

SECTION 3

TABLES/AS
MISCELLANEOUS FUNCTIONS

This section of the TABLES/AS Users' Guide covers the options from the TABLES/AS Primary Option menu that fall outside the Screen Generation and the Screen Processing. These options are:

- 5 - PREPARE SCREEN
- 6 - TEST FACILITY
- 7 - UTILITIES
- 8 - TABLES/MS

PRIMARY OPTION MENU

OPTION ==> 5 - PREPARE SCREEN

After you have defined your screen, including field edits, customized messages, relational edits table mapping and detailed processing options, you can proceed to testing the definition. You do not need to prepare the screen for testing, screen is prepared for testing automatically. However, prior to creating a load module for production, you must prepare the screen.

To "Prepare the Screen": Select Option 5, enter the screen name, and press ENTER. The system performs the necessary functions. When the system returns the screen, you may submit a batch JCL to create the screen module.

If you create a load module, it must be created whenever:

- Screen format is changed.
- Field edits are changed.
- Relational edits are changed.
- Field names used on the screen are changed.
- Attributes for fields on the screen are changed.
- Mapping is changed.
 - A new table map is added.
 - Processing for a table map is changed.
 - A previously defined table map is changed.
- Screen description variables are changed.

PRIMARY OPTION MENU OPTION ===> 6 - TEST FACILITY

This facility allows input of data to the screen as the end user would. All defined editing and TABLES/MS validations are done. Unless the fields are initialized by your program or through setting initial values using the Utilities Option, they are displayed with blank values.

Figure 3-1 is an example of a screen in the test mode.

ORDER ENTRY							
ENTRY DATE:				OR		CUSTOMER SHORT NAME:	
CUSTOMER NUMBER:							
SHIP-TO LOCATION:							
REQUESTED SHIP DATE:							
ITEM NO.	QUANTITY	TAX CODE	PROMISED DATE	ITEM NO.	QUANTITY	TAX CODE	PROMISED DATE
.....

Figure 3-1

The cursor is positioned at the first field on the screen. Proceed to enter the data. After pressing ENTER all editing takes place. If there are any errors, those fields are highlighted and the error message displayed in the common message field or special message field. Correct the field(s) in error and press ENTER. When all errors are corrected, the screen shows the last valid values entered, the cursor is positioned at the first field and there are no error messages shown.

PF KEYS

PF3	Return to the TABLES/AS Primary Option menu
PF4	Return to the TABLES/AS Primary Option menu
PF12	Return to the TABLES/AS Primary Option menu
ENTER	Activate editing

PRIMARY OPTION MENU OPTION ==> 7 - UTILITIES

Figure 3-2 show the TABLES/AS Utility Selection menu.

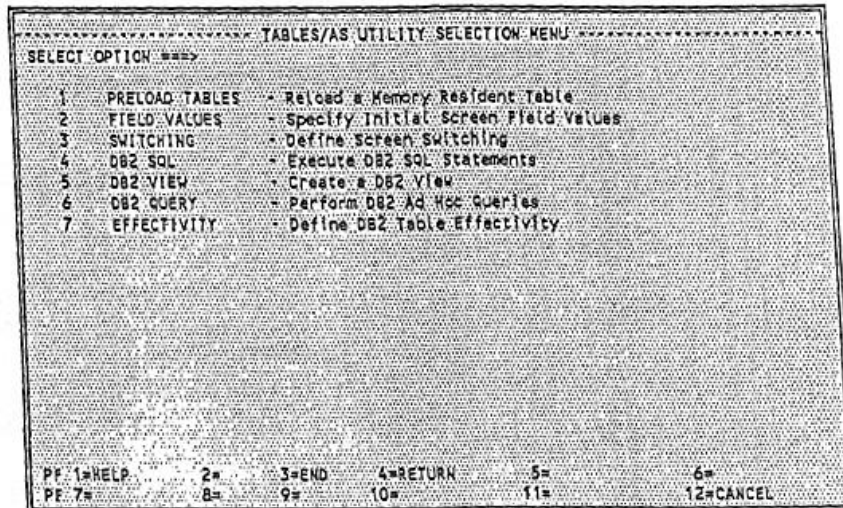


Figure 3-2

The options are:

- 1 - RELOAD A MEMORY RESIDENT TABLE
- 2 - SPECIFY INITIAL SCREEN FIELD VALUES
- 3 - DEFINE SCREEN SWITCHING
- 4 - EXECUTE DB2 SQL STATEMENTS
- 5 - CREATE A DB2 VIEW
- 6 - PERFORM DB2 AD HOC QUERIES
- 7 - DEFINE DB2 TABLE EFFECTIVITY

PF KEYS

- PF3 Return to the TABLES/AS Primary Option menu
- PF4 Return to the TABLES/AS Primary Option menu
- PF12 Return to the TABLES/AS Primary Option menu

OPTION ==> 1 - PRELOAD TABLES

The TABLES/AS Screen Processor preloads a number of tables for more efficient processing. This preload takes place only when a table is not already loaded. In order to reflect changes in preloaded tables, the changed table(s) must be purged from the CICS or IMS region.

Figure 3-3 shows the screen used to select which table(s) to purge.

```

----- TABLES/AS UTILITIES - RELOAD CONTROL TABLES -----
Select --S-- the Control Tables to be reloaded in memory:

=> ALL Control Tables (or select specific ones below)
=>  USERID      Tables/MS User Ids
=>  SCRRCO      Record processing information
=>  VALDTE      Field validation
=>  IMSSEQ      VSAH file or IMS segment information
=>  SCRINT      Screen initial values
=>  SCRSWC      SCREEN SWITCHING
=>  SCREDIT     Screen edit module name
=>  SCPMSG      User defined messages
=>  SCRORD      Order-By fields (DB2 only)
=>  TXNMNU      User menu transaction records

PF 1=HELP      2=      3=EXIT  4=EXIT/MENU  5=      6=
PF 7=          8=      9=      10=         11=     12=CANCEL
  
```

Figure 3-3

(X) SELECT TABLES BEING RELOADED

Enter an X next to the table(s) being reloaded.

Press ENTER. A message is displayed indicating that the table(s) is reloaded.

Press PF12 when completed.

The control table, *SCRINT*, is used to maintain the initial values by the screen name. This table is viewed using the TABLES/MS processing menu.

NOTE: When field names are changed, remember to update the initial values.

The initial values are maintained using the editor mode, so user ID is not required on the TB2INITL screen.

OPTION ==>> 3 – SWITCHING

Screen switching defines how your application fits together and interacts with your users. TABLES/AS provides the ability to switch within and beyond TABLES/AS applications.

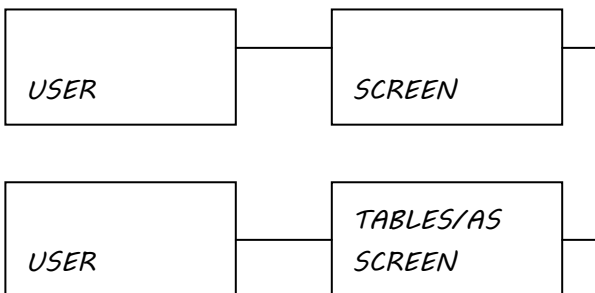
Screen switching involves switching between screens in the screen processor, switching to multiple screens from one source screen based on certain conditions, and switching between the Screen Processor in TABLES/AS and screens in other applications throughout your system.

When switching is performed, there is also the ability to:

- . Save the current screen data to be redisplayed later
- . Restore data previously saved for a screen
- . Both save the current screen data and restore data previously saved for a screen.

Save is used with the current screen (source screen). If the source screen is the TABLES/AS Screen Processor menu, you cannot use the Save or Both options. Restore works with the screen you are switching to (target screen). If screen data has not been previously saved, the target screen is displayed without any data fields in.

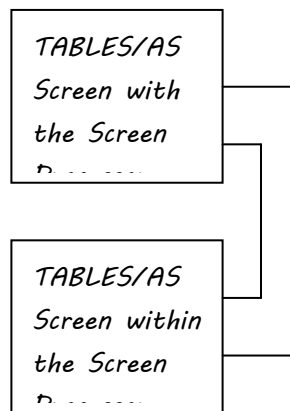
The following schematics show the switching capabilities.



When switching to or from the Screen Processor menu, data is not passed when the switch occurs. When switching to and from a screen within Screen Processor, data is passed.

SCREEN SWITCHING WITHIN SCREEN PROCESSOR

SCREEN SWITCHING WITHIN THE TABLES/AS SCREEN PROCESSOR



Screen switching is invoked under the following conditions:

- . After table processing is complete
- . Via a PF Key
- . Based on an option code
- . Based on the presence of data
- . Switching from multiple screens to a single screen.

