROWSE Facility) remains in its current position and the Command Cell is returned to the Home position. The Data Entry Line is cleared of the string.
HELP COMMAND

The HELP command allows you to obtain detailed information regarding the facilities available within BURP.

Obtaining HELP From The BURP MAIN MENU

To obtain a full explanation of BURP, its commands and facilities, select the TUTORIAL option from the selection list. This may be achieved by moving the Data Cell to the TUTORIAL option on the screen and pressing enter.

Executing HELP From A BURP Facility

When help is required in any of the BURP facilities, executing the HELP command will present you with a small explanation of where you are and the commands available to you. The material presented will only detail information pertinent to the current BURP facility.

Upon successful execution of the HELP command, you will be presented with tutorial information. Both the Data Cell and the Command Cell will be at the Home position. To continue browsing through the help information, the Enter Key is used to present the next sequential screen of detail. Alternatively, you may scroll forwards or backwards using the Scrolling Options explained in the BURP ENVIRONMENT chapter of this manual.

When you no longer need the help information, executing the END command will return you back to the facility you were in when you asked for HELP. The screen will be as you had left it, except that the Data Cell and Command Cell will be at the Home position.
INSERT COMMAND

This command inserts blank lines in between two existing lines of a report or adds new lines to the beginning or end of a report.

To insert blanks lines into a report, move the Data Cell to the desired position in the report where you want the lines inserted, enter the number of blank lines required on the Data Entry Line and execute the INSERT command.

The report will then be re-displayed with the required number of blank lines inserted. All current lines on the screen, below the "insert" lines, are shuffled down to allow for the insertion of the new lines. The Data Cell is positioned on the first "insert" line on the screen and the Command Cell is returned to its Home position. In those circumstances where the new lines were inserted after the last line on the screen the whole report will have been scrolled up by one line.

Specifying The Number Of Lines Required

Enter the number of lines required to be inserted on the Data Entry Line. If the number of lines is omitted then the default is to insert one line. The maximum number of lines to be inserted at one time is twenty. If the number entered is invalid, a message explaining the error will be displayed on the message line and no lines will be inserted. The Data Cell and Command Cell will not be moved, and you can re-enter the number on the Data Entry Line and execute the INSERT command again.

Positioning The Data Cell

To insert lines at the appropriate place in the report, position the Data Cell on the line immediately above the position in the report where the new lines are to be placed. When inserting a line before the first line displayed on the screen, move the Data Cell to the Home position and execute the INSERT command.

If the position of the Data Cell is invalid, a message explaining the error will be displayed, and no lines will be inserted. The Data Cell will not be moved and the Data Entry Line will not be changed. You can then reposition the Data Cell to a valid position and execute the INSERT command again.

NOTE: You cannot insert extra lines for the Report Heading or Column Headings. Thus it is invalid to position the Data Cell on either of these three lines for the INSERT command.
For example, to insert two blank lines after "ATKINSON" place the Data Cell on the line:

8203671 ATKINSON BRUCE ROBERT CREDIT

After the INSERT command is executed the report will appear as follows, with the Data Cell situated on the new line.

8200356 ANDREWS RAYMOND GREG PASS
8203671 ATKINSON BRUCE ROBERT CREDIT
8212985 BAILEY GEOFF THOMAS CREDIT
8200506 BAKER JOHN DAVID PASS
ISRTCOL COMMAND

This command inserts blank columns in between two existing columns of a report or adds new columns to the beginning or end of a report.

To insert blanks columns into a report, move the Data Cell to the desired position of the column specifications where you want the columns inserted, enter the number of blank columns required on the Data Entry Line and execute the ISRTCOL command.

The column specifications will be re-displayed with the required number of columns inserted. The column numbers will be resequenced and the start and finish positions of the columns will have been recalculated.

Specifying The Number Of Columns Required

Enter the number of columns required to be inserted on the Data Entry Line. If the number of columns is omitted then the default is to insert one column.

There is a restriction on the number of columns to be inserted at the one time. The maximum number of report columns is restricted to 63 and the maximum report width is restricted to 126 characters. If the requested insertion of columns will exceed either of these two restrictions, then the columns will not be inserted and a message will be displayed to explain which restriction is being violated.

If the number entered is invalid, a message explaining the error will be displayed on the message line and no columns will be inserted. The Data Cell and Command Cell will not be moved, and you can re-enter the number on the Data Entry Line and execute the ISRTCOL command again.

Positioning The Data Cell

To insert columns at the appropriate place in the report, position the Data Cell on the column immediately above the position in the report where the new columns are to be placed. When inserting a column before the first column displayed on the screen, move the Data Cell to the Home position and execute the ISRTCOL command.

If the position of the Data Cell is invalid, a message explaining the error will be displayed, and no lines will be inserted. The Data Cell will not be moved and the Data Entry Line will not be changed. You can then reposition the Data Cell to a valid position and execute the ISRTCOL command again.
For example, to insert two blank columns after column 2, place the Data Cell on either the type, width of number decimal field for column 2 and enter 2 on the Data Entry Line:

<table>
<thead>
<tr>
<th>COLUMN</th>
<th>TYPE</th>
<th>NUMBER</th>
<th>START</th>
<th>FINISH</th>
<th>COLUMN</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>C</td>
<td>7</td>
<td>1</td>
<td>7</td>
<td>STUDENT NUMBER</td>
</tr>
<tr>
<td>2</td>
<td>C</td>
<td>30</td>
<td>9</td>
<td>38</td>
<td>STUDENT NAME</td>
</tr>
<tr>
<td>3</td>
<td>N</td>
<td>2</td>
<td>40</td>
<td>41</td>
<td>A1 10</td>
</tr>
<tr>
<td>4</td>
<td>N</td>
<td>2</td>
<td>43</td>
<td>44</td>
<td>A2 10</td>
</tr>
<tr>
<td>5</td>
<td>N</td>
<td>2</td>
<td>46</td>
<td>47</td>
<td>A3 10</td>
</tr>
</tbody>
</table>

After the ISRTCOL command is executed the column specifications will appear as follows:

<table>
<thead>
<tr>
<th>COLUMN</th>
<th>TYPE</th>
<th>NUMBER</th>
<th>START</th>
<th>FINISH</th>
<th>COLUMN</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>C</td>
<td>7</td>
<td>1</td>
<td>7</td>
<td>STUDENT NUMBER</td>
</tr>
<tr>
<td>2</td>
<td>C</td>
<td>30</td>
<td>9</td>
<td>38</td>
<td>STUDENT NAME</td>
</tr>
<tr>
<td>3</td>
<td>N</td>
<td>2</td>
<td>40</td>
<td>41</td>
<td>A1 10</td>
</tr>
<tr>
<td>4</td>
<td>N</td>
<td>2</td>
<td>43</td>
<td>44</td>
<td>A2 10</td>
</tr>
<tr>
<td>5</td>
<td>N</td>
<td>2</td>
<td>46</td>
<td>47</td>
<td>A3 10</td>
</tr>
</tbody>
</table>
JOIN COMMAND

This command allows you to join an existing report to the report that you are currently browsing.

To join two reports together, enter the name of the second report on the Data Entry Line and execute the JOIN command. A check is performed to make sure that the second report exists and that you have at least read access to it.

After successfully entering the name of the second report, and executing the JOIN command, the Join Specification Screen will be displayed. The Data Cell and the Command Cell will be positioned at the Home position. It is on this screen that you are able to enter the join specifications for the joining of the two reports. (See the Join Specifications Facility section of this manual for a description of the Join Specifications Facility).

# Refer to the Report Environment Section of this manual for a description of report access modes.
LINE COMMAND

The LINE command displays the "Secondary Command Selection Line" for EDIT. The secondary command selection line contains the commands to insert, delete, copy and move lines of report data. The command line will remain displayed until the RETURN command is executed.

The Edit Facility Primary Command Selection Line is as follows

```
EDIT : MENU END COLUMN LINE FIND RFIND SORT MATH PRINT SAVE CANCEL HELP
```

After executing the LINE command, the Secondary Command Selection Line is displayed.

```
EDIT : MENU END RETURN INSERT DELETE MOVE COPY PRINT SAVE CANCEL HELP
```
MATH COMMAND

This command allows the user to specify a mathematical equation that will be applied to the lines of the report.

To apply a mathematical equation, the user must enter an equation in the data entry line. The equation must contain a target column identifier and may be self referencing. The mathematical expression involves combinations of constant factors, column numbers, preceded with a 'c' to distinguish them from the constant factors, and the following operators:

* - multiplication       / - division
+ - addition            - - subtraction
() - to order the precedence of evaluation

NB. operators * and / take precedence over operators + and -.

When the MATH command is used, the Data Entry Line is deciphered to determine the equation to be applied to the lines of the report.

A typical math expression may look like:

```plaintext
===> c2 = c3 * ((62.625 + c8 - c4) / (c2 / 100))
```

When the syntax of the expression has been successfully evaluated, the target column is checked to ensure that it is large enough to hold the result of the expression for all lines in the report. If the target is not large enough, the expression is not evaluated and a message is returned to the user. If attempt is made to divide by zero the intermediate result will be set to zero and an error message is returned to the user.

When the syntax of the boolean expression has been successfully evaluated, Any column specified in the mathematical equation will be check to ensure it is of numeric type. If any violation of this rule is encountered, an error message will be displayed on the screen, indicating which column is not numeric.
An example. To sum the result of all 5 assignments, average them to produce a mark out of 40 and add the result of the mid term and final examination, the following mathematical equation would be entered into the Data Entry Line, the command cell moved to the MATH command and the ENTER KEY pressed.

\[
i = 4 \times (\frac{(c3 + c4 + c5 + c6 + c7)}{5}) + c8 + c9\]

The result of applying the mathematical equation to the report is the following:

<table>
<thead>
<tr>
<th>STUDENT NUMBER</th>
<th>STUDENT NAME</th>
<th>A1</th>
<th>A2</th>
<th>A3</th>
<th>A4</th>
<th>A5</th>
<th>ME</th>
<th>FE</th>
<th>TOT</th>
<th>FINAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>18200356</td>
<td>ANDREWS RAYMOND GREG</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>3</td>
<td>11</td>
<td>28</td>
<td></td>
<td></td>
<td>PASS</td>
</tr>
<tr>
<td>18203671</td>
<td>ATKINSON BRUCE ROBERT</td>
<td>6</td>
<td>6</td>
<td>7</td>
<td>9</td>
<td>7</td>
<td>15</td>
<td>28</td>
<td></td>
<td>CREDIT</td>
</tr>
<tr>
<td>18212985</td>
<td>BAILEY GEOFF THOMAS</td>
<td>7</td>
<td>7</td>
<td>8</td>
<td>9</td>
<td>8</td>
<td>12</td>
<td>28</td>
<td></td>
<td>CREDIT</td>
</tr>
<tr>
<td>18200506</td>
<td>BAKER JOHN DAVID</td>
<td>5</td>
<td>6</td>
<td>6</td>
<td>6</td>
<td>6</td>
<td>11</td>
<td>27</td>
<td></td>
<td>PASS</td>
</tr>
<tr>
<td>18230175</td>
<td>BISHOP GREG ALLAN</td>
<td>8</td>
<td>7</td>
<td>7</td>
<td>7</td>
<td>8</td>
<td>16</td>
<td>29</td>
<td></td>
<td>CREDIT</td>
</tr>
<tr>
<td>18216826</td>
<td>BROWN JOHN DAVID</td>
<td>6</td>
<td>3</td>
<td>4</td>
<td>8</td>
<td>6</td>
<td>12</td>
<td>17</td>
<td></td>
<td>PASS</td>
</tr>
<tr>
<td>18134433</td>
<td>CARR ELIZABETH JANE</td>
<td>9</td>
<td>9</td>
<td>10</td>
<td>10</td>
<td>10</td>
<td>19</td>
<td>28</td>
<td></td>
<td>H DIST</td>
</tr>
<tr>
<td>18143870</td>
<td>CLARK JAMES ANDREW</td>
<td>7</td>
<td>7</td>
<td>9</td>
<td>8</td>
<td>8</td>
<td>15</td>
<td>27</td>
<td></td>
<td>CREDIT</td>
</tr>
<tr>
<td>18200173</td>
<td>COOPER PAUL FRANK</td>
<td>6</td>
<td>7</td>
<td>6</td>
<td>8</td>
<td>7</td>
<td>13</td>
<td>21</td>
<td></td>
<td>PASS</td>
</tr>
<tr>
<td>18215239</td>
<td>DAYIS STEVEN JOHN</td>
<td>8</td>
<td>9</td>
<td>9</td>
<td>8</td>
<td>10</td>
<td>18</td>
<td>31</td>
<td></td>
<td>DIST</td>
</tr>
<tr>
<td>18215493</td>
<td>DOYLE ANDREW PETER</td>
<td>9</td>
<td>10</td>
<td>10</td>
<td>10</td>
<td>10</td>
<td>19</td>
<td>37</td>
<td></td>
<td>DIST</td>
</tr>
<tr>
<td>18248311</td>
<td>DUFFY MAUREEN ALICE</td>
<td>4</td>
<td>4</td>
<td>6</td>
<td>6</td>
<td>8</td>
<td>12</td>
<td>20</td>
<td></td>
<td>PASS</td>
</tr>
<tr>
<td>18211036</td>
<td>EDWARDS PETER JOHN</td>
<td>6</td>
<td>6</td>
<td>9</td>
<td>7</td>
<td>9</td>
<td>13</td>
<td>22</td>
<td></td>
<td>CREDIT</td>
</tr>
<tr>
<td>18222727</td>
<td>EVANS JUDITH ALISON</td>
<td>7</td>
<td>7</td>
<td>7</td>
<td>7</td>
<td>8</td>
<td>12</td>
<td>19</td>
<td></td>
<td>CREDIT</td>
</tr>
<tr>
<td>18218692</td>
<td>FARRAR MELISSA JANE</td>
<td>8</td>
<td>8</td>
<td>9</td>
<td>9</td>
<td>10</td>
<td>16</td>
<td>32</td>
<td></td>
<td>DIST</td>
</tr>
<tr>
<td>18208973</td>
<td>FISHER EDDIE</td>
<td>3</td>
<td>3</td>
<td>7</td>
<td>7</td>
<td>6</td>
<td>11</td>
<td>20</td>
<td></td>
<td>PASS</td>
</tr>
<tr>
<td>18210085</td>
<td>FRANKLIN ROSS MICHAEL</td>
<td>7</td>
<td>7</td>
<td>6</td>
<td>6</td>
<td>14</td>
<td>31</td>
<td></td>
<td>CREDIT</td>
<td></td>
</tr>
</tbody>
</table>
MENU COMMAND

The MENU command returns the user to the BURP MAIN MENU screen to select one of the facilities available within BURP or to terminate the BURP session.

The list shows the screens from which the Menu command may be executed:
- Edit Facility
- Browse Facility
- Report Catalogue Facility
- Utilities Menu Facility
- Print Report Facility
- Copy Report Facility
- Rename Report Facility
- Delete Report Facility
- Description/Status Utility
- Report Security Utility

The MENU Command In BROWSE

The MENU command in the BROWSE facility allows you to exit from BROWSE and return to the BURP MAIN MENU screen. Execution of the MENU command in BROWSE will not save any changes made to the report using the PROJECT, JOIN, SELECT or SORT commands.

The MENU Command In EDIT

The MENU command in the EDIT facility allows you to exit from EDIT and return to the BURP MAIN MENU screen. Execution of the MENU command in EDIT, automatically saves any changes made to the report.

The MENU Command In A Utility

The MENU command in any of the Utilities allows you to exit from the Utility and return you to the BURP MAIN MENU screen. Execution of the MENU command from with a Utility will not carry out any report processing. For example, if you are in the Copy Facility and execute the MENU command (prior to executing the UPDATE command) then the report will not be copied. The same situation applies to each of the other Utilities.
Upon successful completion of the MENU command the BURP MAIN MENU screen is returned (see below). The Data Cell and the Command Cell are returned to the Home position. If the MENU command was executed from EDIT a message will be displayed indicating that the report was saved or created.

