FORMS/250
Programming Manual

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CHAPTER 1

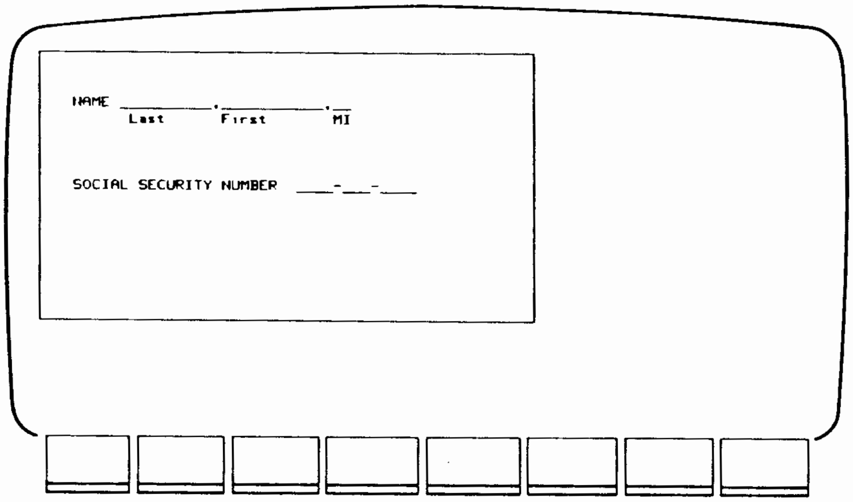
Introduction

The FORMS/250 software gives you a means to draw a form image on the display screen. You can also specify input and output fields and the order in which these fields are to be accessed by an operator and a program. Once a program has been written that uses a form, that form can be modified without having to modify the program.

The process of creating forms is described in Chapter 2. Modifying a form is described in Chapter 3. The information about the form that a program uses is described in Chapter 4. The form control statements are described in Chapter 5.

Forms Introduction

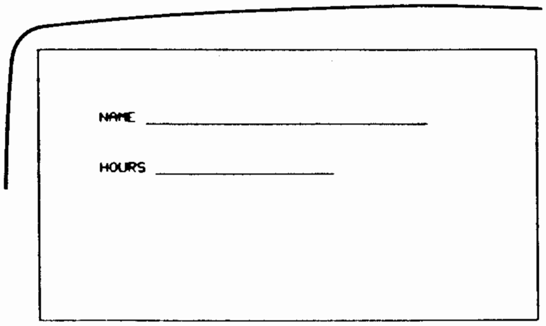
An HP 250 form is an image that is displayed, providing input and output formats for program use. The operator then enters the correct information into each specified blank space. Instead of prompting for each item, the program can then display the form. For example:



```
NAME ___________._____________.__
      Last        First        MI


SOCIAL SECURITY NUMBER ___-__-____
```

The operator types in the blanks, pressing either ⇧ or ⇥ after each item. The cursor then moves automatically to the next item to be input. (Note that the way in which the program is written will determine which of the two keys can be used. Refer to Chapter 4.)

A program can also output information to a form. Assume a program requests the number of hours an employee worked in a week. A form for this might look like the following:

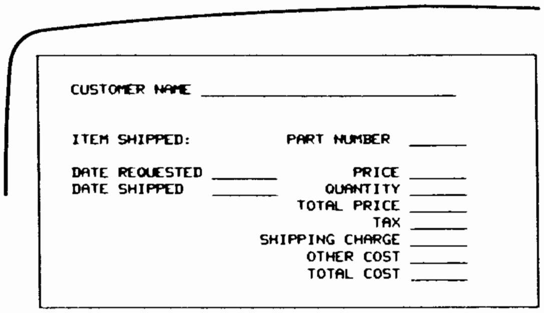


NAME ______________________

HOURS ______________

Where the program fills in the name and the operator fills in the hours.

The two examples show very simple forms; it may have been easier to use simple input and output statements. However, if more information about a topic is wanted, the form becomes the easier method. For example, assume a program keeps track of customer shipments. One form it uses could look as follows:



CUSTOMER NAME ____________________

ITEM SHIPPED: PART NUMBER _____

DATE REQUESTED _____ PRICE _____
DATE SHIPPED _____ QUANTITY _____
TOTAL PRICE _____
TAX _____
SHIPPING CHARGE _____
OTHER COST _____
TOTAL COST _____

The program can display this form and prompt the operator to fill it in. The program can read the entries, then blank out the form and begin again.

A form can be created to look like a printed form currently in use. In this way, an operator can easily type the information from a paper to an identical HP 250 form.

CHAPTER 2

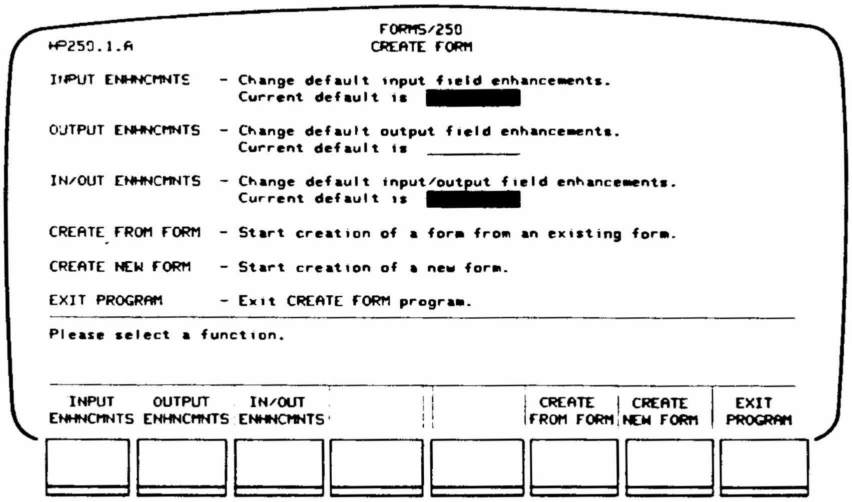
Creating Forms

To create a form, use the Create Form (CFORM) program. Load the Operating System Disc in the default drive and execute:

```
RUN"CFORM"
```

After you execute the RUN command, the display shows you the definition of each of the Special Function Keys (softkeys) on the display and shows a short explanation of each one. This is called the initial CREATE FORM MENU.

Initially the softkeys are defined as follows:



```
                                   FORMS/250
HP250.1.A                         CREATE FORM

INPUT ENHNCMNTS    - Change default input field enhancements.
                     Current default is ████████

OUTPUT ENHNCMNTS   - Change default output field enhancements.
                     Current default is ________

IN/OUT ENHNCMNTS   - Change default input/output field enhancements.
                     Current default is ████████

CREATE FROM FORM   - Start creation of a form from an existing form.

CREATE NEW FORM    - Start creation of a new form.

EXIT PROGRAM       - Exit CREATE FORM program.
---------------------------------------------------------------------
Please select a function.

---------------------------------------------------------------------
  INPUT     OUTPUT    IN/OUT                       CREATE    CREATE     EXIT
ENHNCMNTS ENHNCMNTS ENHNCMNTS                    FROM FORM NEW FORM   PROGRAM
```

INPUT ENHNCMNTS – The input enhancements softkey. When an area (or field) is to be used *exclusively* for input, you can *set* 1) the fill character for that field [a fill character is the character that is repeated in the field during the creation of the form] and 2) the way in which the character is displayed [inverse video, underline, etc.].

OUTPUT ENHNCMNTS – The output enhancements softkey. A field can be defined exclusively for output. This field can be visually enhanced in the same manner as an input field.

IN/OUT ENHNCMNTS – The input and output enhancement softkey. A field can also be defined to accept both input and output. This field can be visually enhanced in the same manner as an input or an output field.

CREATE FROM FORM – Allows you to specify a form that already exists to be used as a basis for creating a new form. When this key is pressed, a new menu is displayed (page 2-3).