SWITCHING AFTER TABLE PROCESSING

This condition is defined in the mapping process. When defining the table processing there is the option of entering the screen name to transfer to the target screen. The transfer (switch) takes place after processing is complete for that table. Following is a chart indicating when processing is considered complete for each function.

FUNCTION PROCESSING IS COMPLETE WHEN:

- R, I, B All retrieved records have been displayed and the user presses the specified key again.
- U All retrieved records have been displayed, changes have been made (add, change, delete) and the user presses the specified key again.
- A All records have been added. If the records are first retrieved with a Function U, the processing rules for U apply.
- C See the processing rules for Function U.
- D See the processing rules for Function U.

TRANSFERRING DATA

Transferring data from one screen to the next can be defined using record mapping process. Any table map on the source screen can be passed to the target screen. In order to do this, the table map being passed must be defined on both the source screen and the target screen. Only the data which is common to the maps on both screens is passed. For example, if SCREEN1 has a map named CUSTREC containing customer number, name, and address; and SCREEN2 has a map named CUSTREC containing customer number, then only the customer number is passed to SCREEN2 from SCREEN1. If SCREEN2 switches to SCREEN1 passing the same map, then the same holds true. Only the customer number is passed.

If the data being passed is part of a repeating group, the repeating group is passed to the target screen, up to the number of entries that the target screen can hold.

To pass data when switching from the source screen to the target screen enter the table name under the column map name on the switching definition. If a table name is not specified, then no data is passed when the switch occurs.

SWITCHING USING A PF KEY OR AN OPTION CODE

In some cases it may be necessary to switch to another screen at a time other than the completion of the table processing; it may be necessary to switch to different screens based on an operator's decision. This is accomplished by defining PF keys or option code as switch conditions.

An option within the TABLES/AS utility called Screen Switching is used to define the switch conditions. This process results in updating a control table, SCRSWC, which TABLES/AS Screen Processor uses to control switching. This table can be viewed through the TABLES/MS maintenance option.

SWITCHING BASED ON THE PRESENCE OF DATA

When switching is selected based on an option code field, and it is required to switch on any non-blank value, then enter a value of 'BLANK' under the option value field.

SWITCHING FROM MULTIPLE SCREENS TO A SINGLE SCREEN AND BACK

To switch from many screens to one screen (e.g., a help screen) and then switch back to the calling screen without Edit modules or exits, TABLE/AS saves the original screen under a special name. To switch back to that original screen, the restore is done to that special name, (\$\$N).

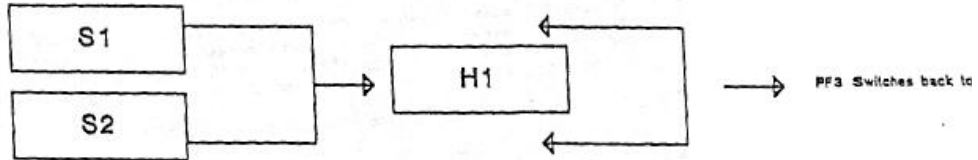
To accomplish this, screen switching must be defined exactly as they are now with the following two changes:

1. When defining screen switching, you can save a screen under a special name. Setting the Save/Restore Indicator to a number from 1 to 9 will save the screen with a name of \$\$1 to \$\$9.

2. To restore a special name screen, you specify the target name of \$\$1 to \$\$9 and a Save/Restore Indicator of R.

To illustrate this, assume we have the following situation:

Source screens S1 and S2 want to switch to help screen H1 and PF3 is used to end the help and switch back to the original screen (S1 or S2).



To set up the switching, the following switches would be defined:

	Switch 1	Switch 2	Switch 3	Notes
Source	S1	S2	H1	
Target	H1	H1	\$\$n	Where n = 1 to 9
PF Key	01	01	03	
Save/Restore Indicator	n	n	R	Where n = 1 to 9

Switch 1 and 2 set up the switch from screens S1 and S2 to H1 using PF1, defined the same as before, except the Save/Restore indicator is new. If set to a value of 1 to 9 (instead of S or B), the screen is saved under a special name of \$\$1 to \$\$9.

Switch 3 sets up the return from screen H1 using PF3. This is exactly the same as before except the target screen is now \$\$n (i.e., \$\$1 to \$\$9). This allows switching back to any screen that switches to it using the new Save/Restore values 1 to 9.