<table>
<thead>
<tr>
<th>MENU</th>
<th>HELP</th>
</tr>
</thead>
<tbody>
<tr>
<td>BBBB</td>
<td>U U</td>
</tr>
<tr>
<td>B B</td>
<td>B U</td>
</tr>
<tr>
<td>B B</td>
<td>B U</td>
</tr>
<tr>
<td>BBBB</td>
<td>U U</td>
</tr>
<tr>
<td>B B</td>
<td>B U</td>
</tr>
<tr>
<td>BBBB</td>
<td>B B</td>
</tr>
<tr>
<td>BBBBB</td>
<td>UUUU</td>
</tr>
</tbody>
</table>

BROWSE - Display report data.
EDIT - Create or update report data.
UTILITIES - Perform utility functions.
TUTORIAL - Display information about BURP.
EXIT - Terminate BURP session.

For HELP: press 'TAB key once, then press 'ENTER'
MOVE COMMAND

This command moves an existing line of data from one position in a report to another position in the report. After the line has been moved it will exist only in its new position.

The execution of the MOVE command is a two-step process.

STEP 1. - Specifying The Line(s) To Be Moved

To move one or more lines of a report, enter the number of lines to be moved on the Data Entry Line. If no number is entered then the default is to move one line. Move the Data Cell to the line to be moved and execute the MOVE command. If the number of lines to be moved is greater than one, lines will be moved starting at the line indicated by the Data Cell and continuing down the report for the specified number of lines. The maximum number of lines to be moved at one time is twenty.

If the number entered is invalid, a message explaining the error will be displayed on the message line and no lines will be moved. The Data Cell and Command Cell will not be moved, and you can re-enter the number on the Data Entry Line and execute the MOVE command again.

To move remaining lines from the end of a report, position the Data Cell on the first line of the block to be moved and enter a number great enough to move all the remaining lines. This number may be greater than the existing number of report lines.

NOTE: The maximum of 20 lines still applies, so there must be less than 20 lines after the line indicated by the Data Cell for it to move all remaining lines of the report.

After completion of step 1 the Data Cell is positioned at the Home position and the Command Cell remains on the MOVE command. The number entered on the Data Entry Line is removed, and you cannot change the number of lines to be moved without restarting the command.

STEP 2. - Specifying Where To Move The Line(s) To

To move lines to the appropriate place in the report, position the Data Cell on the line prior to where the lines are to be moved to. When moving lines before the first line displayed on the screen position the Data Cell at the Home position and execute the MOVE command.

If the line prior to where the line(s) are to be "moved after" is not currently displayed on the screen, you can scroll the report, using the Scrolling Options, to display this line for positioning of the Data Cell.
The report will then be re-displayed with the required number of lines moved. Lines of the report will be shuffled up and down to allow for the insertion of the lines and to fill any space created by moving the lines. The Data Cell is positioned on the first line that was moved. In those circumstances where the lines were moved after the last line on the screen the whole report will have been scrolled up by one line.

If the position of the Data Cell is invalid, a message explaining the error will be displayed, and no lines will be moved. The Data Cell will not be moved and the Data Entry Line will not be changed. You can then reposition the Data Cell to a valid position and execute the MOVE command again.

**NOTE:** You may not indicate the "after" line, in the second step of the MOVE command, as being one of the lines which are to be moved.

**Resetting The MOVE Command**

If, after step 1, it is decided not to proceed with the move operation (for example, if the number of lines you requested to move was incorrect), the MOVE command can be cancelled by moving the Command Cell off the MOVE command.

For example, to move two lines starting from "ATKINSON" enter the number two (2) into the Data Entry Line and position the Data Cell on the line:

```
8203671 ATKINSON BRUCE ROBERT CREDIT
```
After step 1 of the MOVE command the screen will appear as follows, with the Data Cell situated at the Home position.

<table>
<thead>
<tr>
<th>STUDENT</th>
<th>STUDENT NAME</th>
<th>RESULT</th>
</tr>
</thead>
<tbody>
<tr>
<td>18200356 ANDREWS RAYMOND GREG</td>
<td>PASS</td>
<td></td>
</tr>
<tr>
<td>18203671 ATKINSON BRUCE ROBERT</td>
<td>CREDIT</td>
<td></td>
</tr>
<tr>
<td>18212985 BAILEY GEOFF THOMAS</td>
<td>CREDIT</td>
<td></td>
</tr>
<tr>
<td>18200506 BAKER JOHN DAVID</td>
<td>PASS</td>
<td></td>
</tr>
<tr>
<td>18204657 DAVIES MARK JOHN</td>
<td>CREDIT</td>
<td></td>
</tr>
<tr>
<td>18223456 FRANKLIN BEN</td>
<td>FAILED</td>
<td></td>
</tr>
<tr>
<td>18274803 JOHN LITTLE</td>
<td>CREDIT</td>
<td></td>
</tr>
</tbody>
</table>

After indicating where the lines are to be moved the report would appear as follows, with the Data Cell position on the first line that was moved. Assume the lines were moved after "FRANKLIN".

<table>
<thead>
<tr>
<th>STUDENT</th>
<th>STUDENT NAME</th>
<th>RESULT</th>
</tr>
</thead>
<tbody>
<tr>
<td>18200356 ANDREWS RAYMOND GREG</td>
<td>PASS</td>
<td></td>
</tr>
<tr>
<td>18200506 BAKER JOHN DAVID</td>
<td>PASS</td>
<td></td>
</tr>
<tr>
<td>18204657 DAVIES MARK JOHN</td>
<td>CREDIT</td>
<td></td>
</tr>
<tr>
<td>18223456 FRANKLIN BEN</td>
<td>FAILED</td>
<td></td>
</tr>
<tr>
<td>18203671 ATKINSON BRUCE ROBERT</td>
<td>CREDIT</td>
<td></td>
</tr>
<tr>
<td>18212985 BAILEY GEOFF THOMAS</td>
<td>CREDIT</td>
<td></td>
</tr>
<tr>
<td>18274803 JOHN LITTLE</td>
<td>CREDIT</td>
<td></td>
</tr>
</tbody>
</table>
MOVECOL COMMAND

This command moves an existing column of data from one position in a report to another position in the report. After the column has been moved it will exist only in its new position.

The execution of the MOVECOL command is a two-step process.

STEP 1. - Specifying The Column(s) To Be Moved

To move one or more columns of a report, enter the number of columns to be moved on the Data Entry Line. If no number is entered then the default is to move one column. Move the Data Cell to the type, width or number decimal field for the column to be moved and execute the MOVECOL command. If the number of columns to be moved is greater than one, columns will be moved starting at the column indicated by the Data Cell and continuing down the columns for the specified number of columns.

If the number entered is invalid, a message explaining the error will be displayed on the message line and no columns will be moved. The Data Cell and Command Cell will not be moved, and you can re-enter the number on the Data Entry Line and execute the MOVECOL command again.

To move remaining columns from the end of a report, position the Data Cell on the first column of the block to be moved and enter a number great enough to move all the remaining columns. This number may be greater than the existing number of report columns.

After completion of step 1 the Data Cell is positioned at the Home position and the Command Cell remains on the MOVECOL command. The number entered on the Data Entry Line is removed, and you cannot change the number of columns to be moved without restarting the command.

STEP 2. - Specifying Where To Move The Column(s) To

To move columns to the appropriate place in the report, position the Data Cell on the type, width or number decimal field of the column prior to where the columns are to be moved to. When moving columns before the first column displayed on the screen position the Data Cell at the Home position and execute the MOVECOL command.

If the column prior to where the column(s) are to be "moved after" is not currently displayed on the screen, you can scroll the column specifications, using the Scrolling Options, to display this column for positioning of the Data Cell.
The column specifications will be re-displayed with the required number of columns moved. The column numbers will be resequenced and the start and finish positions of the columns will have been recalculated.

If the position of the Data Cell is invalid, a message explaining the error will be displayed, and no lines will be moved. The Data Cell will not be moved and the Data Entry Line will not be changed. You can then reposition the Data Cell to a valid position and execute the MOVECOL command again.

NOTE: You may not indicate the "after" column, in the second step of the MOVECOL command, as being one of the columns which are to be moved.

Resetting The MOVECOL Command

If, after step 1, it is decided not to proceed with the move operation (for example, if the number of columns you requested to move was incorrect), the MOVECOL command can be reset by moving the Command Cell off the MOVECOL command.

For example, to move two lines starting from column 2 to after the last column, enter the number two (2) into the Data Entry Line and position the Data Cell on the type width or number decimal field for column 2:

```
COLUMN SPECIFICATIONS
NUMBER C/N WIDTH DECIMALS POSN POSN HEADING
1 C 7 1 7 STUDENT NUMBER
2 C 30 9 30 STUDENT NAME
3 N 2 40 41 A1 10
4 N 2 43 44 A2 10
5 N 2 46 47 A3 10
```
After step 1 of the MOVECOL command the screen will appear as follows, with the Data Cell situated at the Home position.

<table>
<thead>
<tr>
<th>COLUMNS</th>
<th>UPDATE ISRTCOL DLETCOL MOVECOL COPYCOL</th>
<th>CANCEL HELP</th>
</tr>
</thead>
<tbody>
<tr>
<td>(CSCI211) ==&gt;</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

COLUMN SPECIFICATIONS

<table>
<thead>
<tr>
<th>NUMBER</th>
<th>C/N</th>
<th>WIDTH</th>
<th>DECIMALS</th>
<th>POSN</th>
<th>POSN</th>
<th>HEADING</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>C</td>
<td>7</td>
<td>0</td>
<td>1</td>
<td>7</td>
<td>STUDENT NUMBER</td>
</tr>
<tr>
<td>2</td>
<td>N</td>
<td>2</td>
<td>0</td>
<td>9</td>
<td>10</td>
<td>A2 10</td>
</tr>
<tr>
<td>3</td>
<td>N</td>
<td>2</td>
<td>0</td>
<td>12</td>
<td>13</td>
<td>A3 10</td>
</tr>
<tr>
<td>4</td>
<td>C</td>
<td>30</td>
<td>0</td>
<td>15</td>
<td>44</td>
<td>STUDENT NAME</td>
</tr>
<tr>
<td>5</td>
<td>N</td>
<td>2</td>
<td>0</td>
<td>46</td>
<td>47</td>
<td>A1 10</td>
</tr>
</tbody>
</table>

After indicating where the columns are to be moved the column specifications appear as follows:

<table>
<thead>
<tr>
<th>COLUMNS</th>
<th>UPDATE ISRTCOL DLETCOL MOVECOL COPYCOL</th>
<th>CANCEL HELP</th>
</tr>
</thead>
<tbody>
<tr>
<td>(CSCI211) ==&gt;</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

COLUMN SPECIFICATIONS

<table>
<thead>
<tr>
<th>NUMBER</th>
<th>C/N</th>
<th>WIDTH</th>
<th>DECIMALS</th>
<th>POSN</th>
<th>POSN</th>
<th>HEADING</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>C</td>
<td>7</td>
<td>0</td>
<td>1</td>
<td>7</td>
<td>STUDENT NUMBER</td>
</tr>
<tr>
<td>2</td>
<td>N</td>
<td>2</td>
<td>0</td>
<td>9</td>
<td>10</td>
<td>A2 10</td>
</tr>
<tr>
<td>3</td>
<td>N</td>
<td>2</td>
<td>0</td>
<td>12</td>
<td>13</td>
<td>A3 10</td>
</tr>
<tr>
<td>4</td>
<td>C</td>
<td>30</td>
<td>0</td>
<td>15</td>
<td>44</td>
<td>STUDENT NAME</td>
</tr>
<tr>
<td>5</td>
<td>N</td>
<td>2</td>
<td>0</td>
<td>46</td>
<td>47</td>
<td>A1 10</td>
</tr>
</tbody>
</table>
PRINT COMMAND

The PRINT Command In The Browse Facility

This command allows you to obtain a hard copy of the report that you are browsing in its current form. If a report has been projected, selected, joined and/or sorted you may obtain a print of it without having to save the report first. Execution of the PRINT command will display to you the Print Specifications Screen. It is on this screen that you are able to enter the print specifications for the printing of the report. (See the Print Specifications Facility section of this manual for a description of the Print Specifications Screen).

The PRINT Command In The Edit Facility

This command allows you to obtain a hard copy of the report that you are editing in its current form. If a report has been updated, you may print it without having to save the data first. Execution of the PRINT command will display to you the Print Specifications Screen. It is on this screen that you are able to enter the print specifications for the printing of the report. (See the Print Specifications Facility section of this manual for a description of the Print Specifications Screen).
**PROJECT COMMAND**

The PROJECT command allows you to suppress the display of selected columns and to rearrange the order of the display of selected columns.

Specifying The Columns To Be Projected -

The columns to be projected (i.e. kept in the report) are entered in the DATA ENTRY LINE. The order in which the column numbers are entered in the DATA ENTRY LINE is the order in which they will appear in the resultant report. The column numbers are renumbered from left to right.

For Example:

```
<table>
<thead>
<tr>
<th>STUDENT</th>
<th>RESULT</th>
<th>STUDENT NAME</th>
<th>NUMBER</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>PASS</td>
<td>ANDREWS RAYMOND GREG</td>
<td>8200356</td>
</tr>
<tr>
<td></td>
<td>CREDIT</td>
<td>ATKINSON BRUCE ROBERT</td>
<td>8203671</td>
</tr>
<tr>
<td></td>
<td>CREDIT</td>
<td>BAILEY GEOFF THOMAS</td>
<td>8212985</td>
</tr>
<tr>
<td></td>
<td>HOIST</td>
<td>BAILEY GEOFF THOMAS</td>
<td>8212985</td>
</tr>
</tbody>
</table>
```

If the PROJECT command is submitted from the above screen the resultant report would be:

```
<table>
<thead>
<tr>
<th>STUDENT</th>
<th>RESULT</th>
<th>STUDENT NAME</th>
<th>NUMBER</th>
</tr>
</thead>
<tbody>
<tr>
<td>PASS</td>
<td>ANDREWS RAYMOND GREG</td>
<td>8200356</td>
<td></td>
</tr>
<tr>
<td>CREDIT</td>
<td>ATKINSON BRUCE ROBERT</td>
<td>8203671</td>
<td></td>
</tr>
<tr>
<td>CREDIT</td>
<td>BAILEY GEOFF THOMAS</td>
<td>8212985</td>
<td></td>
</tr>
<tr>
<td>HOIST</td>
<td>BAILEY GEOFF THOMAS</td>
<td>8212985</td>
<td></td>
</tr>
</tbody>
</table>
```

Specifying Suppression of Duplicate Lines -

If a projection with suppression is required the column numbers are entered on the DATA ENTRY LINE followed by an 's'. In this case the projection will be performed and any duplicate lines will be suppressed.
For example:

<table>
<thead>
<tr>
<th>STUDENT NUMBER</th>
<th>STUDENT NAME</th>
<th>RESULT</th>
</tr>
</thead>
<tbody>
<tr>
<td>18200356</td>
<td>ANDREWS RAYMOND GREG</td>
<td>PASS</td>
</tr>
<tr>
<td>18203671</td>
<td>ATKINSON BRUCE ROBERT</td>
<td>CREDIT</td>
</tr>
<tr>
<td>18212985</td>
<td>BAILEY GEOFF THOMAS</td>
<td>CREDIT</td>
</tr>
<tr>
<td>18212985</td>
<td>BAILEY GEOFF THOMAS</td>
<td>HOIST</td>
</tr>
</tbody>
</table>

If the PROJECT command is submitted from the above screen the resultant report would be:

<table>
<thead>
<tr>
<th>STUDENT NUMBER</th>
<th>STUDENT NAME</th>
<th>RESULT</th>
</tr>
</thead>
<tbody>
<tr>
<td>18200356</td>
<td>ANDREWS RAYMOND GREG</td>
<td></td>
</tr>
<tr>
<td>18203671</td>
<td>ATKINSON BRUCE ROBERT</td>
<td></td>
</tr>
<tr>
<td>18212985</td>
<td>BAILEY GEOFF THOMAS</td>
<td></td>
</tr>
</tbody>
</table>
RETURN COMMAND

The RETURN command returns you to the "Primary Command Selection Line" of EDIT from the "Secondary Command Selection Line". The command line will remain displayed until the LINE command is executed.

The Edit Facility Secondary Command Selection Line is as follows

```
EDIT : MENU END  RETURN INSERT DELETE MOVE COPY  PRINT SAVE CANCEL HELP
```

After executing the RETURN command, the Primary Command Selection Line is displayed.

```
EDIT : MENU END  COLUMN LINE FIND RFIND SORT MATH  PRINT SAVE CANCEL HELP
```
RESTORE COMMAND

The RESTORE Command In The Browse Facility

This command allows you to redisplay a report in its existing saved format.