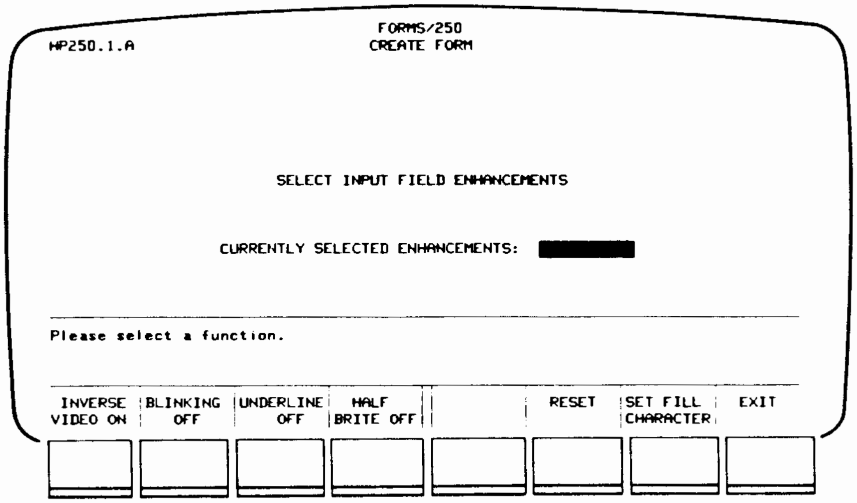
CREATE NEW FORM – Clears the display so you can create a new form. The same menu as in CREATE FROM FORM is displayed (page 2-3).

EXIT PROGRAM – Terminates the program.

Display Enhancements

When CFORM is run, a short explanation of each softkey is displayed. In addition, the current enhancements for input, output and input/output fields are shown. To change one of the field enhancements, press the related softkey.

For example, assume that the enhancements for input fields are half bright, inverse video and the fill character is a blank. To change the enhancements and/or fill character, you press the INPUT ENHNCMNTS softkey. The following information is shown on your display.



```
HP250.1.A                       FORMS/250
                               CREATE FORM

                    SELECT INPUT FIELD ENHANCEMENTS

               CURRENTLY SELECTED ENHANCEMENTS:

Please select a function.
```

SET FILL CHARACTER – Allows you to change the fill character. A fill character is used to further indicate fields while the form is being created. The character is replaced by blanks when the form is stored. You will be asked to enter the fill character. The character will appear in the field next to CURRENTLY SELECTED ENHANCEMENTS after you press ⇧ . You may change this character as many times as you wish by pressing this softkey again and entering a new character.

INVERSE VIDEO, BLINKING, UNDERLINE and HALF BRITE softkeys are toggled on and off. The on or off state is displayed. In this example INVERSE VIDEO is on, BLINKING is off, UNDERLINE is off and HALF BRITE is on.

RESET – Changes the enhancements and fill character to the value they had when the input, output or input/output enhancement key was pressed.

EXIT – When you are satisfied with the selected enhancements, press the EXIT key to return to the initial menu.

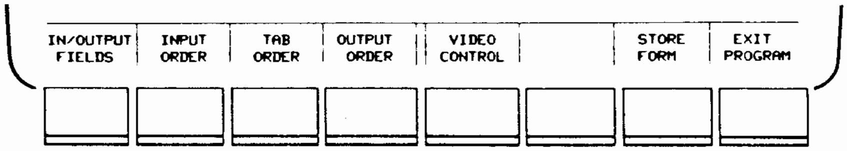
Create Form

After you have selected the field enhancements, you are ready to create the form. There are two keys you can use to begin this process.

CREATE FROM FORM – Allows you to specify a form file name that already exists. (The file name may contain a device specifier or a volume label.) The old form can be used as a basis for the new form. The old form will be displayed and a new menu will be set.

CREATE NEW FORM – Clears the display so you can create a completely new form. A new menu is also set.

When either softkey is pressed, the following menu appears:



IN/OUTPUT FIELDS – Defines the location and length of input and output fields.

INPUT ORDER – Specifies the order in which the program reads the input fields.

TAB ORDER – Sets the order in which the operator accesses each input field.

OUTPUT ORDER – Specifies the order in which the program accesses each output field.

VIDEO CONTROL –Used along with the keyboard to draw the image on the display.

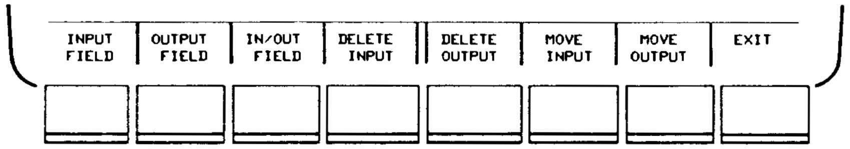
STORE FORM – Stores the form on a disc.

EXIT PROGRAM – Terminates the program.

Input and Output Fields

As previously stated, a form consists of a display image and I/O reference information for program use. You create the image of the form with the VIDEO CONTROL softkey. The reference information consists of two items: 1) the number and location of input and output fields and 2) the order the input and output fields are accessed by the program and the operator.

Use the IN/OUTPUT FIELD softkey to define the number and length of the input and output fields. When IN/OUTPUT FIELD is pressed, the following menu appears:



INPUT FIELD – Defines an area (a field) that can only be used for input. You can define a maximum of 200 input fields for each form. To define an input field, position the cursor at the first character position and press INPUT FIELD. If the field is to be ten characters long, for example, press this softkey ten times. The input field enhancements and fill character are added automatically. (You defined the field enhancements and fill character before creating the form image.) A line may contain multiple input fields; however, input fields on the same line must be separate by at least one non-input field character.

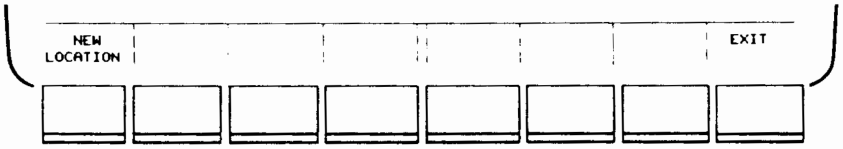
OUTPUT FIELD – Defines a field that can only be used for output. You can define a maximum of 200 output fields. Define each output field in the same manner as an input field.

IN/OUT FIELD – Defines a field that can be used for either input or output. Define each input/output field in the same manner as an input field or output field. Input/output fields must be separated from both input and output fields by at least one non-field character.

DELETE INPUT – To delete a field previously defined as an input field, you position the cursor into the field to be deleted and press DELETE INPUT. If the field is an input/output field, only the input portion is deleted. That is, the input/output field becomes an output only field.

DELETE OUTPUT – Performs the same function as the DELETE INPUT key except DELETE OUTPUT works on output fields.

MOVE INPUT – Moves an input field from one area of the form to another. First, position the cursor within the input field and press MOVE INPUT. A new menu appears:



Move the cursor to the location where the first character of the field is to be. Then press NEW LOCATION. The input field will be moved to the new location. The length of the field does not change. If the relocation is accomplished with no errors, an EXIT is performed automatically. If the new location of the field would cause an overlap with another field or if the field would extend beyond the right side of the display, the relocation will not take place. If you decide not to move the field, press EXIT to return to the previous menu.

MOVE OUTPUT – Allows you to move an output field in the same manner as moving an input field.

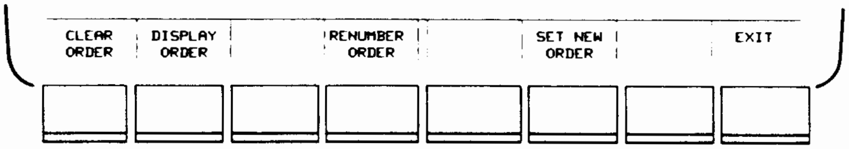
You can create, delete and move as many fields in the form as you wish. When you are satisfied with the number, length and location of the fields, press EXIT.

Order of Field Access

The order of input and output provides the second part of the information the program needs to use the form. The **input order** is the order in which the program will read data from the form. The **output order** is the order in which the program will write data to the form. The **tab order** is the order the cursor moves from one input field to the next when ⇥ is used.

Each input and output field must be assigned an input or output field number. The default order for input and output fields is from top-left to bottom-right.

To specify a different input field order, press the INPUT ORDER softkey. The form fields are redrawn with the input field numbers displayed in the input fields. The output fields are not shown. A default order is displayed if the order has not yet been specified. The new menu is:



CLEAR ORDER – Clears the input field numbers from the form.

DISPLAY ORDER – Shows the currently set order of input. It may be different than the order that was displayed before this softkey was pressed.