In the example, if n=1, then if screen S1 or S2 switch to H1, H1 will automatically switch back to the original one. Note that it does not matter how many screens switch to H1, as long as they switch to it and save using \$\$1, H1 will always switch back to the correct one.

NOTES: Since all saved screens are saved using the terminal name as the first part of the key, one user can never affect another when using the \$\$n special names. However, for one user, if one screen switches and saves using \$\$1, and the screen switched to also switches and saves using \$\$1, then the first screen saved is lost.

When you select Option 3 on the TABLES/AS Utility Selection menu the TB2SWICH menu is displayed. See Figure 3-5 (IMS version) and 3-6 (CICS version).

```

----- TABLES/AS - SCREEN SWITCHING -----
FUNCTION CODE ==> (A = add, U = update)

FROM SCREEN ==>
TO SCREEN ==> (Screen name, * to Exit, or $$$SCR.)

PFK NUMBER ==> -OR- OPT CODE ==> OPT FLD-NAME ==>
TRANCODE ==> (Screen Processor or User Transaction)
MFS MOD LEN ==> (Required if TO screen is MFS)
EDITOR MOD ==> (Exit module name to be given control)

Specify Transfer Information and Processing:

CURSOR POS ==> (Fld No. on the TO Screen)
MAP NAME ==> DBD NAME ==>
FUNCTION VALUE ==> KEY STROKE ==> SELECTION VALUE ==>

SAVE/RESTORE ==> (S-SAVE from screen, R-RESTORE to screen, B-BOTH)
SCR FLD-NAME ==> (field name if TO SCREEN = $$$SCR.)

PF 1=HELP 2= 3=END 4=RETURN 5= 6=
PF 7= 8= 9= 10= 11= 12=CANCEL
    
```

Figure 3-5

```

----- TABLES/AS - SCREEN SWITCHING -----
FUNCTION CODE ==> (A = add, U = update)

FROM SCREEN ==>
TO SCREEN ==> (Screen name, * to Exit, or $$$SCR.)

PFK NUMBER ==> -OR- OPT CODE ==> OPT FLD-NAME ==>
TRANCODE ==> (Screen Processor or User Transaction)
BMS MAP LEN ==> (Required if TO screen is MFS)
EDITOR MOD ==> (Exit module name to be given control)

Specify Transfer Information and Processing:

CURSOR POS ==> (Fld No. on the TO Screen)
MAP NAME ==>
FUNCTION VALUE ==> KEYSTROKE ==> SELECTION VALUE ==>

SAVE/RESTORE ==> (S-SAVE from screen, R-RESTORE to screen, B-BOTH)
SCR FLD-NAME ==> (field name if TO SCREEN = $$$SCR.)

PF 1=HELP 2= 3=END 4=RETURN 5= 6=
PF 7= 8= 9= 10= 11= 12=CANCEL
    
```

Figure 3-6

RETRIEVE EXISTING RECORDS**FUNCTION CODE**

Enter an R or U.

FROM SCREEN

Enter a valid TABLES/AS screen name.

All existing SCRSWC records for this From screen are displayed one at a time.

If a retrieval for update has been done, any of the displayed records may be changed or deleted and new records may be added. Press ENTER to display the next record. Up to 25 records are retrieved at one time.

The retrieval may be qualified by entering more than the From screen name. For example, if the To screen name is also entered, then only the records for that From screen and To screen combination are retrieved.

ADD NEW RECORDS**FUNCTION CODE**

Enter an A.

FROM SCREEN

Enter a valid TABLES/AS screen name.

TO SCREEN

Enter a valid TABLES/AS screen name.

Enter * to define exit condition.

Enter \$\$\$SCR to indicate that the TO SCREEN name will be found under field name SCR FLD-NAME. This will allow the TO SCREEN name to be changed dynamically during processing.

PF KEY NUMBER

Enter a value between 01-24.

OPT CODE

Enter the code or value that causes the switch to occur. The maximum length of this value is eight characters.

If it is required to switch on any non-blank value, then enter a value of 'BLANK' under the option code.

OPT FLD-NAME

Enter the name of the field in which the option code is entered.

TRANSACTION CODE

Enter the transaction code of the program being switched to.

For switching within the screen processor, enter screen processor transaction code.

MFS MOD LEN/BMS MAP LEN

Enter the MAP length of the non-AS screen being switched to, such as the length of a BMS or MFS screen.