If a report has been projected, selected, joined and/or sorted, then restoring the report will redisplay it unmodified. (i.e. The RESTORE command cancels any changes you have made to the report since the last time it was saved).

Upon successful execution of the RESTORE command, the Command Cell will be returned to the Home position and a message will be displayed, informing you that the report has been restored.

The RESTORE Command In The Report Security Facility

After entering the new report access permission tags, and prior to executing the UPDATE command, the original access permission tags may be redisplayed by executing the RESTORE command. After restoring the access permission tags, the Command Cell and the Data Cell are returned to the Home position and a message is displayed to indicate that the restore has taken place.

The RESTORE Command In The Description/Status Facility

After having entered a new report description or changing the report status, and prior to executing the UPDATE command, the original report description and status may be redisplayed by executing the RESTORE command. After the restore, the Command Cell and the Data Cell are returned to the Home position and a message is displayed to indicate that the restore has taken place.
RFIND COMMAND

The RFIND command allows you to continue searching for an occurrence of a character string in the report being browsed or edited.

Continuing a String Search

You can continue searching for successive string occurrences by repeatedly executing the RFIND command. After the "last" occurrence of the string has been found, the RFIND command can be used again to continue the search, wrapping around from the bottom of the report to the top of the report.

The RFIND command continues to search for the string entered for the FIND command. You may change this string by entering the new search string on the Data Entry Line and executing the RFIND command. (See the FIND command section in this manual for the specifications of the search string).

Results of the RFIND Command

If the string is found the Data Cell will be positioned on the column containing the string and the Command Cell will remain on the RFIND command. A message will be displayed to inform you that the string has been found. If the string is not currently on the screen, automatic scrolling will be performed to bring the string into view.

If the string is not found, one of two messages will be displayed. If the search for a character string started from the beginning of the report the message "STRING XXXXX NOT FOUND", is displayed, where XXXXX is the string (or the first five characters of the string) being searched for. This message indicates to you that the whole of the report has been searched and the string has not been found. If the search began from elsewhere in the report, the message "END OF REPORT REACHED" is displayed. This message is to inform you that the string had not been located in that portion of the report starting from the position indicated by the Data Cell to the end of the report.

In either of the above cases, the Data Cell remains in its current position and the Command Cell is left on the RFIND command.
SAVE COMMAND

This command allows you to save a copy of the report that you are currently displaying.

Saving Reports in BROWSE

When in BROWSE, reports may be PROJECTED, SELECTED, JOINED, or SORTED and then saved into a new report using the SAVE command. Saving a report in BROWSE is achieved by entering a new report name on the Data Entry Line and executing the SAVE command. If a report already exists under the specified name an error message will be displayed and the report will not be saved. The Data Cell remains on the SAVE command and you may re-enter a report name and execute the SAVE command again.

Saving Reports in EDIT

When in EDIT, reports may be changed using the BURP facilities provided. Once you have finished editing a report, you may save the changes in a new report, or save the changes to the report as you make them.

To save report changes in a new report, enter the new report name on the Data Entry Line and execute the SAVE command. This process will not change the original report in any way. If a report already exists under the specified name an error message will be displayed and the report will not be saved. The Data Cell remains on the SAVE command and you may re-enter a report name and execute the SAVE command again.

To save report changes in an existing report execute the SAVE command without entering anything on the Data Entry Line.

Specifying The Report Name

When executing the SAVE command you may specify the name of the report name under which the current report will be saved. The report name must be alphanumeric or contain the national characters '©', '#', or '$'. The first character must be alphabetic. The maximum length of a report name is eight characters.
If a report name is entered on the Data Entry Line the name must be unique. That is, a report with this specified name cannot already exist.

Examples of valid and invalid report names are given below.

- Fred - Valid
- StudExam - Valid
- MEM01 - Valid
- MEMO#10 - Valid
- @two - Invalid (First character is not alphabetic)
- a234/89 - Invalid (Illegal character '/' )
- JohnResult - Invalid (Report name too long)

Execution Of The SAVE Command

The SAVE command takes information from the work file and if a report name has been specified creates a new report containing the current report being viewed on the screen. Alternatively, if no report name is specified on the EDIT screen, the SAVE command updates the existing report with any changes which have been made.

After successfully executing the SAVE command, the Data Entry Line will have been cleared and a message to say the report has been saved will be displayed. If the SAVE command was unsuccessful, any character string which may have been entered will remain on the Data Entry Line.
SELECT COMMAND

This command allows the user to specify a boolean equation that will be applied to the lines of the report. Any report line which does not satisfy the boolean equation will be removed from the report.

To apply a selection equation, the user must enter an equation in the data entry line. The boolean equation may involve combinations of constant factors, column numbers, preceded with a 'c' to distinguish them from the constant factors, and the following operators:

- equal to
- not equal to
- greater than
- greater than or equal to
- less than
- less than or equal to
- and ( join operator )
- or ( join operator )

When the SELECT command is used, the Data Entry Line is deciphered to determine the boolean equation to be applied to the lines of the report. Specification of a character constant involving blank characterer must be enclosed in double quotes, eg "H DIST".

A typical selection may look like:

```plaintext
===> c2 = c3 & (c5 <> "H DIST" | c6 >= 23.72)
```

When the syntax of the boolean expression has been successfully evaluated, any column to column comparison or column to constant comparison will be checked for type compatibility. That is, numeric columns may only be compared with numeric columns or numeric constants. If any violation of this rule is encountered, an error message will be displayed on the screen, indicating which columns are incompatible.
An example. To find all students who enrolled in 1982 and were awarded a HIGH DISTINCTION, the following boolean equation would be entered into the Data Entry Line, the command cell moved to the SELECT command and the ENTER KEY pressed.

```
(CSCI201) ===> c1 >= 82 & (c3 = "H DIST" | c4 = "H DIST")
```

<table>
<thead>
<tr>
<th>STUDENT NUMBER</th>
<th>STUDENT NAME</th>
<th>GRADE</th>
<th>GRADE</th>
</tr>
</thead>
<tbody>
<tr>
<td>8200356</td>
<td>ANDREWS RAYMOND GREG</td>
<td>PASS</td>
<td>CREDIT</td>
</tr>
<tr>
<td>8203671</td>
<td>ATKINSON BRUCE ROBERT</td>
<td>CREDIT</td>
<td>CREDIT</td>
</tr>
<tr>
<td>8212985</td>
<td>BAILEY GEOFF THOMAS</td>
<td>CREDIT</td>
<td>CREDIT</td>
</tr>
<tr>
<td>8200506</td>
<td>BAKER JOHN DAVID</td>
<td>PASS</td>
<td>PASS</td>
</tr>
<tr>
<td>8216826</td>
<td>BROWN JOHN DAVID</td>
<td>PASS</td>
<td>CREDIT</td>
</tr>
<tr>
<td>8134433</td>
<td>CARR ELIZABETH JANE</td>
<td>H DIST</td>
<td>DIST</td>
</tr>
<tr>
<td>8143870</td>
<td>CLARK JAMES ANDREW</td>
<td>CREDIT</td>
<td>PASS</td>
</tr>
<tr>
<td>8200173</td>
<td>COOPER PAUL FRANK</td>
<td>PASS</td>
<td>CREDIT</td>
</tr>
<tr>
<td>8215493</td>
<td>DOYLE ANDREW PETER</td>
<td>H DIST</td>
<td>H DIST</td>
</tr>
<tr>
<td>8248311</td>
<td>DUFFY MAUREEN ALICE</td>
<td>PASS</td>
<td>PASS</td>
</tr>
<tr>
<td>8211036</td>
<td>EDWARDS PETER JOHN</td>
<td>CREDIT</td>
<td>DIST</td>
</tr>
<tr>
<td>8218092</td>
<td>FARRAR MELISSA JANE</td>
<td>DIST</td>
<td>DIST</td>
</tr>
<tr>
<td>8208973</td>
<td>FISHER EDDIE</td>
<td>DIST</td>
<td>H DIST</td>
</tr>
<tr>
<td>8213490</td>
<td>FORBES GRAEME DAVID</td>
<td>CREDIT</td>
<td>DIST</td>
</tr>
<tr>
<td>8200567</td>
<td>FRANKLIN DOUGLAS IAN</td>
<td>DIST</td>
<td>DIST</td>
</tr>
<tr>
<td>8203040</td>
<td>GALE PAUL ROBERT</td>
<td>H DIST</td>
<td>CREDIT</td>
</tr>
<tr>
<td>8217800</td>
<td>GALLOWAY TREVOR BRIAN</td>
<td>DIST</td>
<td></td>
</tr>
</tbody>
</table>

The result of applying the boolean equation to the report is the following:

```
(CSCI201) ===> REPORT SUCCESSFULLY SELECTED
```

<table>
<thead>
<tr>
<th>STUDENT NUMBER</th>
<th>STUDENT NAME</th>
<th>GRADE</th>
<th>GRADE</th>
</tr>
</thead>
<tbody>
<tr>
<td>8215493</td>
<td>DOYLE ANDREW PETER</td>
<td>H DIST</td>
<td>H DIST</td>
</tr>
<tr>
<td>8200973</td>
<td>FISHER EDDIE</td>
<td>DIST</td>
<td>H DIST</td>
</tr>
<tr>
<td>8203040</td>
<td>GALE PAUL ROBERT</td>
<td>H DIST</td>
<td>CREDIT</td>
</tr>
</tbody>
</table>

END OF REPORT
SORT COMMAND

The SORT command allows you to resequence the lines in a report. A report may be sorted as a whole or on a number of columns.

Specifying A Report Sort

To perform a sort on the entire line of a report the required report sequence is entered in the DATA ENTRY LINE. That is:

`==>` a

This will result in the report being sorted in ascending order.

NOTE: If nothing is entered on the DATA ENTRY LINE when the SORT command is executed then the above sort will be performed.

`==>` d

This will result in the report being sorted in descending order.

`==>` s

This will result in the report being sorted in ascending order, if it is not already in descending order, and all multiple occurrences of a line will be suppressed.

Specifying A Column Sort

To perform a sort on selected columns of a report the column numbers are entered in the DATA ENTRY LINE in the order of precedence.

NOTE: A maximum of 9 columns may be specified as sorting criteria.

Specifying Ascending/Descending Order -
An 'a' is entered after the column number if it is to be sorted in ascending order. A 'd' is entered after the column number if it is to be sorted in descending order. If neither are specified after the column number then the column will be sorted in ascending order.

Specifying A Numeric Sort -
As well as specifying ascending or descending after each column number a 'n' may be entered to perform a numeric sort. A numeric sort may only be specified for columns which have a numeric column type.

Specifying Suppression Of Duplicate Keys -
To suppress the display of lines which have duplicate information in the columns on which the sort is being performed, an 's' is entered on the DATA ENTRY LINE.

EXAMPLES

`==>` 1 4dn

This will sort column 1 into ascending order and column 4 in numeric descending order.

`==>` 4 d 3 a 2 d

This will firstly sort, column 4 in descending order, then column 3 in ascending order and finally, column 2 in descending order.
<table>
<thead>
<tr>
<th>STUDENT NAME</th>
<th>A1</th>
<th>A2</th>
<th>A3</th>
<th>A4</th>
<th>AS</th>
<th>ME</th>
<th>FE</th>
<th>TOT</th>
<th>FINAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANDREWS RAYMOND GREG</td>
<td>5</td>
<td>4</td>
<td>6</td>
<td>7</td>
<td>11</td>
<td>28</td>
<td>59</td>
<td>PASS</td>
<td></td>
</tr>
<tr>
<td>ATKINSON BRUCE ROBERT</td>
<td>6</td>
<td>6</td>
<td>7</td>
<td>9</td>
<td>7</td>
<td>15</td>
<td>28</td>
<td>71</td>
<td></td>
</tr>
<tr>
<td>BAILEY GEOFF THOMAS</td>
<td>7</td>
<td>7</td>
<td>8</td>
<td>9</td>
<td>6</td>
<td>12</td>
<td>28</td>
<td>72</td>
<td></td>
</tr>
<tr>
<td>BAKER JOHN DAVID</td>
<td>5</td>
<td>6</td>
<td>6</td>
<td>6</td>
<td>11</td>
<td>27</td>
<td>62</td>
<td>PASS</td>
<td></td>
</tr>
<tr>
<td>BISHOP GREG ALLAN</td>
<td>6</td>
<td>7</td>
<td>7</td>
<td>7</td>
<td>8</td>
<td>16</td>
<td>29</td>
<td>73</td>
<td></td>
</tr>
<tr>
<td>BROWN JOHN DAVID</td>
<td>6</td>
<td>3</td>
<td>4</td>
<td>8</td>
<td>8</td>
<td>12</td>
<td>17</td>
<td>63</td>
<td></td>
</tr>
<tr>
<td>CARR ELIZABETH JANE</td>
<td>9</td>
<td>9</td>
<td>10</td>
<td>10</td>
<td>10</td>
<td>19</td>
<td>28</td>
<td>96</td>
<td></td>
</tr>
<tr>
<td>CLARK JAMES ANDREW</td>
<td>7</td>
<td>7</td>
<td>9</td>
<td>8</td>
<td>15</td>
<td>27</td>
<td>73</td>
<td>CREDIT</td>
<td></td>
</tr>
<tr>
<td>COOPER PAUL FRANK</td>
<td>6</td>
<td>7</td>
<td>6</td>
<td>8</td>
<td>7</td>
<td>13</td>
<td>21</td>
<td>61</td>
<td></td>
</tr>
<tr>
<td>DAVIS STEVEN JOHN</td>
<td>8</td>
<td>9</td>
<td>8</td>
<td>8</td>
<td>18</td>
<td>31</td>
<td>82</td>
<td>DIST</td>
<td></td>
</tr>
<tr>
<td>DOEY ANDREW PETER</td>
<td>9</td>
<td>10</td>
<td>10</td>
<td>10</td>
<td>19</td>
<td>37</td>
<td>96</td>
<td>H DIST</td>
<td></td>
</tr>
<tr>
<td>DUFFY MAUREEN ALICE</td>
<td>4</td>
<td>4</td>
<td>6</td>
<td>6</td>
<td>12</td>
<td>20</td>
<td>54</td>
<td>PASS</td>
<td></td>
</tr>
<tr>
<td>EDWARDS JUDITH ALISON</td>
<td>6</td>
<td>6</td>
<td>7</td>
<td>7</td>
<td>13</td>
<td>22</td>
<td>72</td>
<td>CREDIT</td>
<td></td>
</tr>
<tr>
<td>EVANS JUDITH ALISON</td>
<td>7</td>
<td>7</td>
<td>7</td>
<td>8</td>
<td>12</td>
<td>19</td>
<td>70</td>
<td>CREDIT</td>
<td></td>
</tr>
<tr>
<td>FARRAR MELISSA JANE</td>
<td>8</td>
<td>8</td>
<td>9</td>
<td>10</td>
<td>16</td>
<td>32</td>
<td>83</td>
<td>DIST</td>
<td></td>
</tr>
<tr>
<td>FISHER EDDIE</td>
<td>3</td>
<td>3</td>
<td>7</td>
<td>6</td>
<td>11</td>
<td>20</td>
<td>52</td>
<td>PASS</td>
<td></td>
</tr>
</tbody>
</table>

If the `SORT` command is submitted from the above screen the resultant report would contain column 10 in numeric descending order and will suppress any lines which have duplicate contents in column 10. That is:

<table>
<thead>
<tr>
<th>STUDENT NAME</th>
<th>A1</th>
<th>A2</th>
<th>A3</th>
<th>A4</th>
<th>AS</th>
<th>ME</th>
<th>FE</th>
<th>TOT</th>
<th>FINAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANDREWS RAYMOND GREG</td>
<td>5</td>
<td>4</td>
<td>6</td>
<td>7</td>
<td>11</td>
<td>28</td>
<td>59</td>
<td>PASS</td>
<td></td>
</tr>
<tr>
<td>ATKINSON BRUCE ROBERT</td>
<td>6</td>
<td>6</td>
<td>7</td>
<td>9</td>
<td>7</td>
<td>15</td>
<td>28</td>
<td>71</td>
<td></td>
</tr>
<tr>
<td>BAILEY GEOFF THOMAS</td>
<td>7</td>
<td>7</td>
<td>8</td>
<td>9</td>
<td>6</td>
<td>12</td>
<td>28</td>
<td>72</td>
<td></td>
</tr>
<tr>
<td>BAKER JOHN DAVID</td>
<td>5</td>
<td>6</td>
<td>6</td>
<td>6</td>
<td>11</td>
<td>27</td>
<td>62</td>
<td>PASS</td>
<td></td>
</tr>
<tr>
<td>BISHOP GREG ALLAN</td>
<td>6</td>
<td>7</td>
<td>7</td>
<td>7</td>
<td>8</td>
<td>16</td>
<td>29</td>
<td>73</td>
<td></td>
</tr>
<tr>
<td>BROWN JOHN DAVID</td>
<td>6</td>
<td>3</td>
<td>4</td>
<td>8</td>
<td>8</td>
<td>12</td>
<td>17</td>
<td>63</td>
<td></td>
</tr>
<tr>
<td>CARR ELIZABETH JANE</td>
<td>9</td>
<td>9</td>
<td>10</td>
<td>10</td>
<td>10</td>
<td>19</td>
<td>28</td>
<td>96</td>
<td></td>
</tr>
<tr>
<td>CLARK JAMES ANDREW</td>
<td>7</td>
<td>7</td>
<td>9</td>
<td>8</td>
<td>15</td>
<td>27</td>
<td>73</td>
<td>CREDIT</td>
<td></td>
</tr>
<tr>
<td>COOPER PAUL FRANK</td>
<td>6</td>
<td>7</td>
<td>6</td>
<td>8</td>
<td>7</td>
<td>13</td>
<td>21</td>
<td>61</td>
<td></td>
</tr>
<tr>
<td>DAVIS STEVEN JOHN</td>
<td>8</td>
<td>9</td>
<td>8</td>
<td>8</td>
<td>18</td>
<td>31</td>
<td>82</td>
<td>DIST</td>
<td></td>
</tr>
<tr>
<td>DOEY ANDREW PETER</td>
<td>9</td>
<td>10</td>
<td>10</td>
<td>10</td>
<td>19</td>
<td>37</td>
<td>96</td>
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</table>

END OF REPORT
SUBMIT COMMAND

The SUBMIT Command In The Join Specifications Facility

Reports are joined together according to the join specifications by executing the SUBMIT command. If the join specifications are complete, the report will be joined and the Browse Facility will be redisplayed to continue browsing the resulting report. A message is displayed informing you that the reports were joined. If the join specifications are incomplete, an error message will be displayed.

The SUBMIT Command In The Print Facility

A report will be printed according to the print specifications by executing the SUBMIT command. Upon successful execution of the SUBMIT command, you will be returned to the facility you were in, when you decided to print the report. The screen will appear exactly as it was before, with the exception of the position of the Data Cell and the Command Cell. Both will have returned to the Home position. A message will also be displayed to indicate that the report has been queued for printing.
UPDATE COMMAND

The UPDATE Command In The Copy Report Facility

This command allows you to copy one report into another. Checks are done to make sure that you have at least read access to the report that you wish to copy and that no report already exists with the same name as the new report. Execution of the UPDATE command will copy the original report and create a new report with the report name specified. (See the Copy Report Utility section of the manual for a description of the Copy Report Facility).

Upon successful execution of the UPDATE command, you will be presented with a message to indicate to you that the report was copied. The Data Cell and Command Cells are returned to the Home position.

The UPDATE Command In The Rename Report Facility

This command allows you to rename an existing report. Checks are done to make sure that you have at least update access to the report you are about to rename and that no report already exists with the same name as the new report name. A check is also done to make sure no-one is currently editing or browsing the report. Execution of the UPDATE command will rename the report. (See the Rename Report Utility section of this manual for a description of the Rename Report Facility).

Upon successful execution of the UPDATE command, you will be presented with a message to indicate to you that the report was renamed. The Data Cell and Command Cells are returned to the Home position.

The UPDATE Command In The Delete Report Facility

This command allows you to delete an existing report. Checks are done to make sure that you have at least update access to the report you are about to delete and that no-one is currently editing or browsing the report. Execution of the UPDATE command will delete the report. (See the Delete Report Utility section of this manual for a description of the Delete Report Facility).

Upon successful execution of the UPDATE command, you will be presented with a message to indicate to you that the report was deleted. The Data Cell and Command Cells are returned to the Home position.

Refer to the Report Environment Section of this manual for a description of report access modes.
The UPDATE Command In The Description/Status Facility

This command allows you to change the description and status of an existing report. Checks are done to make sure that you have at least update access to the report. Execution of the UPDATE command will update the report description and report status with the description and status currently displayed on the screen. (See the Description/Status Utility section of this manual for a description of the Description/Status Facilities).

Upon successful execution of the UPDATE command, you will be presented with a message to indicate that the report’s description and status has been changed. The Data Cell and Command Cells are returned to the Home position.

The UPDATE Command In The Security Facility

This command allows you to change a report security access modes. Checks are made to make sure that you have at least update access to the report. Execution of the UPDATE command will update the security modes with the values currently displayed on the screen. (See the Security Utility section of this manual for a description of the Security Facility).

Upon successful execution of the UPDATE command, you will be presented with a message to indicate that the security tags have been changed. The Data Cell and Command Cells are returned to the Home position.

The UPDATE Command In The Column Specifications Facility

The Column Specifications Facility allows you to insert, delete, move, and copy columns and to change column widths and number decimals. (See Column Specification Facility section of this manual for a full description of the Column Specification Facility). To apply these changes to the report, the UPDATE command is executed.

Upon successful execution of the UPDATE command, the changes specified are made and you are returned to the Edit Facility Screen. The Data Cell and the Command Cell are returned to the Home position. A message is displayed, to inform you that the columns have been updated.

Refer to the Report Environment Section of this manual for a description of report access modes.
ERROR MESSAGES

Access Permissions For Report XXXXXXXX Updated

This message is displayed on the report SECURITY utility screen following the successful update of the read or write access permission tags for the owner, group, or users of a report.

Blank String Invalid

This message is displayed on the BROWSE and EDIT facility screens if the user tries to enter a blank character string, and blanks are not permissible. The situation may be rectified by entering a number on the data entry line and performing the required command.

Column Copied

This message is displayed on the COLUMN SPECIFICATIONS facility screen following the successful copy of a column from one position in the report to another position within the report.

Column Copy Will Exceed Report Width Maximum Of XXX

This message is displayed on the COLUMN SPECIFICATIONS facility screen if the requested report column copy would cause the report to exceed the maximum report width allowable.

Column Deleted

This message is displayed on the COLUMN SPECIFICATIONS facility screen following the successful deletion of a column from the report.

Column Inserted

This message is displayed on the COLUMN SPECIFICATIONS facility screen following the successful insertion of a column in the report.

Column Moved

This message is displayed on the COLUMN SPECIFICATIONS facility screen following the successful move of a column from one position in the report to another position within the report.
Column Update Request Cancelled

This message is displayed on the EDIT facility screen if the user executed the COLUMN command, but then returned to the EDIT facility screen by execution of the CANCEL command without updating the report column specifications.

Column XX Does Not Exist

This message is displayed on the COLUMN SPECIFICATIONS facility or PRINT utility screens if the entered column does not exist in the report.

Column XX Has A Character Column Type

This message is displayed on the EDIT facility screen following execution of the MATH command if one of the report columns specified in the mathematical equation has a column type of character. The error situation may be rectified by re-entering the mathematical equation, ensuring that all the specified columns are of type numeric, and executing the MATH command.

Column XX Is Not Known To Report

This message is displayed following execution of the FIND, SELECT or MATH commands on the BROWSE and EDIT facility screens if the entered column does not exist in the report.

Column XX Is Not Numeric

This message is displayed on the BROWSE and EDIT facility screens following execution of the SORT command with one of the columns in the sort specification being of type character. The situation may be rectified by re-entering the sort specification, ensuring that the specified columns have a numeric column type, and pressing enter.

Column XX Not Found

This message is displayed following execution of the PROJECT and SORT commands on the BROWSE and EDIT facility screens if the specified column does not exist in the report.

Column XX - Type Incompatible With String

This message is displayed on the BROWSE facility screen following execution of the SELECT command with entry of a boolean expression containing a comparison between a numeric report column and a character string. The situation may be rectified by re-entering the boolean expression on the data entry line, ensuring that comparisons are made between report columns and strings of the same type, and pressing enter.
Columns Updated Successfully

This message is displayed on the EDIT facility screen following the successful update of the report column specifications.

Columns XX And YY - Type Incompatible

This message is displayed on the BROWSE facility screen following execution of the SELECT command with a boolean expression entered containing a comparison between a numeric report column and a character report column. The situation may be rectified by re-entering the boolean expression on the data entry line, ensuring that all comparisons are made between report columns of the same column type, and pressing enter.

Copy Command Cancelled

This message is displayed on the EDIT facility screen following the successful cancellation of the line COPY command.

Copy Invalid On This Line

This message is displayed on the EDIT facility screen following execution of the COPY command if the user has positioned the Data Cell on the report heading or column heading lines. The situation may be rectified by tabbing the Data Cell to a line within the actual report which is to be copied, and pressing enter.

Copy Specifications Incomplete

This message is displayed on the COPY REPORT utility screen following execution of the UPDATE command without entering either the "from" or "to" report name. The situation may be rectified by entering the report name on the data entry line, tabbing the Data Cell to the required report field, and pressing enter.

Copy Will Exceed Column Maximum Of XX

This message is displayed on the COLUMN SPECIFICATIONS facility screen if the requested copy of report columns would cause the number of columns in the current report to exceed the maximum allowable.

Copycol Command Cancelled

This message is displayed on the COLUMN SPECIFICATIONS facility screen following the successful cancellation of the COPYCOL command.

Current Description/Status Redisplayed

This message is displayed on the DESCRIPTION/STATUS utility screen following the successful execution of the RESTORE command.
Current Description/Status Redisplayed

This message is displayed on the DESCRIPTION/STATUS utility screen following the successful execution of the RESTORE command.

Current Permissions For Report XXXXXXXX Displayed

This message is displayed on the report SECURITY utility screen following the successful retrieval and display of the current access permissions for the report.

Data Base Access Error

This message is displayed on the EDIT and CATALOGUE facility, or on the DESCRIPTION/STATUS, RENAME, COPY and DELETE report utility screens if an unexpected error occurs while trying to access the data base.

Data Entered Exceeds Column Width

This message is displayed on the EDIT facility screen if the width of the data entered exceeds the current width for the column specified.

Deletion Invalid On This Line

This message is displayed on the EDIT facility screen following execution of the DELETE command if the user has positioned the Data Cell on the report heading or column heading lines. The situation may be rectified by tabbing the Data Cell to a line within the actual report which is to be deleted, and pressing enter.

Duplicate Columns Specified

This message is displayed on the BROWSE facility screen following execution of the PROJECT command if the same column number has been specified twice.

End Of Report Reached

This message is displayed on the EDIT and BROWSE facility screens upon reaching the bottom of the current report being displayed.

Enter Access Permission

This message is displayed on the report SECURITY utility screen following execution of the UPDATE command without all the required access permission tags having been entered. The situation may be rectified by entering an access permission on the data entry line, tabbing the Data Cell to the appropriate access permission tag field, and pressing enter.
Enter Command Or Select Report

This message is displayed on the report CATALOGUE facility screen if the user presses enter without first selecting a command or a report. The situation may be rectified by performing one of the following: tabbing the Command Cell to the required command and pressing enter, tabbing the Data Cell to the required report name and pressing enter, or entering the required report name on the data entry line and pressing enter.

Enter Copy Specifications

This message is displayed on the COPY report utility screen following execution of the UPDATE command without either of the required report names having been entered. The situation may be rectified by entering a report name on the Data Entry line, tabbing the Data Cell to the required report name field, and pressing enter.

Enter Decimals Specification

This message is displayed on the COLUMN SPECIFICATIONS facility screen following execution of the UPDATE command if the number of decimal places required for a particular column has not been entered. This situation may be rectified by entering a decimal specification on the data entry line, tabbing the Data Cell to the required field, and pressing enter.

Enter Description

This message is displayed on the report DESCRIPTION/STATUS utility screen following execution of the UPDATE command without a report description having been entered. The situation may be rectified by entering a report description of up to 20 characters on the data entry line, tabbing the Data Cell to the report description field, and pressing enter.

Enter Join Specifications

This message is displayed following execution of the SUBMIT command on the JOIN SPECIFICATIONS facility screen without the entry of join numbers in the report columns on which the join is to be performed. The situation may be rectified by entering the join numbers on the data entry line, tabbing the Data Cell to the required report column field, and pressing enter.

Enter New Report Name

This message is displayed on the BROWSE facility screen following execution of the SAVE command without the entry of the new name under which the report is to be saved. The situation may be rectified by entering a new report name of up to 8 characters on the data entry line, and pressing enter.
Enter Project Specifications

This message is displayed on the BROWSE facility screen following execution of the PROJECT command without entry of the report column numbers which are to be projected. The situation may be rectified by entering the required column numbers on the data entry line, and pressing enter.

Enter Rename Specifications

This message is displayed on the RENAME report utility screen if the user presses enter while the Data Cell is at the HOME position without entering a report name on the data entry line. The situation may be rectified by entering a report name of up to 8 characters on the data entry line, tabbing the Data Cell to the required report name field, and pressing enter.

Enter Report Name

This message is displayed on the DESCRIPTION/STATUS, SECURITY, or DELETE report utility screens if the user tries to execute a command or enter data on the screen before a report name has been entered. The situation may be rectified by entering a report name on the data entry line, tabbing the Data Cell to the report name field, and pressing enter.

Enter Report Name You Wish To Locate

This message is displayed on the report CATALOGUE screen following execution of the LOCATE command without a report name having been entered. The situation may be rectified by entering a report name of up to 8 characters on the data entry line, and pressing enter.

Enter Report To Be Joined

This message is displayed on the BROWSE facility screen following execution of the JOIN command without entry of the name of the report to be joined with the current report. The situation may be rectified by entering the required report name on the data entry line, and pressing enter.

Enter 'Search' String

This message is displayed on the BROWSE facility screen following execution of the FIND command without the entry of a string to be searched for on the data entry line. The situation may be rectified by entering a valid search string on the data entry line, and pressing enter.
**Enter Select Specification**

This message is displayed on the BROWSE facility screen following execution of the SELECT command without a boolean expression entered on the data entry line. The situation may be rectified by entering a valid boolean expression on the data entry line, and pressing enter.

**Enter Type Specification**

This message is displayed on the COLUMN SPECIFICATIONS facility screen following execution of the UPDATE command without the column type specification having been entered. The situation may be rectified by entering a 'C' (character) or an 'N' (numeric) on the data entry line, tabbing the Data Cell to the type specification field, and pressing enter.

**Enter Type Specification First**

This message is displayed on the COLUMN SPECIFICATIONS facility screen if the user tries to enter a column width specification without having first entered a column type specification. The situation may be rectified by entering a 'C' (character) or an 'N' (numeric) on the data entry line, tabbing the Data Cell to the type specification field, and pressing enter.

**Enter Width Specification**

This message is displayed on the COLUMN SPECIFICATIONS facility screen if the Data Cell is positioned on the width specification field and a column width specification has not been entered on the data entry line. The situation may be rectified by entering the column width specification on the data entry line, and pressing enter.

**Enter Width Specification First**

This message is displayed on the COLUMN SPECIFICATIONS facility screen if the user tries to enter a column decimals specification without having first entered a column width specification. The situation may be rectified by entering the column width specification on the data entry line, tabbing the Data Cell to the width specification field, and pressing enter.

**Entered Access Is Invalid**

This message is displayed on the report SECURITY utility screen if the user tries to enter an access permission tag which is not one of the following: 'Y', 'N', or '_'. The error situation may be rectified by entering one of the above access permissions on the data entry line, tabbing the Data Cell to the required access permission tag field, and pressing enter.
Entered Status Is Invalid

This message is displayed on the DESCRIPTION/STATUS utility screen if the user tries to enter a report status which is not one of the following: permanent, temporary, p, or t. The error situation may be rectified by entering one of these values on the data entry line, and pressing enter.

Equation Being Evaluated

This message is displayed on the EDIT facility screen following selection of the MATH command while the entered mathematical equation is being evaluated.