RENUMBER ORDER – Takes the order currently on the display and renumbers the field such that each field has an integer field number. This softkey displays the new order, but does not change the set order. To set the new order, use SET NEW ORDER. If a field contains an invalid number (e.g., 1.1.1), the renumbering will not take place.

SET NEW ORDER – Renumbers the input field number in the same manner as the RENUMBER ORDER softkey, and then sets the new order. So, if you press CLEAR ORDER then press DISPLAY ORDER, the same order as is currently displayed will be displayed again. SET NEW ORDER must be pressed before EXIT, or no change in the field order will take place.

EXIT – Takes the last field order that was set as the current field order and returns to the previous menu.

The display order can be edited or CLEAR ORDER can be pressed to clear the display order from the form. The new order can then be entered. To enter a number in a blank field, position the cursor within the field and type the number. (The ⇥ key will move the cursor from one field to another.) When entering the field order, non-integer values may be used. If two fields have the same order number, they will be ordered from top-left to bottom-right. If a field has no number, it will take the number of the preceding (top-left to bottom-right order) field. When you are satisfied with the field numbers, press SET NEW ORDER. A renumber operation is performed and the field order of the form is updated. Note that the field order that is stored with the form is only changed when SET NEW ORDER is pressed.

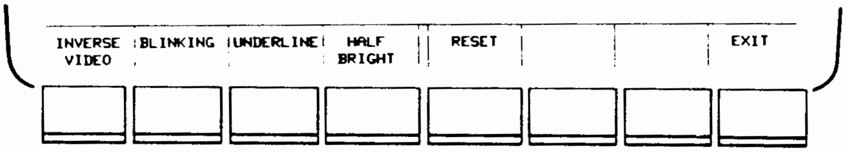
Output field numbers are specified by first pressing OUTPUT ORDER and then following the same procedure as with INPUT ORDER.

Tab Order

The order that the cursor moves via ⇥ or ⇧ while the operator is inputting data to the form is set with TAB ORDER. The tab order is not related to the input field order. Pressing TAB ORDER brings you to the same menu as with INPUT ORDER and OUTPUT ORDER. The tab order is specified in the same manner as the input field order and output field order.

Form Image

Use the VIDEO CONTROL softkey and the keyboard to draw the image of the form on the display. Pressing **VIDEO CONTROL** causes the following menu to appear:



INVERSE VIDEO, BLINKING, UNDERLINE and HALF – Causes the display to change for one character space at the location of the cursor. For example, assume you want to display the top of the form with inverse video. You position the cursor at the top left corner of the screen by using ↖ . Then press INVERSE VIDEO. One space at that location will become inverse video. To create larger inverse video fields, press INVERSE VIDEO several times.

Now assume you want the name of the form to appear in blinking letters on the top (inverse video) line. Position the cursor at the point you want the name to appear. Type the name. Reposition the cursor to the beginning of the name and press BLINKING repeatedly until the entire name is blinking.

RESET – Deletes any video enhancements at the location of the cursor. For example, assume you want to delete the inverse video one space before the form name and one space after the form name. Position the cursor to the space before the name and press RESET. Then position the cursor at the space after the name and press RESET again.

Press EXIT to return to the previous menu when the image of the form is complete.

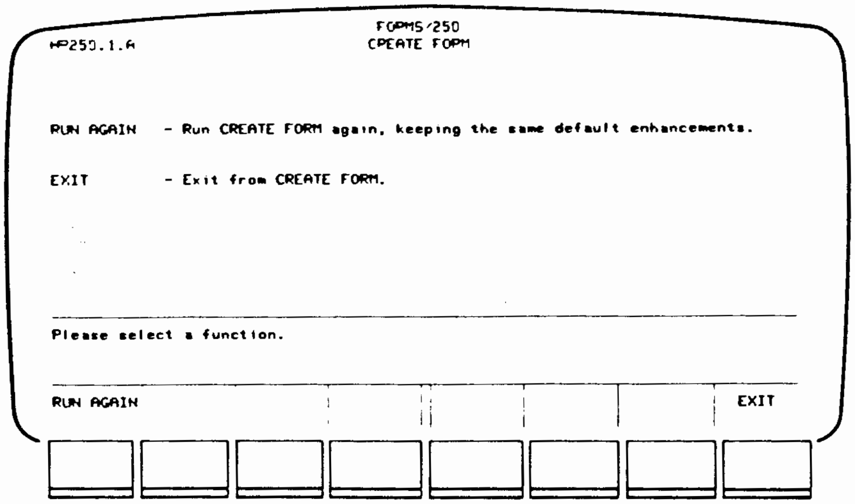
Keyboard

The keyboard is used to enter labels, instructions, the name of the form, etc. You use the keyboard in the same manner as you would without FORMS/250. You can redefine the keyboard to the line drawing characters or optional foreign character set and enter these characters into the form image. (Redefining the keyboard is explained in the BASIC Programming Manual.) The line drawing sets are shown in Appendix C.

Store the Form

When the STORE FORM softkey is pressed, you are asked for the name of the form. You specify the form file name which may include a unit specifier or volume label. If a file by that name already exists, you are asked if the old file is to be purged. If you answer no, you will be asked for a new file name. If you answer yes and the file is unprotected, a purge will be performed and the new form will be stored. If the file is protected, you are asked for the protect code for the file. If you specify an incorrect protect code, you are asked for a new file name.

After the form is stored, the keys become defined as follows:



```
                                   FORMS/250
HP250.1.A                         CREATE FORM


RUN AGAIN    - Run CREATE FORM again, keeping the same default enhancements.

EXIT         - Exit from CREATE FORM.





Please select a function.


RUN AGAIN                                                          EXIT
```

If you wish to create another form, press RUN AGAIN. The keys become defined as they were when the program was first run. These keys are shown on page 2-1. The display enhancements are defined as you set them.

If you wish to exit the program, press EXIT.

Summary of CFORM

Now that you have read all the details on creating forms, here is a short overview. The order of operation shown here is not mandatory.

1. Run "CFORM".
2. Using the Enhancements softkeys, set the default field video enhancements.
3. Press CREATE NEW FORM or CREATE FROM FORM.
4. Create the image of the form.
5. Create input and output fields.
6. Set input, tab and output order.
7. Now set any extra field enhancements.*
8. Store the form.

* This step should be done after step 6 because any extra field enhancements are erased when the field orders are set.

CHAPTER 3

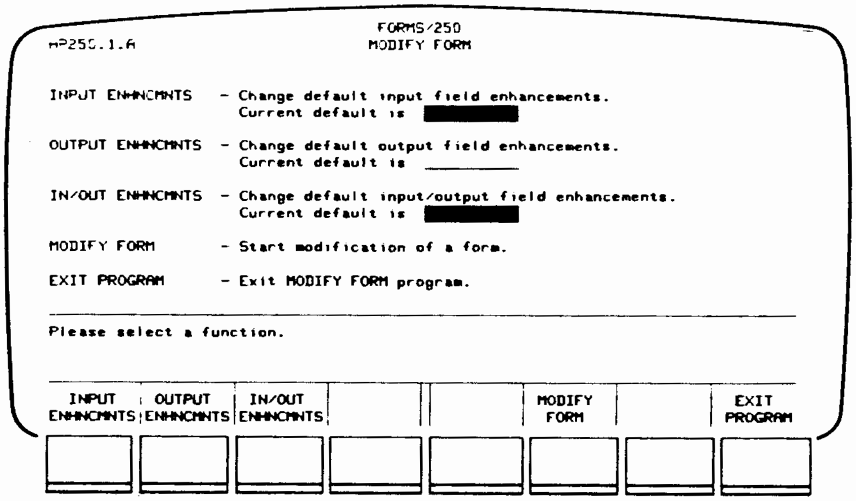
Modify Form

The Modify form (MFORM) program allows you to modify a form without destroying the program-link information (the number and length of the fields and the order in which they are accessed by the program). The program-link information cannot be changed with MFORM because any changes in the form would require similar changes in every program that uses the form.