OPTIONAL FIELDS**EDITOR PROGRAM NAME**

To call a user-written program, before exiting the source screen and before the target screen is displayed, enter the editor program name.

FIELD NUMBER FOR CURSOR POSITIONING

To position the cursor on a field on the target screen, enter the field number of that field. The field number corresponds to the sequence of the field in the copy code, not necessarily the sequence on the screen. For example, the fifth data field in the copy code is number five.

NOTE: If a change is made to the screen which affects the copy code (adding or deleting fields) the field number for cursor positioning may have to be updated.

TRANSFER DATA**TABLE NAME TO TRANSFER**

Enter the map name of the table being transferred.

The table being transferred must be defined as a map on both the source screen and the target screen. Only the data fields common to both table maps are transferred. If data is not being passed from one screen to the other, leave the table name and the DBD name (IMS version only) blank. DBD name appears only under IMS version.

FUNCTION VALUE

A function to be invoked internally during transfer to the TO SCREEN such that retrieval or insertion of data may be made before the TO SCREEN is displayed. Valid function values are: A (add), I (retrieval for inquiry), U (retrieval for update), R (retrieval for inquiry).

KEY STROKE

Valid key stroke range is 00-24.

Key stroke field is optional and it is used to indicate the processing key stroke to be invoked internally for processing the screen using above function value. The key stroke must be the same as defined under table processing to process the table TABLE NAME.

SELECTION VALUE

Selection value is a function code character such as S or X used to select a particular row or rows to be transferred from the FROM SCREEN to the TO SCREEN. The default selection value is S. The selection value is always entered in the function code field.

SAVE AND RESTORE DATA

SCREEN SAVE/RESTORE OPTION

- Enter an S to save data fields on the source screen before switching.
- Enter an R to restore data fields previously saved for the target screen when switching occurs.
- Enter a B to both save and restore.
- Leave the field blank if saving or restoring is not desired.

SCR FLD-NAME

This is the name of a field on the FROM SCREEN which will provide a value for the TO SCREEN name to switch to. This field is used when the TO SCREEN contains a value of \$\$\$SCR.

After the SCRSWC records are set up for your screen, the switching logic may be tested using the Screen Processor. It is not necessary to recreate the module for screen testing when a change is made to the SCRSWC table.

For example, assume that the menu screen shown in Figure 3-6 called Order Processing Main menu has been designed.



Figure 3-6

The field name for the option number is OPTNO. Three SCRSWC records are set up. The following is entered:

	<u>Record 1</u>	<u>Record 2</u>	<u>Record 3</u>
FROM SCREEN	MENU	MENU	MENU
TO SCREEN	ORDENT	ORDMAINT	ORDING
OPT CODE	1	2	3
OPT FLD-NAME	OPTNO	OPTNO	OPTNO

If a SCRSWC record for an option code of 4 is created and the user enters a 4 on the screen, the switch occurs. If the user enters an option code that has not been defined to the SCRSWC record, then no switch occurs.

OPTION ==> 4 - DB2 SQL

This facility allows processing of SQL statements on-line. Any SQL statement other than a SELECT statement may be processed.

The screen shown in Figure 3-7 is used for input.

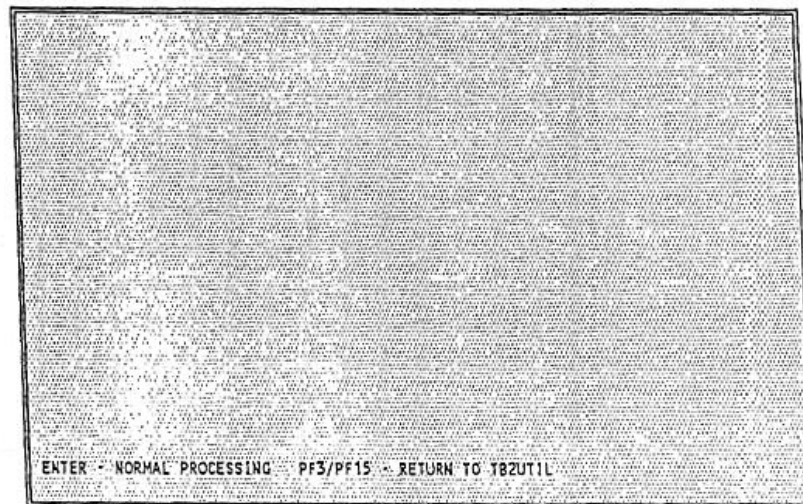


Figure 3-7

OPTION ==> 5 - DB2 VIEW

This facility may be used to create DB2 views. Views are created by selecting fields from other tables and views. A maximum of six tables and views may be specified in the selection process.