Equation Successfully Evaluated

This message is displayed on the EDIT facility screen following the successful execution of the MATH command.

Excessive Columns Specified

This message is displayed on the PRINT utility screen following a length of 35 characters being exceeded when entering the columns to be totalled. The situation may be rectified by entering the columns to be totalled on the data entry line to a maximum of 35 characters, tabbing the Data Cell to the total columns field, and pressing enter.

Extraneous Information In Find Specification

This message is displayed following execution of the FIND command on the BROWSE and EDIT facility screens if the entered search string is incomplete. The situation may be rectified by entering a valid search string on the data entry line, and pressing enter.

Incomplete Delete Specifications

This message is displayed on the DELETE report utility screen following execution of the UPDATE command without a report name having been entered. The situation may be rectified by entering a report name on the data entry line, tabbing the Data Cell to the report field, and pressing enter.

Indicate Column To Copy

This message is displayed on the COLUMN SPECIFICATIONS facility screen following execution of the COPYCOL command without specifying the column in the report which is to be copied. The situation may be rectified by tabbing the Data Cell to the column width or column format field of the report column to be copied, and pressing enter.
Indicate Column To Delete

This message is displayed on the COLUMN SPECIFICATIONS facility screen following execution of the DLETCOL command without specifying the column in the report which is to be deleted. The situation may be rectified by tabbing the Data Cell to the column width or column format field of the first report column to be deleted, and pressing enter.

Indicate Column To Move

This message is displayed on the COLUMN SPECIFICATIONS facility screen following execution of the MOVECOL command without specifying the column in the report which is to be moved. The situation may be rectified by tabbing the Data Cell to the column width or column format field of the first report column to be moved, and pressing enter.

Indicate Copy 'After' Column

This message is displayed on the COLUMN SPECIFICATIONS facility screen following execution of the COPYCOL command without specifying the position in the report to which the columns are to be copied to. The situation may be rectified by tabbing the Data Cell to the column width or column format field of the line prior to where the columns are to be copied, and pressing enter. Columns may be copied before the first column of the report by tabbing the Data Cell to its HOME position, and pressing enter.

Indicate Copy 'After' Line

This message is displayed following execution of the COPY command on the EDIT facility screen without specifying the position in the report after which the lines are to be copied. The situation may be rectified by tabbing the Data Cell to the line prior to where the lines are to be copied, and pressing enter. Lines may be copied to the top of a report by tabbing the Data Cell to its HOME position, and pressing enter.

Indicate Field To Update

This message is displayed on the COLUMN SPECIFICATIONS facility, or the PRINT, DESCRIPTION/STATUS, SECURITY, RENAME, COPY or DELETE report utility screens if the user has entered data on the data entry line and pressed enter without selecting which field is to be updated. The situation may be rectified by tabbing the Data Cell to the required field, and pressing enter.
Indicate Line To Be Copied

This message is displayed following execution of the COPY command on the EDIT facility screen without specifying which line in the report is to be copied. The situation may be rectified by tabbing the Data Cell to the first line to be copied, and pressing enter.

Indicate Line To Be Moved

This message is displayed following execution of the MOVE command on the EDIT facility screen without specifying which line in the report is to be moved. The situation may be rectified by tabbing the Data Cell to the first line to be moved, and pressing enter.

Indicate Line To Delete

This message is displayed following execution of the DELETE command on the EDIT facility screen without specifying which line in the report is to be deleted. The situation may be rectified by tabbing the Data Cell to the first line to be deleted, and pressing enter.

Indicate Move 'After' Column

This message is displayed on the EDIT facility screen following execution of the MOVECOL command without specifying the position in the report to which the columns are to be moved. The situation may be rectified by tabbing the Data Cell to the column width or column format field of the column line prior to where the columns are to be moved, and pressing enter. Columns may be moved before the first column of a report by tabbing the Data Cell to its HOME position, and pressing enter.

Indicate Move 'After' Line

This message is displayed on the EDIT facility screen following execution of the MOVE command without specifying the position in the report to which the lines are to be moved. The situation may be rectified by tabbing the Data Cell to the line prior to where the lines are to be moved, and pressing enter. Lines may be moved to the top of a report by tabbing the Data Cell to its HOME position, and pressing enter.

Insertion Invalid On This Line

This message is displayed on the EDIT facility screen following execution of the INSERT command if the Data Cell is positioned on either the report heading or column heading line. The situation may be rectified by tabbing the Data Cell to the line immediately above the position in the report where the lines are to be inserted, and pressing enter. Lines may be inserted before the first line of a report by tabbing the Data Cell to its HOME position, and pressing enter.
**Insertion Will Exceed Column Maximum of XX**

This message is displayed on the COLUMN SPECIFICATIONS facility screen if the requested insertion of columns would cause the report to exceed the maximum number of columns allowable.

**Insertion Will Exceed Report Width Maximum Of XXX**

This message is displayed on the COLUMN SPECIFICATIONS facility screen if the requested insertion of columns would cause the report to exceed the maximum report width allowable.

**Insufficient Access Authority**

This message is displayed on the CATALOGUE facility, or DESCRIPTION/STATUS, SECURITY, RENAME, COPY, or DELETE report utility screens if the user tries to access or update a report to which he has insufficient access. Read access is required for browsing or copying a report. Read and write access is required for editing, renaming, or deleting a report, or updating the report description and status. Only the owner of a report may update the report security.

**Insufficient Access Authority - Join Cancelled**

This message is displayed on the BROWSE facility screen following execution of the JOIN command on a report to which the user has insufficient access. Read and write access to a report is required for successful execution of the JOIN command, otherwise cancellation of the JOIN command will occur.

**Integer Must Be In The Range 1 To 20**

This message is displayed on the EDIT facility screen following execution of any of the line commands if the entered integer is not within the range 1 to 20. The situation may be rectified by entering an integer within the required range on the data entry line and pressing enter.

**Invalid Column Specification**

This message is displayed on the PRINT utility screen, or on the BROWSE and EDIT facility screens following execution of the PROJECT or SORT commands if the entered column does not exist within the report. The situation may be rectified by entering a valid column specification on the data entry line, and pressing enter.

**Invalid Column Specification: XX Not Numeric**

This message is displayed on the PRINT utility screen following a request for the totalling of a non-numeric column. The situation may be rectified by entering the column numbers of numeric columns to be totalled on the data entry line, and pressing enter.
Invalid Copy 'After' Column

This message is displayed on the COLUMN SPECIFICATIONS facility screen following execution of the COPYCOL command with the Data Cell positioned on one of the report column lines which is to be copied. The situation may be rectified by tabbing the Data Cell to the column width or column format field of the column line prior to where the columns are to be copied, and pressing enter. Columns may be copied before the first column in a report by tabbing the Data Cell to its HOME position, and pressing enter.

Invalid Copy 'After' Line

This message is displayed on the EDIT facility screen following execution of the line COPY command with the Data Cell positioned on one of the report lines which is to be copied. The situation may be rectified by tabbing the Data Cell to the report line prior to which lines are to be copied, and pressing enter. Lines may be copied to the top of a report by tabbing the Data Cell to its HOME position, and pressing enter.

Invalid Copy Specification

This message is displayed on the EDIT facility screen following execution of the COPY command with an invalid integer entered on the data entry line. The situation may be rectified by entering a valid integer on the data entry line, and pressing enter.

Invalid Decimals Specification

This message is displayed on the COLUMN SPECIFICATIONS facility screen following entry of a non-numeric decimals specification. The situation may be rectified by entering a numeric column decimals specification on the data entry line, and pressing enter.

Invalid Decimals Specification Update - Must Be Blank

This message is displayed on the COLUMN SPECIFICATIONS facility screen following entry of a column decimals specification for a column of type character. The decimals specification must remain blank for a character column type.

Invalid Delete Specification

This message is displayed on the EDIT facility screen following execution of the DELETE command with an invalid integer entered on the data entry line. The situation may be rectified by entering a valid integer on the data entry line, and pressing enter.
Invalid Description

This message is displayed on the DESCRIPTION/STATUS utility screen following entry of a report description which exceeds the maximum length of 20 characters. The situation may be rectified by entering a report description of up to 20 characters in length on the data entry line, and pressing enter.

Invalid Input String

This message is displayed on the BROWSE and EDIT facility screens following entry of a string which is not a valid numeric value. An error will occur if one of the following is entered: a non-numeric value, a sign only, a sign followed by another sign, or a sign followed by a decimal point. The situation may be rectified by entering a valid numeric value on the data entry line, and pressing enter.

Invalid Insert Specification

This message is displayed on the EDIT facility screen following execution of the INSERT command with entry of an invalid integer on the data entry line. The situation may be rectified by entering a valid integer on the data entry line, and pressing enter.

Invalid Move 'After' Column

This message is displayed on the COLUMN SPECIFICATIONS facility screen following execution of the MOVECOL command with the Data Cell positioned on one of the report column lines which is to be moved. The situation may be rectified by tabbing the Data Cell to the column width or column format field of the column line prior to where the columns are to be moved, and pressing enter. Columns may be moved before the first column in a report by tabbing the Data Cell to its HOME position, and pressing enter.

Invalid Move 'After' Line

This message is displayed on the EDIT facility screen following execution of the line MOVE command with the Data Cell positioned on one of the report lines which is to be moved. The situation may be rectified by tabbing the Data Cell to the report line prior to which lines are to be moved, and pressing enter. Lines may be moved to the top of a report by tabbing the Data Cell to its HOME position, and pressing enter.

Invalid Move Specification

This message is displayed on the EDIT facility screen following execution of the MOVE command with an invalid integer entered on the data entry line. The situation may be rectified by entering a valid integer on the data entry line, and pressing enter.
Invalid 'Number Of Columns' To Copy

This message is displayed on the COLUMN SPECIFICATIONS facility screen following entry of a non-numeric number of columns on the data entry line. The situation may be rectified by entering the number of the columns to be copied on the data entry line, and pressing enter.

Invalid 'Number of Columns' To Delete

This message is displayed on the COLUMN SPECIFICATIONS facility screen following entry of a non-numeric number of columns on the data entry line. The situation may be rectified by entering the number of the columns to be deleted on the data entry line, and pressing enter.

Invalid 'Number Of Columns' To Insert

This message is displayed on the COLUMN SPECIFICATIONS facility screen following entry of a non-numeric number of columns on the data entry line. The situation may be rectified by entering the number of the columns to be inserted on the data entry line, and pressing enter.

Invalid 'Number Of Columns' To Move

This message is displayed on the COLUMN SPECIFICATIONS facility screen following entry of a non-numeric number of columns on the data entry line. The situation may be rectified by entering the number of the columns to be moved on the data entry line, and pressing enter.

Invalid Number Of Copies

This message is displayed on the PRINT utility screen following entry of the number of copies of a report to be printed which is not in the range 0 to 9. The situation may be rectified by entering a value within the abovementioned range on the data entry line, and pressing enter.

Invalid 'Number Of Lines' To Scroll

This message is displayed on the COLUMN SPECIFICATIONS or BROWSE facility screens following entry of a non-numeric number of lines to be scrolled. The situation may be rectified by entering a numeric number of lines on the data entry line and requesting the report to be scrolled.

Invalid Print Specification - Enter 'Y' or 'N'

This message is displayed on the PRINT utility screen following entry of a report print specification which was not 'Y' or 'N'. The situation may be rectified by entering one of these values on the data entry line, and pressing enter.
Invalid Quote Position

This message is displayed on the BROWSE and EDIT facility screens following execution of the FIND command if the entered search string contains a quote. The situation may be rectified by entering a valid search string on the data entry line, and pressing enter.

Invalid Report Name

This message is displayed on the CATALOGUE facility, and DESCRIPTION/STATUS, SECURITY, RENAME, and COPY report utility screens following entry of a report name which either does not begin with a letter, or contains characters other than letters, numbers, or the national characters @, #, or $. The situation may be rectified by entering a valid report name on the data entry line, and pressing enter.

Invalid Report Name - Cannot Be Current Report

This message is displayed on the BROWSE facility screen following execution of the JOIN command with the entry of the current report name on the data entry line. The current report may not be joined with itself. The situation may be rectified by entering a valid report name on the data entry line, and pressing enter.

Invalid Report Name - Too Long

This message is displayed on the BROWSE facility screen following entry of a report name exceeding 8 characters in length. The situation may be rectified by entering a report name of up to 8 characters on the data entry line, and pressing enter.

Invalid Sort Specification

This message is displayed on the BROWSE and EDIT facility screens following execution of the SORT command with an invalid order criteria. The situation may be rectified by entering a valid sort specification with an order criteria of ‘a’ (ascending) or ‘d’ (descending) on the data entry line, and pressing enter.

Invalid Type Specification – Must Be ‘C’ Or ‘N’

This message is displayed on the COLUMN SPECIFICATIONS facility screen following entry of a column type specification which is not ‘C’ (character) or ‘N’ (numeric). The situation may be rectified by entering one of these values on the data entry line, and pressing enter.
Invalid Width Specification

This message is displayed on the COLUMN SPECIFICATIONS facility screen following entry of a non-numeric column width specification. The situation may be rectified by entering a numeric column width specification on the data entry line, and pressing enter.

Invalid Width Specification - Cannot Be Zero

This message is displayed on the COLUMN SPECIFICATIONS facility screen following entry of a column width specification of zero. The situation may be rectified by entering a column width specification greater than 2 on the data entry line, and pressing enter.

Join Cancelled

This message is displayed on the BROWSE facility screen following the successful cancellation of the JOIN command.

Join Number Already Exists

This message is displayed on the JOIN SPECIFICATIONS facility screen following the entering of a join number that has already been specified for that report. The situation may be rectified by entering a unique join number on the data entry line, tabbing the Data Cell to the required report column field, and pressing enter.

Join Number Exceeds Column Length

This message is displayed on the JOIN SPECIFICATIONS facility screen following the entering of a join number join number which exceeds the length of the report column which is to be joined.

Join Number XX: Incompatible Lengths

This message is displayed on the JOIN SPECIFICATIONS facility screen following execution of the SUBMIT command with the join number XX specified on two report columns of differing lengths. The situation may be rectified by executing the SUBMIT command ensuring that join numbers are only specified for report columns of equal length.

Join Number XX: Incompatible Types

This message is displayed on the JOIN SPECIFICATIONS facility screen following execution of the SUBMIT command with the join number XX specified on two report columns of differing data types. The situation may be rectified by executing the SUBMIT command ensuring that join numbers are only specified for report columns of the same data type, that is, either both columns are of type character or both columns are of type numeric.
Join Numbers Must Be Numeric

This message is displayed on the JOIN SPECIFICATIONS facility screen following the pressing of a non-numeric key. The situation may be rectified by entering a numeric join number on the data entry line, tabbing the Data Cell to the required report column field, and pressing enter.

Lines Copied

This message is displayed on the EDIT facility screen following the successful execution of the COPY command.

Lines Deleted

This message is displayed on the EDIT facility screen following the successful execution of the DELETE command.

Lines Inserted

This message is displayed on the EDIT facility screen following the successful execution of the INSERT command.

Lines Moved

This message is displayed on the EDIT facility screen following the successful execution of the MOVE command.

Move Command Cancelled

This message is displayed on the EDIT facility screen following the successful cancellation of the MOVE command.

Move Invalid On This Line

This message is displayed on the EDIT facility screen following execution of the MOVE command with the Data Cell positioned on the report heading or the report column heading line. The situation may be rectified by tabbing the Data Cell to a line within the actual report which is to be moved, and pressing enter.

Movecol Command Cancelled

This message is displayed on the COLUMN SPECIFICATIONS facility screen following the successful cancellation of the MOVECOL command.

Negative Number Invalid

This message is displayed on the BROWSE and EDIT facility screens following entry of a negative number if negative numbers are not permissible.
New Report Not Created

This message is displayed on the report CATALOGUE facility screen following the successful cancellation of the creation of a report.

No Command Selected

This message is displayed on the BROWSE facility screen if the user presses enter while the Command Cell is still on the home position. The situation may be rectified by tabbing the Command Cell to the required command and pressing enter.

No Match Found For Join Number XX

This message is displayed on the COLUMN SPECIFICATIONS facility screen following execution of the SUBMIT command with join number XX only specified on a report column in one of the reports to be joined. The situation may be rectified by entering the join number XX on the data entry line, tabbing the Data Cell to the required report column which is to be joined from the other report, and pressing enter.