To run the MFORM program, load the Operating System Disc in the default drive and execute:

```
RUN"MFORM"
```

The current display enhancements (inverse video, half bright, underline) for input, output and input/output fields are shown along with the definitions of the softkeys:

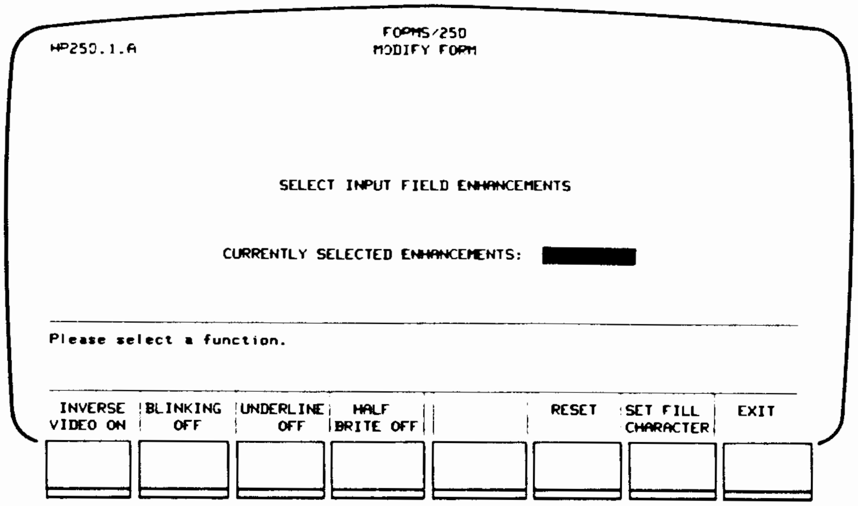


```
                                    FORMS/250
HP250.1.A                          MODIFY FORM

INPUT ENHNCMNTS    - Change default input field enhancements.
                     Current default is ██████████

OUTPUT ENHNCMNTS   - Change default output field enhancements.
                     Current default is __________

IN/OUT ENHNCMNTS   - Change default input/output field enhancements.
                     Current default is ██████████

MODIFY FORM        - Start modification of a form.

EXIT PROGRAM       - Exit MODIFY FORM program.

Please select a function.
```

NOTE

No matter what video enhancements are set on the form, all input and output fields will change to the default enhancements. If you wish the enhancements to remain the same, you will have to redefined them by: 1) redefining the default values or 2) using the VIDEO CONTROL softkey.

The default field enhancements can be changed by pressing one of the softkeys marked ENHNCMNTS:



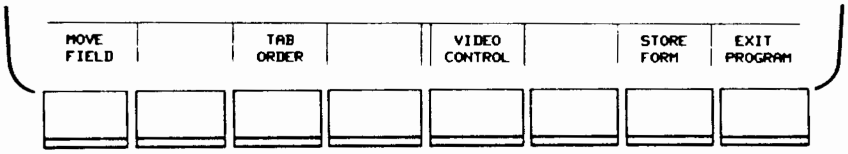
```
HP250.1.A                      FORMS/250
                              MODIFY FORM


                    SELECT INPUT FIELD ENHANCEMENTS

               CURRENTLY SELECTED ENHANCEMENTS: ▇▇▇▇

Please select a function.

 INVERSE |BLINKING |UNDERLINE|   HALF    ||       |  RESET  |SET FILL |  EXIT
VIDEO ON |   OFF   |      OFF|BRITE OFF  ||       |         |CHARACTER|
```

Each softkey has the same definition and use as in the CFORM program:

SET FILL CHARACTER – Allows you to change the character which appears in the field while MFORM is running. This character becomes a blank when the form is stored.

INVERSE VIDEO, BLINKING, UNDERLINE and **HALF BRITE** are toggled on and off. They set the default display enhancement. Note, however, that each field does not have to use the default enhancement. The enhancements on an individual field can be changed when the rest of the form image is changed.

When MODIFY FORM is pressed on the initial MFORM menu, you are asked for the name of the form to be modified. The form will be displayed and the keys take on a new definition.



```
 MOVE    |         |   TAB   |         ||  VIDEO   |        |  STORE  |  EXIT
 FIELD   |         |  ORDER  |         || CONTROL  |        |  FORM   | PROGRAM
```

MOVE FIELD – Moves the input or output fields to new locations. However, an input/output field is moved as a whole. That is, the input or output portion of the field cannot be moved separately.

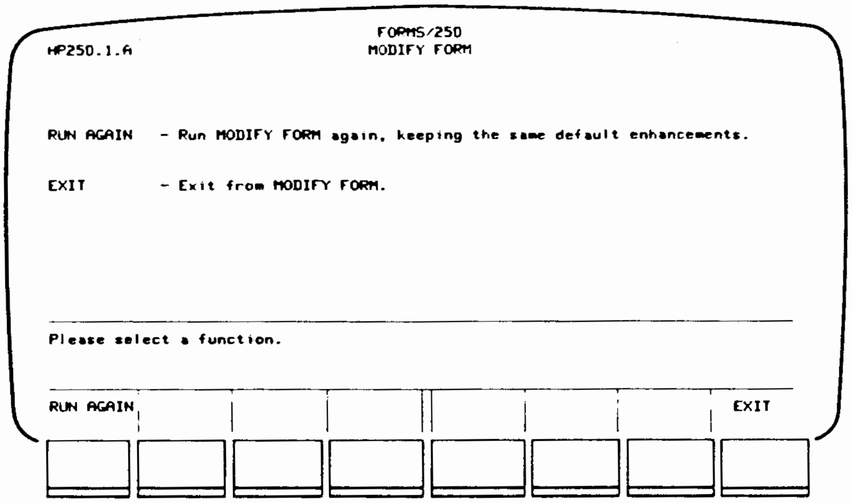
TAB ORDER – Sets the order the cursor moves. The order is set in the same manner as with CFORM.

Note that there is no key which allows you to create or delete fields or to change the order of input from or output to fields. If you want to change these properties, use the Create Form (CFORM) program.

VIDEO CONTROL – Used along with the keyboard to change the image of the form (refer to FORM IMAGE in Chapter 2).

STORE FORM – Stores the modified form. The old file is purged and the new form is stored with the same name as the old form. If the file is protected, you are asked for the protect code. If you specify an incorrect code, you are asked to enter a new file name. If the disc was removed and the file cannot be found, you are asked for a new file name.

Once the form is stored, the new menu is:



```
                                          FORMS/250
HP250.1.A                                MODIFY FORM


RUN AGAIN   - Run MODIFY FORM again, keeping the same default enhancements.

EXIT        - Exit from MODIFY FORM.





Please select a function.
```

To terminate the MFORM program, press the EXIT softkey.

To modify another form, press the RUN AGAIN softkey.

CHAPTER 4

Program Form Interaction

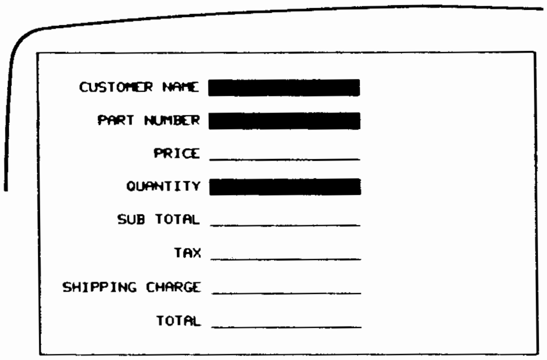
Form Link Information

The linking information stored with the form consists of:

1. The number and location of input and output fields.
2. The order in which the input and output fields are accessed by the program.

The program that uses the form must be written so that the program-form link is complete. The program must read or write the correct number of input or output fields in the correct order. If not, incorrect results will occur.

For example, assume the program uses the following form:



CUSTOMER NAME

PART NUMBER

PRICE

QUANTITY

SUB TOTAL

TAX

SHIPPING CHARGE

TOTAL

The operator fills in the inverse video fields and the program fills in the underlined fields. Suppose the input order was 1) CUSTOMER NAME 2) PART NUMBER 3) QUANTITY. Further assume that the program was written to use the input fields in the following order: 1) CUSTOMER NAME 2) QUANTITY 3) PART NUMBER. You can see the problems that would result. Wrong parts would be shipped, and the total charges would be wrong.

When you are writing a program that uses a form, but do not know the input and output order of the fields, do the following:

1. Run CFORM.
2. Press CREATE FROM FORM.
3. Type in the name of the form the program will use.
4. Press INPUT ORDER, which will display the order of input.
5. Take note of the input order.
6. Press EXIT.
7. Press OUTPUT ORDER which will display the order of output.
8. Take note of the output order.
9. Press EXIT.
10. Abort CFORM by pressing EXIT PROGRAM.