The screen shown in Figure 3-8 is used for input.

```
T62082V1                CREATE DB2 VIEW
NAME OF VIEW TO BE CREATED ==>
TABLES/VIEWS TO SELECT FROM
    ==>
    ==>
    ==>
    ==>
    ==>
    ==>
PF3/PF15 - RETURN
```

Figure 3-8

NAME OF VIEW TO BE CREATED

Enter the view name excluding the user authorization ID.

TABLES/VIEWS TO SELECT FROM

Fully qualified Names of up to six tables and views may be entered.

Press ENTER after the input and the TB2DB2V2 screen appears.

The screen shown in Figure 3-9 is an example.

```

TB2DB2V2                SELECT FIELDS                SPS001.PPPP
IS'
-----
FIELD NAME                TABLE/VIEW NAME
-----
NUMBER                    SPS001.JSHSSSST
NAME                      SPS001.JSHSSSST
CITY                     SPS001.JSHSSSST
STATE                    SPS001.JSHSSSST
ZIP                      SPS001.JSHSSSST
AVERAGE                  SPS001.JSHSSSST
BIRTHDAY                 SPS001.JSHSSSST
CHANGED                  SPS001.JSHSSSST

PF3/PF15 - RETURN      PF7/PF19 - START AGAIN
SELECT FIELDS FROM ABOVE
  
```

Figure 3-9

Enter selection code 'S' next to each field that is to be viewed.

The next screen shown is TB2DB2V3. See Figure 3-10.

```

CREATE VIEW SPS001.PPPP ( NUMBER, NAME, CITY, STATE ) AS SELECT ALL
SPS001.JSHSSSST.NUMBER, SPS001.JSHSSSST.NAME
SPS001.JSHSSSST.CITY, SPS001.JSHSSSST.STATE
FROM SPS001.JSHSSSST

PF3/15 - R3RETURN      PF7/19 - SCROLL TO PAGE1
MODIFY CREATE STATEMENT AS NEEDED
  
```

Figure 3-10

After modifying the create statement above, press ENTER.

If the syntax of the create statement is correct, a view is created for the specified name.

OPTION ==> 6 - DB2 QUERY

The screen shown in Figure 3-11 is used to perform ad hoc queries.

```
T82082S1                                DB2 AD HOC QUERY

TABLE/VIEW NAME ==>

ENTER - NORMAL PROCESSING
PF3/PF15 - RETURN TO T82UT1L
```

Figure 3-11

If a table name SPS001.JSHSSST is entered on the previous screen, the following screen, Figure 3-12, with data appears.

```

T8208252          SELECT FIELDS FROM TABLE          SPS001.JSHSSST
'S'  FIELD NAME  'S'  FIELD NAME  'S'  FIELD NAME
-----
NUMBER          NAME          CITY
STATE           ZIP           AVERAGE
BIRTHDAY       CHANGED
  
```

ENTER - NORMAL PROCESSING PF3/PF15 - RETURN TO T8208251
 SELECT FIELDS FROM ABOVE

Figure 3-12

Enter selection code S next to each field that is to be included for inquiry. The next screen shown, Figure 3-13, contains the SQL select statement.

```

SELECT NUMBER, NAME FROM SPS001.JSHSSST
  
```

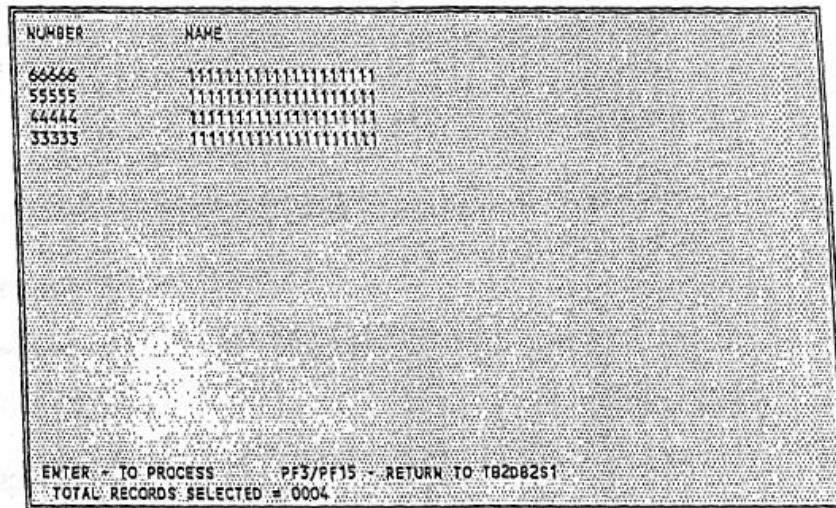
ENTER - TO PROCESS PF3/PF15 - RETURN TO T8208252
 MODIFY SELECT STATEMENT AS REQUIRED