No Terminating Quote For Comparison String

This message is displayed on the BROWSE facility screen following execution of the SELECT command with a boolean expression entered containing an unmatched quote. The situation may be rectified by entering a valid boolean expression on the data entry line, and pressing enter.

No Terminating Quote For String

This message is displayed on the BROWSE and EDIT facility screens following execution of the FIND command if the entered search string was not terminated by a quote. The situation may be rectified by re-entering the search string on the data entry line (ensuring that it is enclosed by quotes), and pressing enter.

Number Not In Allowable Range

This message is displayed on the BROWSE and EDIT facility screens following entry of a number which is not between the minimum and maximum value allowable. The situation may be rectified by entering a number within the allowed range on the data entry line, and pressing enter.

Numeric Width Specification Must Be Greater Than 2

This message is displayed on the COLUMN SPECIFICATIONS facility screen following entry of an invalid column width specification. The situation may be rectified by entering a column width specification greater than 2 on the data entry line, and pressing enter.
Numeric Width Specification Must Be Less Than XX

This message is displayed on the COLUMN SPECIFICATIONS facility screen following entry of an invalid column width specification. The situation may be rectified by entering a column width specification less than the value stated in the message on the data entry line, and pressing enter.

Place Data Cell On The Required Field

This message is displayed on the JOIN SPECIFICATIONS facility screen if enter is pressed with the Data Cell on its HOME position. The situation may be rectified by tabbing the Data Cell to one of the report column fields currently displayed on the screen, and pressing enter.

Print Request Cancelled

This message is displayed on the CATALOGUE, BROWSE and EDIT facility screens following the successful cancellation of the print request for a report.

Print Request Submitted

This message is displayed on the CATALOGUE, BROWSE and EDIT facility screens following the successful submission of a report print request.

Project Completed

This message is displayed on the BROWSE facility screen following the successful execution and completion of the PROJECT command.

Rename Specifications Incomplete

This message is displayed on the RENAME utility screen following execution of the UPDATE command without the entry of one of the report names. The situation may be rectified by entering a report name of up to 8 characters on the data entry line, tabbing the Data Cell to the required report name field, and pressing enter.

Report Already Exists

This message is displayed on the EDIT and BROWSE facility screens following entry of a report name which is already in existence. The situation may be rectified by entering a unique report name of up to 8 characters on the data entry line, and pressing enter.
Report Being Projected

This message is displayed on the BROWSE facility screen during execution of the PROJECT command.

Report Being Restored

This message is displayed on the BROWSE facility screen during execution of the RESTORE command.

Report Being Retrieved

This message is displayed on the report CATALOGUE facility screen during retrieval of the selected report from the data base.

Report Being Saved

This message is displayed on the EDIT and BROWSE facility screens during execution of the SAVE command.

Report Being Selected

This message is displayed on the BROWSE facility screen during execution of the SELECT command.

Report Being Sorted

This message is displayed on the EDIT and BROWSE facility screens during execution of the SORT command.

Report Is Currently Being Edited

This message is displayed on the report CATALOGUE facility screen if the user tries to edit a report which is currently being edited by another user.

Report Is Currently In Use

This message is displayed on the DELETE or RENAME report utility screens if the report selected for deletion or renaming is currently being edited or browsed by another user.

Report Name Exceeds 8 Characters

This message is displayed on the CATALOGUE facility, or DESCRIPTION/STATUS, SECURITY, RENAME, COPY, or DELETE report utility screens following entry of a report name exceeding 8 characters in length. The situation may be rectified by entering a report name of up to 8 characters on the data entry line, and pressing enter.
Report Name Invalid

This message is displayed on the EDIT and BROWSE facility screens following entry of a report name which either does not begin with a letter, or contains characters other than letters, numbers, or the national characters @, #, or $. The situation may be rectified by entering a valid report name on the data entry line, and pressing enter.

Report Print Being Created

This message is displayed on the PRINT utility screen following the successful submission of a report print request.

Report Restored

This message is displayed on the BROWSE facility screen following the successful execution of the RESTORE command.

Report Successfully Selected

This message is displayed on the BROWSE facility screen following the successful execution of the SELECT command.

Report XXXXXXXX Deleted

This message is displayed on the DELETE report utility screen following the successful deletion of a report.

Report XXXXXXXX Does Not Exist

This message is displayed on the report SECURITY utility or BROWSE facility screen following entry of a non-existent report name. The situation may be rectified by entering a valid report name on the data entry line, and pressing enter.

Report XXXXXXXX Exists

This message is displayed on the COPY and RENAME report utility screens following entry of a 'new' report name which already exists. The situation may be rectified by entering a unique report name on the data entry line, and pressing enter.

Report XXXXXXXX Not Found

This message is displayed on the CATALOGUE facility, or DESCRIPTION/STATUS, RENAME, COPY, and DELETE report utility screens following entry of a report name which does not exist. The situation may be rectified by entering an existing report name on the data entry line, and pressing enter.

Report XXXXXXXX Saved

This message is displayed on the EDIT and BROWSE facility screens following successful execution of the SAVE command.
Select Column For Join

This message is displayed on the JOIN SPECIFICATIONS facility screen following execution of the SUBMIT command without selection of a column on which the join is to take place. The situation may be rectified by entering a join number on the data entry line, tabbing the Data Cell to the report column which is to be joined, and pressing enter.

Select Desired Function

This message is displayed on the TUTORIAL or UTILITIES option, or the main BURP menu facility screen if the user has pressed enter without selection of a function. The situation may be rectified by tabbing the Data Cell to the required function, and pressing enter.

Select Field

This message is displayed on the report DESCRIPTION/STATUS utility screen if the user presses enter without moving the Data Cell from its HOME position. The situation may be rectified by tabbing the Data Cell to the required field, and pressing enter.

Select Required Field

This message is displayed on the PRINT utility screen following entry of information on the data entry line without the selection of a field to be updated. The situation may be rectified by tabbing the Data Cell to the appropriate field, and pressing enter.

Sort Completed

This message is displayed on the BROWSE and EDIT facility screens following the successful execution and completion of the SORT command.

Sort Terminated Abnormally

This message is displayed on the BROWSE and EDIT facility screens following execution of the SORT command if a bad status is returned from the system.

String XXXXXXXXXX Found

This message is displayed on the EDIT and BROWSE facility screens following execution of the FIND command if the entered search string has been located within the report.
String XXXXXXXX Not Found

This message is displayed on the EDIT and BROWSE facility screens following execution of the FIND command if the entered search string has not been located within the report.

Target Column Width Too Small For Result

This message is displayed on the EDIT facility screen following execution of the MATH command if the result of the mathematical equation exceeds the width of the resultant column specified. The situation may be rectified by re-entering the mathematical equation selecting a larger resultant column, tabbing the Command Cell to the MATH command, and pressing enter.

There Are No Numeric Columns

This message is displayed on the PRINT utility screen following the specification that all report columns are to be totalled, if none of the columns in the report have a column type of numeric.

Tilda Invalid In Data Entered

This message is displayed on the EDIT facility screen following entry of the character tilda on the data entry line. A tilda may not be contained in any data entered.

Too Many Digits After Decimal Point

This message is displayed on the EDIT facility screen following entry of a number containing more digits after the decimal point than the maximum number allowable. The situation may be rectified by entering a number with less digits after the decimal point on the data entry line, and pressing enter.

Too Many Integers Entered

This message is displayed on the EDIT facility screen following entry of a number containing more digits before the decimal point, or the assumed decimal point, than the maximum number allowable. The situation may be rectified by entering a number with less digits before the decimal point on the data entry line, and pressing enter.

Too Many Join Keys: Maximum 9

This message is displayed on the JOIN SPECIFICATIONS facility screen following execution of the SUBMIT command with more join keys specified than allowable. The situation may be rectified by specifying up to 9 join keys, tabbing the Command Cell to the SUBMIT command, and pressing enter.
Too Many Sort Keys: Maximum 9

This message is displayed on the BROWSE and EDIT facility screens following execution of the SORT command with more sort keys specified than allowable. The situation may be rectified by specifying up to 9 sort keys on the data entry line, tabbing the Command Cell to the SORT command, and pressing enter.

Type Specification Update Invalid - Original Column

This message is displayed on the COLUMN SPECIFICATIONS facility screen following execution of the UPDATE command with the type specification for an original column changed. If the report column type specification for an original column is character, this may not be updated to numeric, and vice versa.

Unexpected Data Base Error: XXXX

This message is displayed on the BROWSE or JOIN SPECIFICATIONS facility screen if an unexpected error occurs while trying to access a report in the data base.

Unexpected Status Error

This message is displayed on the report SECURITY utility screen if the display or restoration of the current access permission tags for a report produces a status error.

Update Unsuccessful - Column Specifications Incomplete

This message is displayed on the COLUMN SPECIFICATIONS facility screen following execution of the UPDATE command without entry of the report column type or report column width specification. The situation may be rectified by entering the required specification on the data entry line, tabbing the Data Cell to the appropriate field, and pressing enter.

Update Unsuccessful - Column Specifications Inconsistent

This message is displayed on the COLUMN SPECIFICATIONS facility screen following execution of the UPDATE command and entry of one of the following:
- a numeric report column type and a report column width specification less than the number of decimals required plus three.
- a numeric report column type and a report column width specification greater than the maximum numeric width allowable.
- a character report column type and a decimals specification field which is not blank.

The situation may be rectified by entering the required specification on the data entry line, tabbing the Data Cell to the appropriate field, and pressing enter.
Updating Report Columns

This message is displayed on the COLUMN SPECIFICATIONS facility screen if the report columns are currently being updated.

Width Must Be 3 Greater Than Decimal Specification

This message is displayed on the COLUMN SPECIFICATIONS facility screen following entry of a report column width which does not exceed the decimal specification by at least 3. The situation may be rectified by entering an appropriate column width on the data entry line, and pressing enter.

Width Update Will Exceed Report Width Maximum of XXX

This message is displayed on the COLUMN SPECIFICATIONS facility screen if the requested update of the report column width would cause the report to exceed the maximum width allowable.

XX Columns Copied

This message is displayed on the COLUMN SPECIFICATIONS facility screen following the successful copy of report columns from one position in the report to another.

XX Columns Deleted

This message is displayed on the COLUMN SPECIFICATIONS facility screen following the successful deletion of report columns.

XX Columns Inserted

This message is displayed on the COLUMN SPECIFICATIONS facility screen following the successful insertion of report columns.

XX Columns Moved

This message is displayed on the COLUMN SPECIFICATIONS facility screen following the successful move of report columns from one position in the report to another.

XXX Is Not A Numeric Constant

This message is displayed on the EDIT facility screen following execution of the MATH command if a constant specified in the mathematical equation is not numeric. The situation may be rectified by re-entering the mathematical equation on the data entry line ensuring that all constants are numeric, and pressing enter.
XXX Is Not A Valid Column Boundary

This message is displayed on the BROWSE and EDIT facility screen following execution of the FIND command with a column boundary which is not numeric. The situation may be rectified by entering a valid search string containing numeric column boundaries on the data entry line, and pressing enter.

XXXXXXX And YYYY YYYY Joined

This message is displayed on the JOIN SPECIFICATIONS facility screen following the successful join of the two reports XXXXXXXX, and YYYY YYYY.

XXXXXXX And YYYY YYYY Joined, Report Truncated

This message is displayed on the JOIN SPECIFICATIONS facility screen following the successful join of the two reports XXXXXXXX, and YYYY YYYY, where the resultant report has been truncated.

XXXXXXX Copied To YYYY YYYY

This message is displayed on the COPY report utility screen following the successful copy of report XXXXXXXX to report YYYY YYYY.

XXXXXXX Renamed To YYYY YYYY

This message is displayed on the RENAME report utility screen following the successful rename of report XXXXXXXX to YYYY YYYY.

Zero Divide - Intermediate Result Set To Zero

This message is displayed on the EDIT facility screen following execution of the MATH command if the mathematical equation produced a denominator of zero.

Zero Not Permissible

This message is displayed on the EDIT or COLUMN SPECIFICATION facility screens following entry of the value zero if zero's are not allowable. The situation may be rectified by entering a number other than zero on the data entry line, tabbing the Data Cell to the required field, and pressing enter.
HOW-TO MANUAL
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INTRODUCTION

Welcome to the BURP How-To Manual. This manual explains how to use BURP to produce and process reports.

The How-To Manual is not intended to be used alone, but in conjunction with the other BURP manuals. For example, complete details of all commands are not presented in this manual. Instead, you are referred to the Reference Manual, which contains complete details and many examples.

To get started with using BURP, read this manual carefully. This manual explains basic BURP concepts and guides you through some prerequisite procedures.

As you work with BURP, help is not far away. BURP has an on-line HELP FACILITY that is context sensitive; the screen of help text that appears when you execute the HELP command is tailored to the work you are currently doing.
BASIC CONCEPTS

GENERAL DESCRIPTION

A report can be viewed as a series of horizontal lines of data formatted into variable width vertical columns (fields), with each line consisting of a set of related data. Reports may be considered as being independent or relational with respect to each other.

The BUSINESS REPORT PROCESSOR - BURP - is a fourth generation language which provides a range of functions which allow flexibility of movement within a report and the total report library, and provides a variety of display, editing, sorting and searching options, and certain mathematical operations on report items.

BURP is designed to be run on the UNIX Operating System and is connected to by executing the command ‘BURP’ from the /u/p/321/g5/devt directory.
REPORT CONCEPTS

Report Definition

A report can be viewed as a series of horizontal lines of data formatted into variable width, vertical columns (fields), with each horizontal line consisting of a set of related data.

Report Name

The name of a report is unique and can be a maximum of 8 characters. It must start with an alphabetic character and can contain alphanumeric and national (@#$) characters.

Report Specification Restrictions

The report can be a maximum of 126 characters wide and the length of the report is restricted to the limit of the hardware/software environment.

A report can contain a maximum of 63 columns. Each column is separated by a blank character, which is included in the width of the report. There are two types of columns - character and numeric. Only the numeric column is restricted to a width of 16 characters for mathematical calculation purposes.

Column specifications for a report are not fixed upon its creation.

Report Storage

The report data is stored in a flat file and the report specifications are stored on a database.

Report Security

Each report has its own access permission tags which specify the accessing permissions of users for that report. A report has permission tags for the owner of the report (the person who created the report), the group which the owner belongs to, and for all users of BURP. For each of these, the owner of the report can set up the permission tags in the Report Security Utility to READ and/or WRITE access. Read access gives only browse, print and copy access to a report, whereas write access gives you browse, edit, print, copy, rename, delete and update access to a report.
BURP SCREEN CONCEPTS

Command Line

The Command Line is the first line of every screen. It displays the name of the current facility, followed by the commands available in that facility. (see Figure 2.1)

Figure 2.1 Browse Facility Command Line

Command Cell

The Command Cell is an inverse-video portion that is used to indicate the command to be executed.

The Command Cell is always visible on the screen and the 'HOME' position of the Command Cell is the facility name in the top left-hand corner of the screen.

A command is selected by moving the Command Cell across the Command Line to the required command. The Command Cell is moved by using the 'TAB' key to move it forwards across the Command Line and by using the 'ESCAPE' key to move it backwards.

A command is executed by moving the Command Cell to the required command and pressing the 'ENTER' key.

Data Cell

The Data Cell is an inverse-video portion that is used to select a menu option or to indicate a field to update.

The Data Cell is always visible on the screen and the 'HOME' position of the Data Cell is the facility name in the top left-hand corner of the screen.

The Data Cell is moved by using the arrow keys: down arrow to move down the screen, up arrow to move up the screen, left arrow to move left across the screen and right arrow to move right across the screen.

eg. A menu option is selected by moving the Data Cell to the required option and pressing the 'ENTER' key.

eg. A field to be updated is indicated by moving the Data Cell to the required field and pressing the 'ENTER' key.

NOTE: To select a menu option or to indicate a field to update, the Command Cell must be at its 'HOME' position.
Data Entry Line

The Data Entry Line is the second line of each screen which involves data entry. The Data Entry Line is to the right of the ‘===>’ symbol. This symbol only appears when there is a Data Entry Line for that particular screen, otherwise the second line of the screen is blank.