Do not alter the form and do not store it. While the form is displayed, you should also note the length of each field.

Input and Output Field Pointers

Two pointers, an **input field pointer** and an **output field pointer**, keep track of the current input and output fields. Each time an item is input to the program from an input field, the input field pointer is incremented. The same occurs for the output field pointer. The fields are accessed in the order specified when the form was created (refer to ORDER OF FIELD ACCESS in Chapter 2).

Input and Output to the Form

The standard BASIC input and output statements take the following description when used on an active form.* All these statements are fully described in the BASIC Programming Manual.

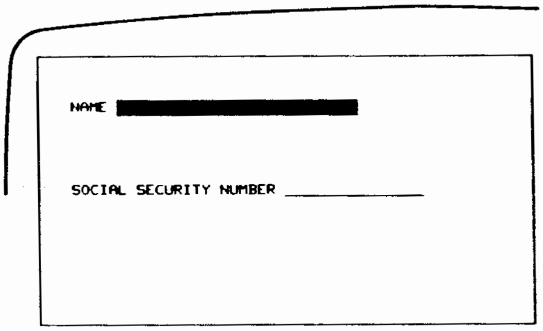
* An active form is one that is displayed and has linking information stored in memory. Only one form can be active at a time.

The INPUT Statement

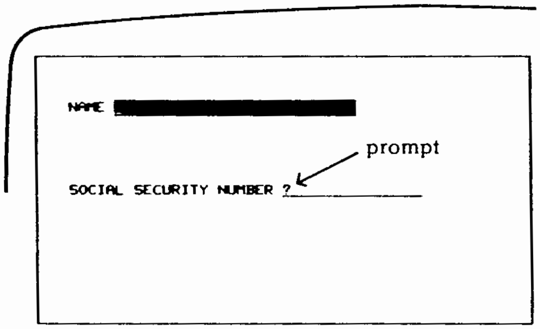
INPUT[["prompt" ;]input list]

This syntax first outputs the prompt (either a ? or the prompt specified in the syntax) to the current output field and increments the output field pointer. The cursor then moves to the current **tab** field. When the operator presses ⇧ , the contents of the current field is input and the input field pointer is incremented. If more than one input item is in the input list, the next prompt (if any) is output. The output field pointer is incremented and the cursor moves to the next tab field. The input field pointer is incremented when an item is input to the program.

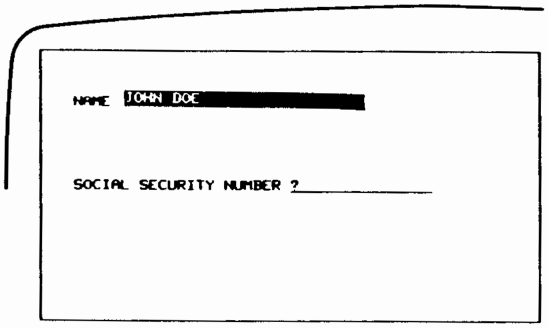
For example, assume the following form is used. The field following NAME is an input field. The field following SOCIAL SECURITY NUMBER is an output field.



Before the form is used, the input field pointer (IF#) is 1 and the output field pointer (OF#) is 1. The statement INPUT Name$ causes the form to appear as follows:



That is, the prompt (?) is output to the output field number 1 and the cursor appears in input field number 1. IF#=1, OF#=2. The operator types in a name and presses ⇧ .



NAME JOHN DOE

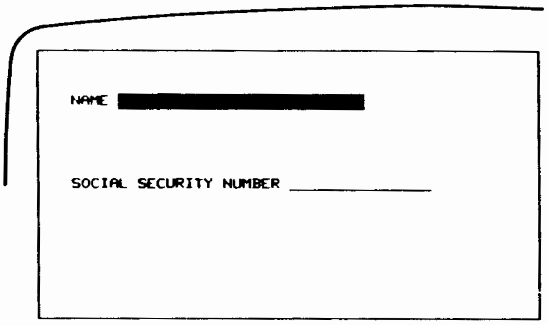
SOCIAL SECURITY NUMBER ?____________

In this case, variable Name$ equals JOHN DOE, IF#=2 and OF#=2.

If the program attempted to output the social security number, an error would result because OF# is greater than the number of output fields.

If no parameters are specified in the INPUT statement, it will put the program in the input state and wait for ⇧ to be pressed. No prompt is output. The input field pointer is not incremented. The INPUT statement should be followed by an ENTER statement in order for the program to receive the data input.

For example, assume a program uses the following form:

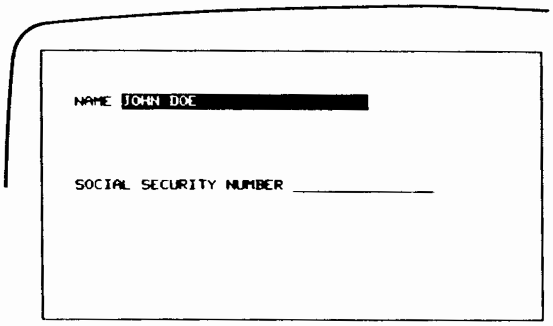


NAME

SOCIAL SECURITY NUMBER ____________

Before the form is used, IF#=1 and OF#=1.

When INPUT is executed, the cursor appears and the program waits for the operator to enter a name and press ⇧ .



NAME JOHN DOE

SOCIAL SECURITY NUMBER ____________

The IF#=1 and OF#=1, however, the program does not know the name that was entered.

The ENTER Statement

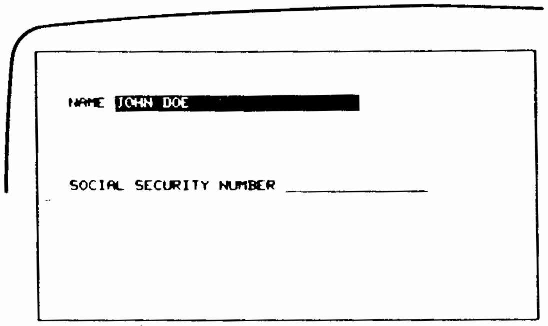
ENTER input list

ENTER inputs data from the display and continues program execution. The ENTER statement inputs the value of the current input field to the input list. The input field pointer is incremented. If there is more than one item in the input list, the next value, now pointed to by the input field pointer, is input and the input field pointer is again incremented.

For example, assume that this sequence is executed while the previous form is active:

```
 300   INPUT
 310   ENTER Name$
```

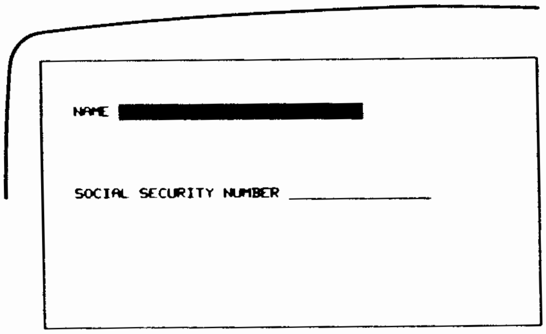
Before INPUT is executed, IF#=1 and OF#=1.



NAME JOHN DOE

SOCIAL SECURITY NUMBER ____________

After ENTER is executed, IF#=2, OF#=1 and Name$= JOHN DOE. But if the form appeared as follows immediately before the ENTER statement was executed (the input field is blank):



NAME

SOCIAL SECURITY NUMBER ____________

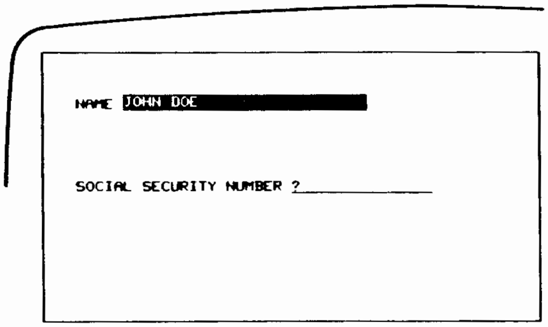
Then after the ENTER statement is executed IF#=2, OF#=1 and Name$=" " (equal number of blanks as in the field).

The DISPLAY and PRINT Statements

DISP display list
PRINT print list

Each statement outputs to the current output field and increments the output field pointer. If more than one item is in the list, the next item is output to the current output field and the output field pointer is incremented.