Figure 3-13

The select statement shown above may be modified to include a where clause for search values.

After modifying the above select statement, press ENTER.

If the syntax of the select statement is correct, the statement is executed. The next screen shown, Figure 3-14, contains the results of the inquiry.



NUMBER	NAME
66666	11111111111111111111
55555	11111111111111111111
44444	11111111111111111111
33333	11111111111111111111

ENTER - TO PROCESS PF3/PF15 - RETURN TO TB2D6251
TOTAL RECORDS SELECTED = 0004

Figure 3-14

Inquiry results are displayed in a report format. Records selected are distributed into pages. One page is displayed each time the enter key is pressed. When there are no records left to be displayed, the select statement screen, Figure 3-13, is again shown for a new selection.

OPTION ==> 7 - DB2 TABLE EFFECTIVITY

Table effectivity provides a capability to maintain and access multiple versions of rows within a table in which there is always a start and expiration date attached to each row. The effectivity control facility provides the user with automated ways to validate storage of multiple versions of a row and to eliminate effectivity gaps and overlaps.

Any table under effectivity control must have a unique primary index where start date (which for the purposes of this documentation will be called the Break-in date or BI date for short) is included as part of the unique index. A unique key may be made up of one or more columns including the BI date. The last column of the unique index must be the BI date.

The expiration date or the stop date, for purposes of this documentation will be called the Break-out date or BO date for short.

The screen shown in Figure 3-15 is used to define effectivity.

```

----- TABLES/AS - EFFECTIVITY DEFINITION -----
FUNCTION CODE ==> (A=Add, U=Update, R=Retrieve, D=Delete)

Table Name ==> (Include Auth-id)

Date Format ==> New Break-In Date Control ==>
Break-In Column ==> Break-In Control Flag ==>
Break-Out Column ==> Break-Out Control Flag ==>

Allow Row Delete ==> Row Change ==> Expired Row Change ==>

Key Column Names and Asc/Desc Order (Defaults to Primary Key fields)

Column Order Column Order
-----
01 05
02 06
03 07
04 08

PF 1=HELP 2= 3=END 4=RETURN 5= 6=
PF 7= 8= 9= 10= 11= 12=CANCEL

```

Figure 3-15

When the screen shown in Figure 3-15 appears, the following information may be entered to define effectivity control of a DB2 table.

TABLE NAME

Enter the fully qualified name of the DB2 table (e.g., auth-id.tblname).

DATE FORMAT

The date format may be a date (see Appendix A) or a time stamp (date format 'S').

PRIMARY OPTION MENU OPTION ==> 8 - TABLES/MS

This facility allows you to access the full capabilities of TABLES/MS by switching directly to the TABLES/MS Primary Option menu. See Figure 3-16.

```

..... TABLES/MS PRIMARY OPTION MENU .....
SELECT OPTION ==>                                DATE:
                                                    TIME:
1 TABLE DEFINITION * Create and Update Table Definitions
2 TABLE PROCESSING * Add, Change and Delete Table Records
3 SCREEN DESIGN * Customize Screen Definitions

APPLICATION ID ==>                                (May be Required)

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PF 1=HELP      2=      3=END      4=RETURN      5=      6=
PF 7=          8=      9=      10=          11=     12=
  
```

Figure 3-16

You may return to TABLES/AS by selecting PF key 3 or PF key 12.

ALLOW ROW CHANGE

Y = Allow change of all non-key fields including BO date (expired BO effectivity change may not be allowed)

R = Allow change of all non-key fields excluding BO date

N = Do not allow any change

The default value is 'Y'.

ALLOW EXPIRED ROW CHANGE

Y = Allow change of expired rows excluding BO date & keys

N = Do not allow any change

The default value is 'Y'.