On some screens, the Data Entry Line is preceded by the current report name enclosed in brackets. (see Figure 2.2)

Figure 2.2 Browse Facility Command Line and Data Entry Line

The Data Entry Line is used to enter data for updating fields or to enter information for the execution of commands. The Cursor is used on the Data Entry Line and it may be moved along the Data Entry Line by using the ‘CLEAR’ key to move it forwards and the ‘HOME’ key to move it backwards.

Message Line

The Message Line is the third line of every screen. It is used to display informatory messages. (see Figure 2.3)

Figure 2.3 Browse Facility Command Line and Data Entry Line and Message Line, displaying a message.

Report Display

A report may be displayed in the Browse or Edit Facilities. The report is displayed as follows: (see Figure 2.4)

Report Name - the name of the report currently being browsed or edited. It is displayed on the second line of the screen, enclosed within brackets.

Report Heading - the heading of the report is displayed on the fourth line of the screen.

Report Column Headings - the headings for each column of report data are bounded by the width of the column and are displayed on the fifth and sixth lines of the screen.

Column Number Line - the column numbers for each column are displayed on the seventh line of the screen.

Report Data Section - the report data is displayed on the remaining section of the screen (excluding the very last line).
A report may be a maximum of 126 characters wide. The screen can only display 80 characters at the one time. Also, a report may be longer than the 16 lines of report data that can be displayed at the one time. So, scrolling options are provided to scroll the report display horizontally and vertically.

( refer following section - Scrolling Options )

The Report Heading, Report Column Headings and the Column Number Line are only scrolled horizontally so that they are always displayed on the screen. Whereas, the Report Data Section may be scrolled horizontally ( with the headings ) or vertically.

**Scrolling Options**

The display of data may be scrolled using the Scrolling Options provided for that particular screen. The Scrolling Options available for a particular screen are displayed on the bottom line of the screen. ( see Figure 2.5 ) They are:

- CNTL-L : will scroll to the left-most data
- CNTL-R : will scroll to the right-most data
- CNTL-P : will scroll to the prev page of data
- CNTL-N : will scroll to the next page of data

Data may be scrolled vertically a certain number of lines or horizontally a certain number of characters by entering the number on the Data Entry Line and executing the Scroll Option. Scrolling of a report is confined to the report boundaries, ie. a horizontal scroll request will scroll to the furthest edge of the report data; this edge is dependent on the total report width.

**Figure 2.5  Browse Facility Scrolling Options**

| 18208973 FISHER EDDIE       | PASS |
| 18210065 FRANKLIN ROSS MICHAEL | CREDIT |
| CNTL-L : LEFT          CNTL-R : RIGHT | CNTL-P : PREV  CNTL-N : NEXT |
Entering Data

Data may be entered into a field by moving the Data Cell to the field to be updated, entering the required data on the Data Entry Line and pressing the 'ENTER' key. (see Figure 2.6)

The Data Entry Line will be cleared and the data will appear in the field indicated by the Data Cell. However, if the data entered on the Data Entry Line is invalid in some way, it will not be moved to the field, it will remain on the Data Entry Line and an error message will be displayed explaining why the data is invalid.

Figure 2.6 Edit Facility - 'STUDENT' report.

Step one, enter data and position the Data Cell.

<table>
<thead>
<tr>
<th>STUDENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>NUMBER</td>
</tr>
<tr>
<td>STUDENT NAME</td>
</tr>
<tr>
<td>RESULT</td>
</tr>
<tr>
<td>---------</td>
</tr>
<tr>
<td>18200356</td>
</tr>
<tr>
<td>ANDREWS RAYMOND GREG PASS</td>
</tr>
<tr>
<td>18203671</td>
</tr>
<tr>
<td>ATKINSON BRUCE ROBERT CREDIT</td>
</tr>
<tr>
<td>18212985</td>
</tr>
<tr>
<td>BAILEY GEOFF THOMAS</td>
</tr>
<tr>
<td>18200506</td>
</tr>
<tr>
<td>BAKER JOHN DAVID</td>
</tr>
</tbody>
</table>

Step two, after pressing 'ENTER', the field is updated.

<table>
<thead>
<tr>
<th>STUDENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>NUMBER</td>
</tr>
<tr>
<td>STUDENT NAME</td>
</tr>
<tr>
<td>RESULT</td>
</tr>
<tr>
<td>---------</td>
</tr>
<tr>
<td>18200356</td>
</tr>
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</tr>
<tr>
<td>18203671</td>
</tr>
<tr>
<td>ATKINSON BRUCE ROBERT CREDIT</td>
</tr>
<tr>
<td>18212985</td>
</tr>
<tr>
<td>BAILEY GEOFF THOMAS H DIST</td>
</tr>
<tr>
<td>18200506</td>
</tr>
<tr>
<td>BAKER JOHN DAVID</td>
</tr>
</tbody>
</table>

To do a simple change of a field, such a mistyped character, redisplay the incorrect field on the Data Entry Line. A field can be redisplayed by moving the Data Cell to that field and using CNTL-D. Now, move the cursor to the mistyped character and change it, using the 'CLEAR' and 'HOME' keys to move the cursor. Then press 'ENTER' to update the field. If this redisplaying option is available, then CNTL-D will be displayed on the bottom line of the screen, with the scrolling options.
BURP FACILITIES AND UTILITIES

Main Menu Facility

The Main Menu Facility is the facility you connect to when you start your BURP session. You can choose one of the facilities displayed on the screen:

- Browse Facility - to browse a report
- Edit Facility - to edit a report
- Utilities Facility - to perform utility functions
- Tutorial Facility - to display BURP tutorial information
- Exit Facility - to end a BURP session

Report Catalogue Facility

The Report Catalogue Facility displays the existing reports in BURP, in alphabetical order. The catalogue of reports is displayed for the selection of a report to either browse, edit or print.

The following information is displayed for each report:

- Report Name: the unique name of a report
- Report Description: a short text to describe the report, maintained in the Description(Status) Utility and defaults to the Report Name. (refer to the Description(Status) Utility section in this chapter.)
- Report Status: indicates if the report has a temporary or permanent status, maintained in the Description Status Utility and defaults to temporary. (refer to the Description(Status) Utility section in this chapter)
- Last Access Date: date the report was last browsed or edited.
- Last Update Date: date the report was last edited.

Browse Facility

The Browse Facility displays the report selected from the Report Catalogue Facility.

You may browse a report which is currently being edited or browsed by someone else using BURP.

You must have at least READ access to a report to be allowed to browse it. (Report access is explained in a previous section of 'THE REPORT' and in the BURP Reference Manual.)

The Browse Facility allows you to browse the report data with the option to create a new report. A new report may be created by using the relational commands provided in this facility to project, select, join and sort the report being browsed. Also, the altered version of the report may just be printed, without actually saving the report.
Edit Facility

The Edit Facility displays the existing report selected from the Report Catalogue Facility or the new report specified in the Report Catalogue Facility.

You may edit a report which is currently being browsed but not currently being edited by someone else using BURP.

You must have WRITE access to a report to be allowed to edit it. (Report access is explained in a previous section of 'THE REPORT' and in the BURP Reference Manual.)

The Edit Facility allows you to update the report heading, the column headings, the column specifications, and the report data.

Column Specifications Facility

The Column Specifications Facility displays the column specifications of the report being created or updated in the current Edit session.

When a new report is specified for creation in the Report Catalogue Facility, you will be required to specify the report's column specifications before you will be displayed the report in the Edit Facility for creating.

The column specifications of a report may be changed after it is created. You may insert, delete, move and copy columns of report data. The column width and number of decimals can also be changed. Only the type of an existing column may not be altered.

Utilities Facility

The Utilities Facility is a menu facility which displays the report utilities available for selection:

Print Report - to print a report
Copy Report - to copy a report
Rename Report - to rename a report
Delete Report - to delete a report
Report Description/Status - update report description/status
Report Security - to update report security

Print Report Utility

The Print Report Utility displays the print specifications required to obtain a hard copy of a report. The report to be printed is selected from the Report Catalogue Facility which is displayed when the Print Report Utility is selected from the Utilities Facility.

Print specifications include the number of copies required, centreing of headings and totalling of numeric columns.

Copy Report Utility

The Copy Report Utility provides the facility to create a copy of an existing report.
Rename Report Utility
The Rename Report Utility provides the facility to rename an existing report.

Delete Report Utility
The Delete Report Utility provides the facility to delete an existing report.

Report Description/Status Utility
The Report Description/Status Utility provides the facility to update the report description and the report status of an existing report.

Report Security Utility
The Report Security Utility provides the facility to update the report access permissions.

Tutorial Facility
The Tutorial Facility provides on-line information regarding the available facilities of BURP, the general operations of BURP, the commands and their execution procedures. At all times, the HELP command is available. Execution of the Help command will temporarily display a relevant section of the Tutorial Facility.
After reading the displayed 'help' information, you can return to the screen where you executed the HELP command from, by executing the END command.
HOW TO CREATE A REPORT

USING EDIT FACILITY

A new report can be created in the BURP Edit Facility by following these steps:

Selecting The Edit Facility

Select the Edit Facility option from the BURP Main Menu Screen. (see Figure 3.1) The Report Catalogue Facility will be displayed to specify the report to be edited.

Figure 3.1 BURP Main Menu Screen - Data Cell indicating the Edit Facility option.

BROWSE - Display report data.
EDIT - Create or update report data.
UTILITIES - Perform utility functions.
TUTORIAL - Display information about BURP.
EXIT - Terminate BURP session.

For HELP: press 'TAB' key once, then press 'ENTER'
Specifying The New Report Name

To specify a new report, enter the name of the new report on the Data Entry Line of the Report Catalogue Screen and press the 'ENTER' key. (see Figure 3.2)

The new report name must be unique, a maximum of 8 characters, start with an alphabetic character and contain alphanumeric and/or national (@ # $ ) characters.

If the new report name is valid, the Column Specifications Screen will be displayed for the specification of the report's columns.

Figure 3.2 Report Catalogue Screen - specifying the creation of the new report "CSCI211".

Entering Column Specifications

The column specifications for the new report must be defined before you can enter the actual report data. For each column, the following details must be entered:

Type - There are two types of columns; character (C) and numeric (N). Columns should be specified as character unless they are to contain numbers for mathematical purposes.
**Width** - A character column must be at least one character wide. A numeric column width must include an extra character for a sign, thus it must be at least two characters wide. If the numeric column is to have decimals, then the width must also include characters for at least one number before the decimal point and the decimal point itself. The maximum width of a numeric column is 16, to preserve precision in mathematical calculations.

Number Decimals - number of decimals are only entered for a numeric column to specify the number of integers after the decimal point.

The total width of the report is restricted to 126 characters. The width of a report includes the width of each column and a blank character between each column. The report width restriction will restrict the insertion of columns and the specification of column widths. The total number of columns possible is 63. These would have to all be character type columns, one character wide. Also, there must be at least one column in a report. When you begin to enter your column specifications, a new first column will be automatically created. This first column will also be created if you attempt to delete all the columns of a report. (see Figure 3.3)

**Figure 3.3** Column Specifications Screen - the initial screen with the first column already created for CSCI211

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Columns can be inserted, deleted, moved and copied by executing the following commands:

**ISRTCOL** - to insert new column(s) - by indicating the column prior to where the column(s) are to be inserted with the Data Cell, entering the number of columns to be inserted on the Data Entry Line and executing the ISRTCOL command. The default is to insert one column.

**DLETCOL** - to delete column(s) - by indicating the column or the first column of a block to be deleted with the Data Cell, entering the number of columns to be deleted on the Data Entry Line and executing the DLETCOL command. The default is to delete one column.

**MOVECOL** - to move column(s) in two steps - firstly by indicating the column or the first column of a block to be moved with the Data Cell, entering the number of columns to be moved on the Data Entry Line and executing the MOVECOL command. Secondly by indicating the column prior to where the column(s) are to be moved and executing the MOVECOL command again. To complete the second step, DO NOT move the Command Cell off the MOVECOL command, otherwise the command will be automatically cancelled.

**COPYCOL** - to copy column(s) in two steps - this command is executed in the same way as the MOVECOL command.

While entering the column specifications, the column numbers are automatically created and displayed on the screen. Also, when you enter the width of the column, the start and finish positions of the columns within the report are calculated and displayed; the last finish position being the current report width.

Figure 3.4 Column Specifications Screen - the columns for the students assignment and examination results in CSCI211 course have been entered.
The column headings of existing columns would be displayed to aid the updating of columns. When a new report is created, they are blank and are entered in the Edit Facility along with the report data.

When you have finished entering the column specifications, you execute the UPDATE command to create the report columns. (see Figure 3.4) After successfully creating the columns, the Edit Facility screen is displayed for the entry of report data.

To cancel the creation of a report, you can execute the CANCEL command and be returned to the Report Catalogue Screen.

Entering Report Data

The report data is entered in the Edit Facility as described previously in the BASIC CONCEPTS Section.

The report heading and column headings may now be entered. The report heading may be as long as the maximum report width of 126 characters and the column headings are bounded by the width of their respective columns. Even though the Data Entry Line is only 64 characters long in the Edit Facility, you may enter a heading longer than the Data Entry Line. Just continue typing and the heading will be scrolled to the left, character by character. The cursor may be moved forwards and backwards along the Data Entry Line to redisplay the heading to check it before you enter it into the report. Also, to have leading blanks in your heading, enter a " to begin your heading so that the leading blank characters are not removed. (see Figure 3.5)

A new report has no lines. To start entering data into the columns you must first insert a blank line or lines into the report. There are four commands to manipulate lines of report data - discussed in greater detail in the Reference Manual. They are on the secondary command line of the Edit Screen. This secondary command line can be displayed by executing the LINE command. The secondary command line has a RETURN command to redisplay the original command line. The four line commands are:

INSERT - to insert blank line(s) - by indicating the line prior to the line to be inserted, entering the number of lines to be inserted on the Data Entry Line, and executing the INSERT command. The default is to insert one line.

DELETE - to delete line(s) - by indicating the line or the first line of a block of lines with the Data Cell, entering the number of lines to be deleted on the Data Entry Line and executing the DELETE command. The default is to delete one line.

MOVE - to move line(s) in two steps - firstly by indicating the line or the first line of a block of lines to be moved with the Data Cell, entering the number of lines to be moved on the Data Entry Line and executing the MOVE command. Secondly, by indicating the line prior to where the line(s) are to be moved, and executing the MOVE command again. To complete the second step, DO NOT move the command cell off the MOVE command, or the command will be automatically cancelled.

COPY - to copy line(s) in two steps - this command is executed in the same way as the MOVE command.
Figure 3.5  Edit Facility - 'CSCI211' report.
Steps to enter a report heading with leading blanks
and longer than the data entry line.

First 64 characters entered for the report heading, with leading
blanks indicated by the '~'.

EDIT : MENU END  COLUMN LINE FIND RFIND SORT MATH  PRINT SAVE CANCEL HELP
(CSCI211 ) ===> " CSCI 211 - STUDENT ASSIGNMENT AND EXAMINATION RESULTS - 1986
=================================================================================
  1-------1------------------------------2--3--4--5--6--7--8--9--10-----11---------1
=================================================================================

The report heading is now entered, and the first 3 characters have
been scrolled off the left end of the Data Entry Line.

EDIT : MENU END  COLUMN LINE FIND RFIND SORT MATH  PRINT SAVE CANCEL HELP
(CSCI211 ) ===> " CSCI 211 - STUDENT ASSIGNMENT AND EXAMINATION RESULTS - 1986
=================================================================================
  1-------1------------------------------2--3--4--5--6--7--8--9--10-----11---------1
=================================================================================

The heading is entered and is displayed in full on the Report
Heading Line.

EDIT : MENU END  COLUMN LINE FIND RFIND SORT MATH  PRINT SAVE CANCEL HELP
(CSCI211 ) ===> " CSCI 211 - STUDENT ASSIGNMENT AND EXAMINATION RESULTS - 1986
=================================================================================
  1-------1------------------------------2--3--4--5--6--7--8--9--10-----11---------1
=================================================================================

All the Column Headings have been entered for the student number
and name, five assignments worth 10 marks each, a mid session
exam worth 20 marks, a final exam worth 40 marks, a final mark
out of 100 and the grade.