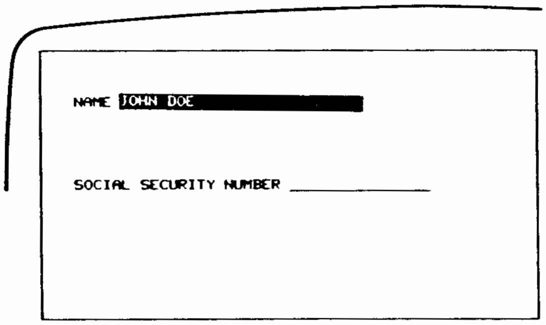
For example, assume that after the name is input, the program outputs the social security number. If an INPUT Name$ is used to input the name, the form looks as follows:



NAME JOHN DOE

SOCIAL SECURITY NUMBER ?

Since IF#=2 and OF#=2, you cannot use the DISP statement here. But, if the INPUT with no prompt is used, the form look as follows:

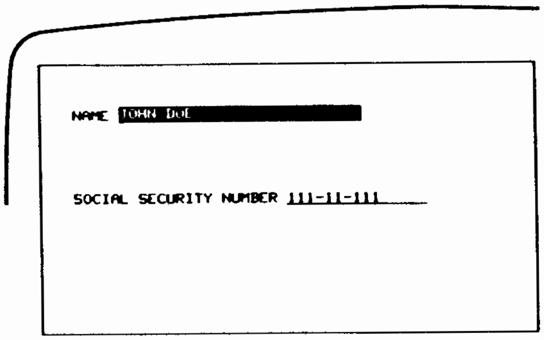


NAME JOHN DOE

SOCIAL SECURITY NUMBER

Since IF#=2 and OF#=1, the program can use the DISP statement .

```
160  DISP "111-11-1111"
```



NAME JOHN DOE

SOCIAL SECURITY NUMBER 111-11-111

Now IF#=2 and OF#=2.

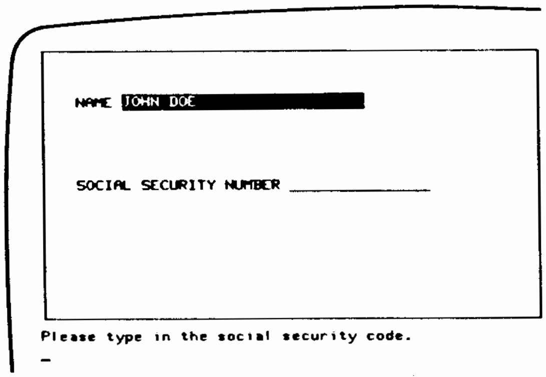
The LINE DISLAY Statement

LDISP display list

Moves the cursor to the first unprotected line following the form before outputting the display list. The output field pointer is not incremented.

Using the same example form shown previously, assume a program does not have a social security number for the name given, and wants the operator to type in a number. The program can use LDISP.

```
300  LDISP "Please type in the social security code."
```



NAME JOHN DOE

SOCIAL SECURITY NUMBER

```
Please type in the social security code.
_
```

After LDISP is executed, IF#=2 and OF#=1.

The LINE ENTER Statement

LENTER string variable

The LENTER statement immediately inputs the current line on the display and continues program execution. If the cursor is in the form, an error occurs. Execution of LENTER does not effect the field pointers.

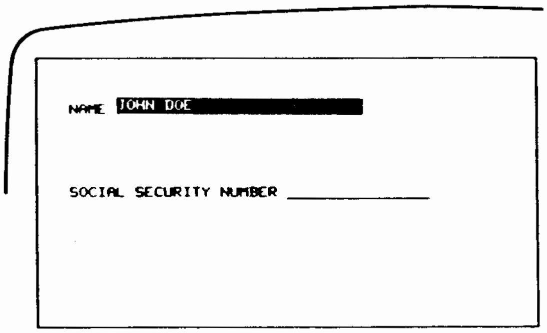
The LINE INPUT Statement

LINPUT["prompt" $\left\{\begin{matrix} ; \\ , \end{matrix}\right\}$] string variable

When executed, LINPUT moves the cursor to the first unprotected line following the form and outputs a line-output prompt. The entire line is returned when ⇧ is pressed. The input field pointer is not incremented.

In the two previous examples, you saw how one statement, LDISP, would output without effecting the form or form pointers and how another statement, LENTER, would input. Instead of using these two statements, the program could use LINPUT.

Assume the form and display looks as follows:



NAME JOHN DOE

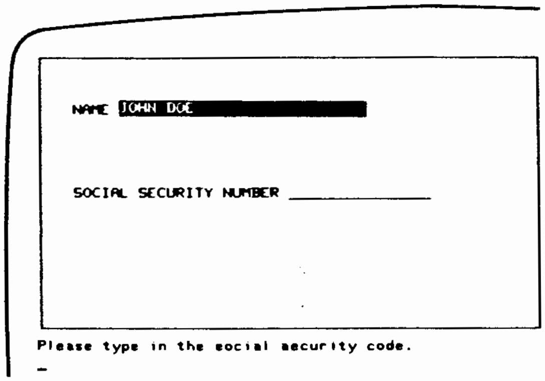
SOCIAL SECURITY NUMBER ______________

Now, IF#=2 and OF#=1.

The program executes the following statement.

```
100 LINPUT "please type in the social security code.",Ssnum$
```

The form and display become:



NAME JOHN DOE

SOCIAL SECURITY NUMBER ______________

Please type in the social security code.

_

Because a comma followed the prompt in the statement, the cursor moves to the next line. The operator types in a number and presses ⇧ . The IF#=2 and OF#=1.

If a semicolon (;) follows the LINPUT prompt, the cursor remains on the same line as the prompt. Then when ⇧ is pressed, the entire line, including the prompt, is assigned to Ssnum$.

TAB and ENTER

When the program is waiting for input, either ⇥ or ⇧ can be used. The ⇥ key moves the cursor from one input field to the next. It does not take the program out of the waiting state. The ⇧ key does not tab through the fields. It returns the program to the execution state. If the next statement is an input statement, the cursor is displayed in the next tab field and it appears that ⇧ has tabbed to the next input field.

CHAPTER 5

Forms Control

Five statements and a function are available to control use of forms:

GET FORM — Displays a new form on the screen.

CLEAR FORM — Erases the input and output fields and resets field pointers.

CURSOR — Sets a value for the input and/or output field pointers.

TFNUM — Returns the tab position of the cursor.

EXIT FORM — Breaks the link between the form and the program.

DELETE FORM — Erases the form from the display and breaks the program-form link.

An example program using these commands is shown at the end of this chapter.

The GET FORM Statement

The GET FORM statement displays a new form and loads the program-form linking information into memory. The syntax is:

```
GET FORM "form name [volume spec]"
```

Form name is the name of the form. Volume spec is a volume label or unit specifier.

When the form is displayed and the linking information is loaded, the form is active. To assure that only one form is active at a time, GET FORM performs an EXIT FORM before the new form is activated.

The program uses GET FORM to initially display a form to be used for input and output or to change from one form to another. Once a form is activated, all item input and output is done through that form. (Item input and output is done with the INPUT, ENTER, DISP and PRINT statements.) Line output and input (LDISP, LENTER and LINPUT) is done outside the form image and does not affect the form pointers.

The CLEAR FORM Statement

The CLEAR FORM statement clears the input and output fields of the current form. Use CLEAR FORM to reuse a form for further input and output. The syntax is:

```
CLEAR FORM
```

When CLEAR FORM is used, the form on the display remains as is; only the input and output fields are erased.

Execution of this statement resets the field pointers to the first input field and first output field of the form. The cursor is placed in the upper-left corner of the form. The form remains active and the link between program and form is not altered.

The CURSOR Statement

Use the CURSOR statement whenever an input or output operation is wanted in a particular field that is out of the order specified when the form was created.

The CURSOR statement can be used to set values for the input and output field pointers via the IF# (Input Field number) and OF# (Output Field number) parameters. The cursor can be set to a particular input field with the CF# parameter.