EDIT : MENU END  COLUMN LINE FIND RFIND SORT MATH  PRINT SAVE CANCEL HELP
(CSCI211 ) ===> " CSCI 211 - STUDENT ASSIGNMENT AND EXAMINATION RESULTS - 1986
=================================================================================
  1-------1------------------------------2--3--4--5--6--7--8--9--10-----11---------1
=================================================================================

STUDENT NUMBER STUDENT NAME 10 10 10 10 10 20 40 100 GRADE
Once you have inserted blank lines, you may enter data into the columns. The data to be entered into a column is checked against the column specifications for that column.

If the column specifications were not adequate, you can execute the COLUMN command to return to the Column Specifications screen, to update the column specifications. The only restriction which will now apply is that you cannot change the type of an existing column. You will still be able to insert, delete, move and copy columns and change their widths and number decimals.

WARNING: Any change in the width or number of decimals for a column will result in either truncation or padding of report data in that column.

There are other commands available to aid the creation of a report. They are mentioned here; a more detailed description of these commands may be found in the Reference Manual.

FIND and RFIND - to search for a character string - by entering the string on the data entry line, and executing the FIND command. To continue searching for this string, you can then repeatedly execute the RFIND command. The occurrence of a string will be indicated with the Data Cell.

SORT - to sort report data, by columns into ascending or descending order - by entering the column numbers on the Data Entry Line and executing the SORT command. Columns are sorted into ascending order unless a 'd' follows the column number to request descending order.

MATH - to apply an arithmetical formula to numeric columns of data, to either update an existing column or to generate data for a new column. The new column must be created prior to the application of the arithmetic formula.

Saving The New Report

Once the entry of report data is completed, the report can be saved and created by executing one of three commands:

SAVE - the new report will be created and you will remain in the Edit Facility.

END - the new report will be created and you will be returned to the Report Catalogue Screen.

MENU - the new report will be created and you will be returned to the BURP Main Menu Screen.

The new report will be created with a temporary status and a report description containing the report name. These may be changed in the Report Description/Status Utility (see Section 9 of this manual). The access permissions will be created as follows: you will have READ and WRITE access, and so will your group, however, other users of BURP will have only READ access. These may be changed in the Report Security Utility (see Section 10 of this manual).

 Cancelling The New Report

Execution of the CANCEL command will allow you to end the Edit session without creating the report, provided you have not previously executed the SAVE command. You will be returned to the Report Catalogue Screen.
USING BROWSE FACILITY

A new report can be created in the BURP Browse Facility, from existing reports, by following these steps:

Selecting The Browse Facility

Select the Browse Facility option from the BURP Main Menu Screen. The Report Catalogue Facility will be displayed to select the report to be browsed and used to create the new report.

Selecting The Report To Browse

To select the report, either enter the name of the report on the Data Entry Line of the Report Catalogue Screen and press the 'ENTER' key or indicate the report with the Data Cell and press the 'ENTER' key. If the report you wish to indicate is not currently displayed on the screen, you can use the scrolling options to scroll the catalogue of reports or you can use the LOCATE command to automatically scroll the catalogue to that report. To locate the report entry, enter the report name on the Data Entry Line and execute the LOCATE command.

After successfully selecting an existing report, the Browse Facility Screen will be displayed for the creation of the new report by using the relational commands available.

Creating The New Report Using Relational Commands

The Browse Facility provides relational type commands to change the content of the existing report. The commands available are:

PROJECT - to project columns of the report, i.e. to suppress the display of selected columns and to rearrange the order of the display of selected columns - by entering the column numbers of the columns to be projected on the Data Entry Line, and executing the PROJECT command. The unsuppressed columns are renumbered.

SELECT - to apply boolean expressions to columns of data to suppress the display of lines of data that do not satisfy the boolean expression being applied - by entering the boolean expression on the Data Entry Line and executing the SELECT command. The boolean expression involves combinations of constant factors, column numbers, preceded with a 'c' to distinguish them from the constant factors, and the following boolean operators:

- equal to
- less than
- not equal to
- less than or equal to
- greater than
- greater than or equal to
- and (join operator)
JOIN - to join another report to the report being browsed - by entering the report name of the report to be joined on the Data Entry Line and executing the JOIN command to be returned the Join Specifications Screen for the specification of the report columns on which the reports are to be joined. After specifying the columns, you execute the UPDATE command to perform the join, or you execute the CANCEL command to cancel the joining of the two reports: you will be returned to the Browse Facility Screen.

SORT - to resequence the lines of data in the report, into ascending or descending order - by entering the column numbers on the Data Entry Line and executing the SORT command. Columns are sorted into ascending order unless a 'd' follows the column number to request descending order.

After applying these commands to modify the display of report data, you can redisplay the original report data by executing the RESTORE command.

Saving The New Report

After you have completed modifying the existing report, you can save the modified report in a new report, by entering the name of the new report on the Data Entry Line and executing the SAVE command.
USING COPY UTILITY

A new report can be created in the BURP Copy Utility, by following these steps:

Selecting The Utilities Facility

Select the Utilities Facility from the BURP Main Menu Screen. The Utilities Menu Screen will be displayed.

Selecting The Copy Report Utility

Select the Copy Report Utility from the Utilities Menu Screen. The Copy Report Utility Screen will be returned for the specification of the report to be copied and the report to be created.

Specifying The Copying Of A Report

The specifications for copying reports are discussed in this manual in the HOW TO COPY A REPORT Section.
HOW TO UPDATE A REPORT

An existing report can be updated in the BURP Edit Facility by following these steps:

Selecting The Edit Facility

Select the Edit Facility option from the BURP Main Menu Screen. The Report Catalogue Facility will be displayed to select the report to be edited.

Selecting The Report To Edit

To select the report, either enter the name of the report on the Data Entry Line of the Report Catalogue Screen and press the ‘ENTER’ key or indicate the report with the Data Cell and press the ‘ENTER’ key. If the report you wish to indicate is not currently displayed on the screen, you can use the scrolling options to scroll the catalogue of reports or you can use the LOCATE command to automatically scroll the catalogue to that report. To locate the report entry, enter the report name on the Data Entry Line and execute the LOCATE command.

After successfully selecting an existing report, the Edit Facility Screen will be displayed for the modification of the existing report.

Updating Report Data

The report data is updated in the Edit Facility as described previously in the BASIC CONCEPTS Section and in the HOW TO CREATE A REPORT, Entering Report Data Using The Edit Facility Section.

The report heading and column headings may be updated, the column specifications may be updated and the report data may be updated.

Saving The Updated Report

Once the updating of report data is completed, the report can be saved into the current report or into a new report. One of the following commands can be used to save the updated report:

SAVE - the updated report may be saved in the current report or into the new report name specified on the Data Entry Line, by executing this command. You will remain in the Edit Facility.
END - the updated report will be saved into the current report and you will be returned to the Report Catalogue Screen.
MENU - the updated report will be saved into the current report and you will be returned to the BURP Main Menu Screen.
Cancelling The Report Changes

Execution of the CANCEL command will allow you to end the Edit session without saving the changes made to the report (since the last execution of the SAVE command). You will be returned to the Report Catalogue Screen.
HOW TO PRINT A REPORT

USING PRINT UTILITY

A report can be printed from the BURP Print Utility by following these steps:

Selecting The Utilities Facility

Select the Utilities Facility from the BURP Main Menu Screen. The Utilities Menu Screen will be displayed.

Selecting The Print Utility

Select the Print Utility from the Utilities Menu Screen. The Report Catalogue Screen will be displayed to select the report to be printed.

Selecting The Report To Print

To select the report, either enter the name of the report on the Data Entry Line of the Report Catalogue Screen and press the 'ENTER' key or indicate the report with the Data Cell and press the 'ENTER' key. If the report you wish to indicate is not currently displayed on the screen, you can use the scrolling options to scroll the catalogue of reports or you can use the LOCATE command to automatically scroll the catalogue to that report. To locate the report entry, enter the report name on the Data Entry Line and execute the LOCATE command.

After successfully selecting an existing report, the Print Specifications Screen will be displayed for the entry the necessary information to print the report.

Entering The Print Specifications

The following print specifications are required to be entered:

- Copies - the number of copies of the report to be printed. The default is one.
- Centre Heading - indicate if the report heading is to be centred with respect to the report data. The default is 'Y', to centre the heading.
- Centre Report - indicate if the report data is to be centred on the page. Default is 'Y', to centre the report data.
Total Columns – the numeric columns of the report to be totalled are specified by entering the column numbers or by entering 'all' if all the numeric columns are to be totalled. The report heading, column headings and column numbers are displayed at the bottom of the screen to aid the specification of the column numbers to be totalled. This display of the report headings and column numbers may be scrolled horizontally using the scrolling options.

Print Totals Only – indicate if only the totals of the columns specified in the 'TOTAL COLUMNS' field are to be printed without the report data. Defaults to 'N', to print the totals with the report data.

Submitting The Print Request

After entering the print specifications, the report can be printed by executing the SUBMIT command. You will be returned to the Report Catalogue Screen, so you can either select another report to print or leave the Print Utility.

Cancelling The Print Request

Execution of the CANCEL command will return you to the Report Catalogue Screen without printing the report.

FROM EDIT FACILITY

A report can be printed from the Edit Facility by executing the PRINT command. Execution of the PRINT command will display you the Print Specifications Screen for the entry of necessary information for the printing of the report. (see previous Section on Using The Print Utility)

The current version of the report will be printed, i.e. you do not need to save any modifications to the report to have them printed.

FROM BROWSE FACILITY

A report can be printed from the Browse Facility by executing the PRINT command. Execution of the PRINT command will display you the Print Specifications Screen for the entry of necessary information for the printing of the report. (see previous Section on Using The Print Utility)

The current version of the report will be printed, i.e. you do not need to save any modifications to the report to have them printed.
HOW TO COPY A REPORT

USING THE BURP - COPY REPORT UTILITY

The Copy Report Utility provides the facility to create a copy of an existing report.

A report is copied by entering the name of the report you wish to copy (i.e. the Original report), into the "COPY FROM REPORT" field, entering the name of the new report into the "COPY TO REPORT" field and executing the UPDATE command. A message is displayed to indicate if the report has been copied. The new report will have the default report security access# assigned to it.

To exit from the Copy Report Utility simply execute the MENU or END commands. Remember, the report is not copied until the UPDATE command has been performed. If you exit from the Copy Report Utility before executing the UPDATE command then the report will not be copied.

Limitations

* The FROM or Original report must already exist and you must have at least READ access# to that report.
* The TO report must be the name of a non-existing report.

Figure 6.1 Copy Utility Screen

# Refer to "The Report", in "BASIC CONCEPTS" section for an explanation of report access modes.
HOW TO RENAME
A REPORT

USING THE BURP - RENAME REPORT UTILITY

The Rename Report Utility provides the facility to change the name of an existing report.

A report is renamed by entering the name of the Original report into the "REPORT NAME" field, entering the new name of the report into the "NEW REPORT NAME" field and then executing the UPDATE command. A message is then displayed, informing you that the report has been renamed. The report will retain the same report security access as it had before it was renamed.

To exit from the Rename Report Utility simply execute the MENU or END commands. Remember, the report will not be renamed until the UPDATE command has been performed. If you exit from the Rename Report Utility before executing the UPDATE command the report name will remain unchanged.

Limitations

* You must have at least WRITE access to the report you are about to rename.
* The report may not be currently being edited or browsed.
* No report must currently exist under the new name.

Figure 7.1 Rename Utility Screen

```
<table>
<thead>
<tr>
<th>RENAME UTILITY</th>
<th>MENU END UPDATE</th>
</tr>
</thead>
</table>
| ====>           | HELPI
| ===============================|
| REPORT NAME      | ====>          |
| NEW REPORT NAME  | ====>          |
```

* Refer to "The Report", in "BASIC CONCEPTS" section for an explanation of report access modes.
HOW TO DELETE A REPORT

USING THE BURP - DELETE REPORT UTILITY

The Delete Report Utility provides the facility to delete an existing report.

A report is deleted by entering the name of the report you wish to delete into the "REPORT NAME" field and executing the UPDATE command. A message is then displayed, informing you that the report has been deleted.

To exit from the Delete Report Utility simply execute the MENU or END commands. Remember, a report is not deleted until the UPDATE command has been performed. If you exit from the Delete Report Utility before executing the UPDATE command then the report will remain.

Limitations

* You must have at least WRITE access to the report you are about to delete.
* The report may not be currently being edited or browsed.

Figure 8.1 Delete Utility Screen

# Refer to "The Report", in "BASIC CONCEPTS" section for an explanation of report access modes.
HOW TO CHANGE THE DESCRIPTION OF A REPORT

USING THE BURP - REPORT DESCRIPTION/STATUS UTILITY

To update a report's description the Report Description/Status Utility is used.

The report description is a free format text field which describes the report. By entering a report name into the "REPORT NAME" field on the screen, the current description and status for the report will be displayed. Updating the description is achieved by entering a new description into the "REPORT DESCRIPTION" field and executing the UPDATE command. The default description, upon creation, is the report name.

After entering the new description and prior to executing the UPDATE command, the original description may be redisplayed by executing the RESTORE command. A message will be displayed to indicate the result of any command executed.

To exit from the Report Description/Status Utility simply execute the MENU or END commands. Remember, the report description will not be updated until the UPDATE command has been performed. If you exit from the Report Description/Status Utility before executing the UPDATE command then the report description will not be changed.

Limitations

* You must have at least WRITE access# to the report.

Figure 9.1 Report Description/Status Utility

# Refer to "The Report", in "BASIC CONCEPTS" section for an explanation of report access modes.
HOW TO CHANGE THE STATUS OF A REPORT

USING THE BURP - REPORT DESCRIPTION/STATUS UTILITY

To update a report's status the Report Description/Status Utility is used.

A report's status is either TEMPORARY or PERMANTENT. A permanent report will not be deleted by the 'Clean-Up' job#. A temporary report may be deleted by the 'Clean-Up' job if the last access date of the report is more than 30 days ago. By entering a report name into the "REPORT NAME" field on the screen, the current description and status for that report will be displayed. Updating the status is achieved by entering a 'I' or 'P' (for temporary or permanent respectively or alternatively entering "Temporary" or "Permanent" into the "REPORT STATUS" field and executing the UPDATE command. Refer to Figure 9.1 for an image of the screen. The default status, upon creation, is temporary.

After entering the new status and prior to executing the UPDATE command, the original report status may be redisplayed by executing the RESTORE command. A message will be displayed to indicate the result of any command executed.

To exit from the Report Description/Status Utility simply execute the MENU or END commands. Remember, the report status will not be updated until the UPDATE command has been performed. If you exit from the Report Description/Status Utility before executing the UPDATE command then the report status will not be changed.

Limitations

* You must have at least WRITE access## to the report.

## Refer to "The Report", in "BASIC CONCEPTS" section for an explanation of report access modes.
# Refer to the Technical Report for a full description of the 'Clean-Up' job.
HOW TO CHANGE THE SECURITY OF A REPORT

USING THE BURP - REPORT SECURITY UTILITY

To update a report's security statuses the Report Security Utility is used.

By entering a report name into the "REPORT NAME" field on the screen, the current report security information is displayed along with your current group id. The section, "The Report" in "BASIC CONCEPTS" has a full description of report security modes and their meanings. Updating of the access modes is performed by entering a 'Y', to allow a particular access or a 'N' or '-' to deny a particular access and then executing the UPDATE command.

After entering the new permission tags and prior to executing the UPDATE command, the original access permission tags may be redisplayed by executing the RESTORE command. A message will be displayed to indicate the result of any command executed.

To exit from the Report Security Utility simply execute the MENU or END commands. Remember, the report statuses will not be updated until the UPDATE command has been performed. If you exit from the Report Security Utility before executing the UPDATE command then the report statuses will not be updated.

Limitations

* Only the OWNER of the report may change the access permission tags.

Figure 11.1 Report Security Utility

<table>
<thead>
<tr>
<th>SECURITY UTILITY</th>
<th>MENU END UPDATE RESTORE</th>
<th>HELP</th>
</tr>
</thead>
<tbody>
<tr>
<td>====&gt;</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>------------------------</td>
<td>------</td>
</tr>
<tr>
<td>REPORT NAME</td>
<td>====&gt;</td>
<td></td>
</tr>
<tr>
<td>CURRENT GROUP ID</td>
<td>====&gt;</td>
<td></td>
</tr>
<tr>
<td></td>
<td>READ WRITE EXECUTE</td>
<td></td>
</tr>
<tr>
<td>OWNER ACCESS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>GROUP ACCESS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>OTHERS ACCESS</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>