Cursor parameters are introduced in the Output Operations chapter in the BASIC Programming Manual. However, when a form is active, some additional parameters can be used. The general syntax of these parameters is:

```
CURSOR[; IF#numeric expression][; CF# numeric expression]
                                        [; OF# numeric expression]
```

The IF# parameter sets the input field pointer to the value specified in the numeric expression following IF#. When the next input operation is executed, the cursor is moved to the first character of that field. OF# sets the output field pointer to the value specified in the numeric expression following OF#. When the next output operation is executed, the cursor moves to that output field.

For example, to set the input field pointer to input field number 20 and the output field pointer to output field number 5:

```
CURSOR IF#20,OF#5
```

The CF# parameter is normally used with the IF# parameter. Using CF# causes the cursor to move to the specified input field rather than to the field specified in the IF# expression.

For example, assume the program determines that a given input is incorrect and that the user must re-enter the information in that field. The IF# parameter could be used to set the input field pointer and the cursor to the incorrect field. However, the user may use ⏎ to move the cursor and correct another field. The program would not receive this change. A better way is for the program to set the IF# equal to one and CF# to the incorrect field. Then the cursor would move to the incorrect field and the input field number is one. After the user enters any information, the program rereads all the input fields.

TFNUM Function

The function TFNUM returns the tab field number of the current tab position. It returns zero if the form is not active, or before the first position. A program can use this to test if the operator has filled in all the fields of the form. For example:

```
 10   INPUT
 20   IF TFNUM<4 THEN 10
 30   ENTER A(1),A(2),A(3),A(4)
```

The user presses ⇧ to tab to each field. Pressing ⇧ in the last field will cause line 30 to be executed.

The EXIT FORM Statement

The EXIT FORM statement breaks the link between the active form and the program. The syntax is:

```
EXIT FORM
```

The cursor is moved to the first character of the first line after the form. The form is no longer active.

After EXIT FORM is executed, the form is still displayed, but further input and output operations do not use it. The lines of the form are unprotected.

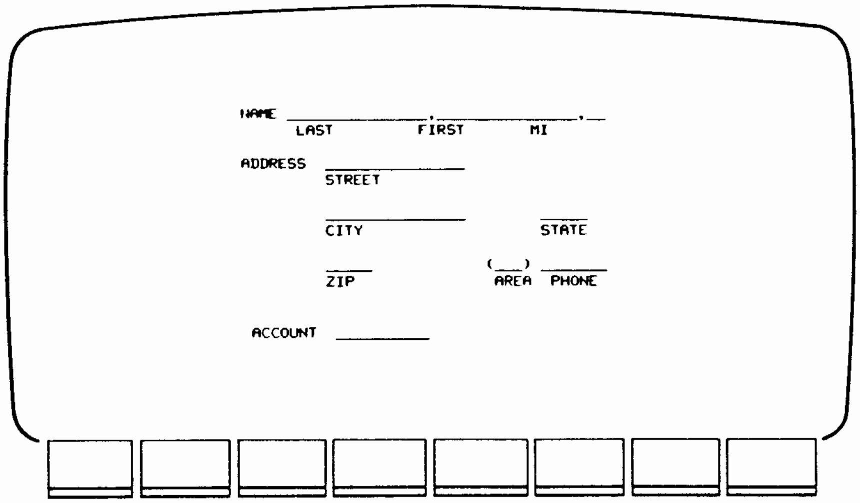
The DELETE FORM Statement

The DELETE FORM statement breaks the link between the active form and the program. In addition, it erases the form from the display. The syntax is:

```
DELETE FORM
```

Example Program

When this program is run, it displays a form and asks the operator to fill it in. When ⇧ is pressed, the program checks that the zip code, area code and phone fields have been filled in with numbers. If not, the program resets the cursor and asks that the field be re-entered. The program uses a form that looks as follows:



```
NAME ______________,______________,__
      LAST           FIRST         MI

ADDRESS ______________
        STREET

        ______________          _____
        CITY                    STATE

        _____              (___) _______
        ZIP                AREA  PHONE

 ACCOUNT __________
```

```
10   !      The form is stored in file "NEWCUS".
20   !      The input fields are name, address and phone.
30   !      The output field is account.
40   !      The customer information is stored in a file called "CUSTMR"
50   !      The first record contains the next account number to be used.
60   !
70   !      Begin program
80   !
90          OPTION BASE 1
100         DIM A$(10)[20],B$[80],C$[200]
110         ASSIGN #1 TO "CUSTMR,FILES"
120  !
130         GET FORM "NEWCUS,FILES"
140  !
150  Input:  INPUT
160         IF TFNUM()9 THEN GOTO 150
170             ENTER A$(*)
```

```
180 !
190 A:     IF (A$(7)>"99999") OR (A$(7)<"00000") THEN GOTO Zip
200 B:     IF (A$(8)>"999") OR (A$(8)<"000") THEN GOTO Area
210 C:     IF (A$(9)>"9999999") OR (A$(9)<"0000000") THEN GOTO Phone
220 !
230        READ #1,1;Acc
240        PRINT Acc
250        B=Acc+1
260        PRINT #1,1;B
270        A$(10)=VAL$(Acc)
280 !
290        FOR I=1 TO 10
300          C$=C$&A$(I)
310        NEXT I
320 !
330        PRINT #1,B;C$
340        LDISP "DO YOU WANT TO ADD ANOTHER CUSTOMER?"
350        LINPUT B$
360 !
370        IF (B$[1]<"Y") OR (B$[1]>"Y") THEN GOTO End
380 !
390        C$=" "
400        CLEAR FORM
410        GOTO Input
420 !
430 Zip:   LDISP "YOU HAVE ENTERED AN INCORRECT ZIP CODE. PLEASE RE-ENTER."
440        CURSOR IF#1,CF#7
450        GOTO Input
480 !
490 Area:  LDISP "YOU HAVE ENTERED AN INCORRECT AREA CODE. PLEASE RE-ENTER."
500        CURSOR IF#1,CF#8
510        GOTO Input
540  !
550 Phone: LDISP "YOU HAVE ENTERED AN INCORRECT PHONE NUMBER."
560        LDISP "PLEASE RE-ENTER"
570        CURSOR IF#1,CF#9
580        GOTO Input
610  !
620  !     End of program
630  !
640 End:   EXIT FORM
650        ASSIGN #1 TO *
660        END
```

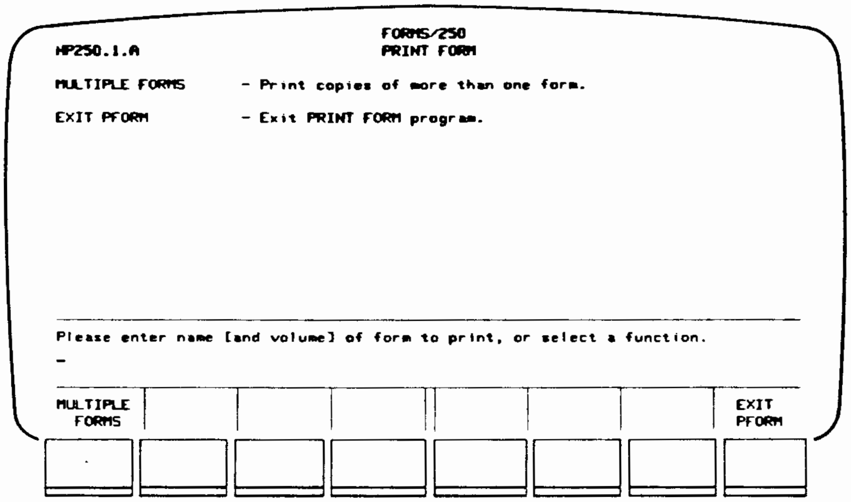
CHAPTER 6

Printing Forms

To print a form, use the PFORM (print form) program. PFORM is supplied on SYSTEM discs beginning with software revision 1C. To run PFORM, load the Operating System Disc in the default drive and execute:

```
RUN"PFORM"
```

The initial PFORM menu asks for the name of the form to be printed:

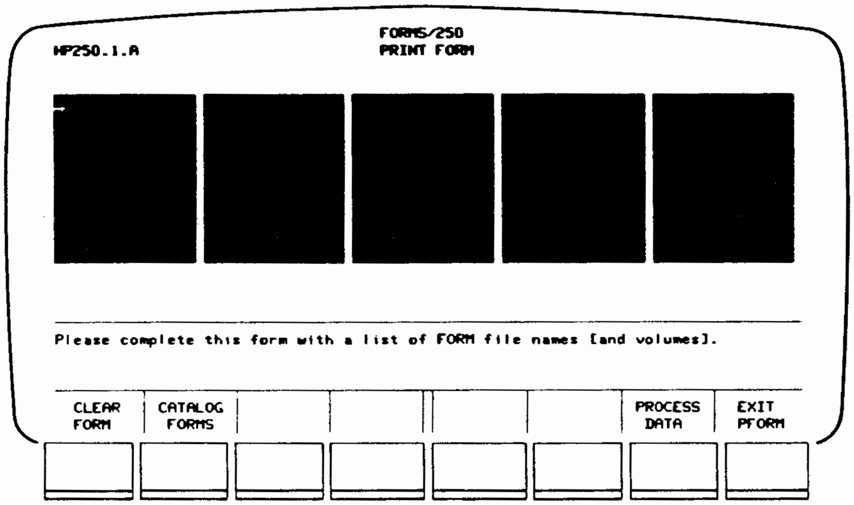


```
                                FORMS/250
HP250.1.A                       PRINT FORM

MULTIPLE FORMS       - Print copies of more than one form.

EXIT PFORM           - Exit PRINT FORM program.



Please enter name [and volume] of form to print, or select a function.
_
```

To print copies of one form, enter its file name and optionally its volume. Then skip the next section and read Printer Selection. If copies of more than one form are to be made, press MULTIPLE FORMS.

Multiple Forms

When MULTIPLE FORMS is pressed, the following menu is displayed to allow you to enter one or more form file names.



HP250.1.A

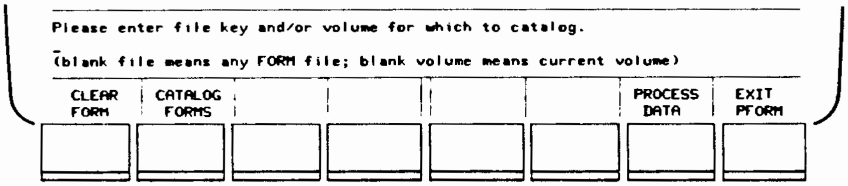
FORMS/250
PRINT FORM

Please complete this form with a list of FORM file names [and volumes].

You may enter each file name and volume or press CATALOG FORMS to display selected file names automatically.

CLEAR FORM – clears the form for new entries.

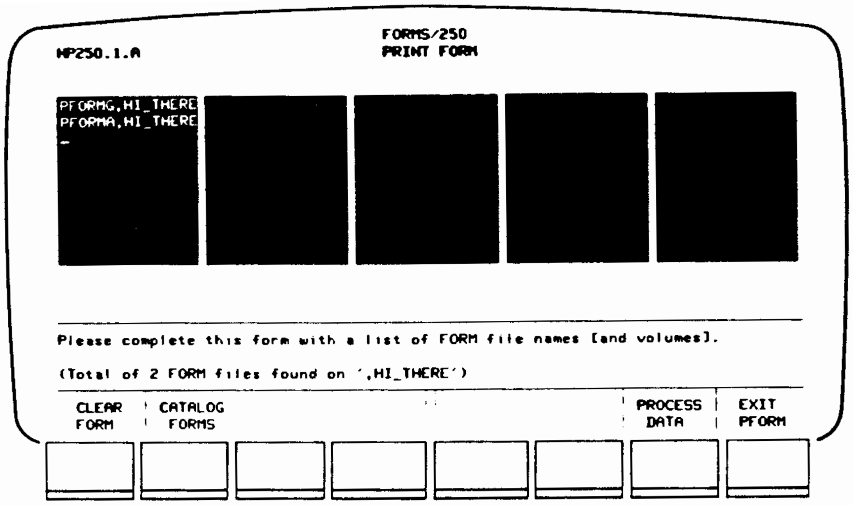
CATALOG FORMS – asks for a file key (first letter(s) of the file name) and/or a volume.



Please enter file key and/or volume for which to catalog.

(blank file means any FORM file; blank volume means current volume)

If only a volume is specified, either a comma precedes the volume name or a colon precedes a unit specifier. A blank volume indicates the current MSI. All form files with the correct file key and on the specified volume are displayed.



```
HP250.1.A                        FORMS/250
                                 PRINT FORM

PFORMG,HI_THERE
PFORMA,HI_THERE
_

Please complete this form with a list of FORM file names [and volumes].

(Total of 2 FORM files found on ',HI_THERE')
```

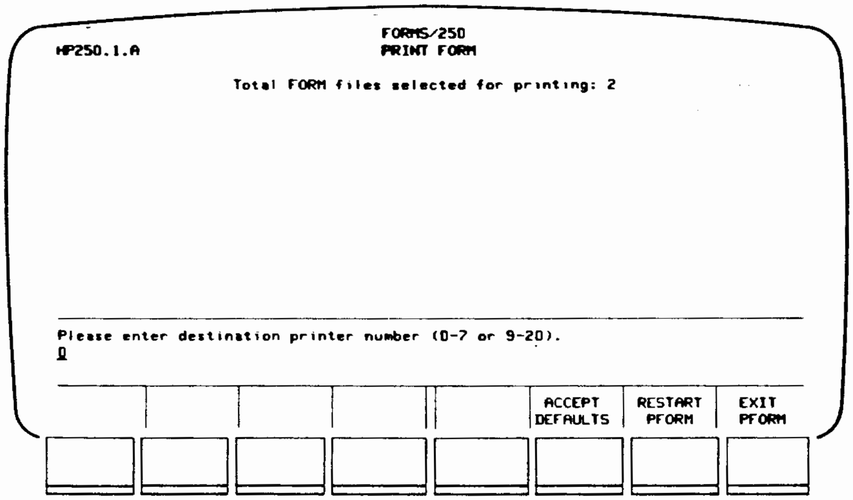
You may use the edit keys (CLEAR, INSERT, etc.) to add or delete files from the list.

PROCESS DATA – when the list is complete press this softkey. A new menu is displayed for printer selection.

EXIT PFORM – exits the program without printing any forms.

Printer Selection

After one or more form names are entered, PFORM allows you to choose a printer.



```
HP250.1.A                        FORMS/250
                                 PRINT FORM
                  Total FORM files selected for printing: 2

Please enter destination printer number (0-7 or 9-20).
0
```

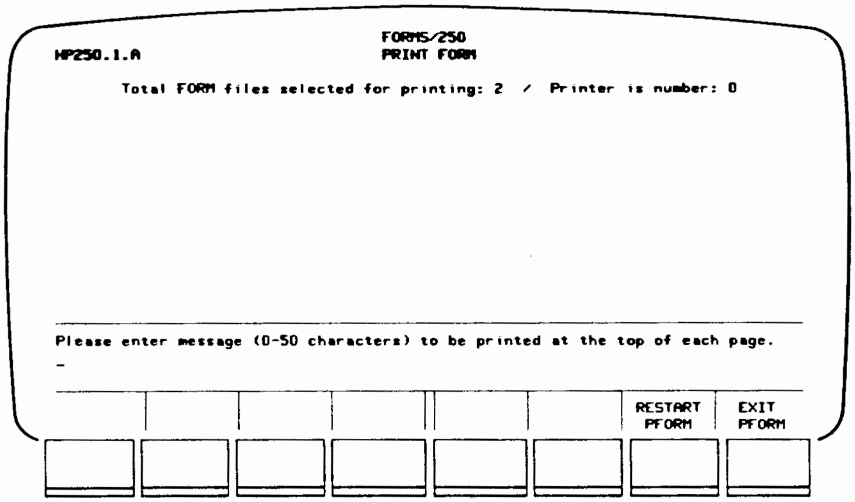
Enter the printer's device address. Note that forms cannot be printed on the CRT. (To view the form on the CRT use MFORM.)

ACCEPT DEFAULTS – immediately prints one copy of the form using default fill characters but without headers. The Without Order version is printed (refer to VERSION SELECTION). If you run PFORM and change the defaults then return to this menu, the current defaults are those you set. Exiting the program resets the defaults.

RESTART PFORM – returns to the multiple forms menu.

EXIT PFORM – exits the program without printing any forms.

Once the printer is selected, you may also enter a message to be printed along with the form at the top of every page.



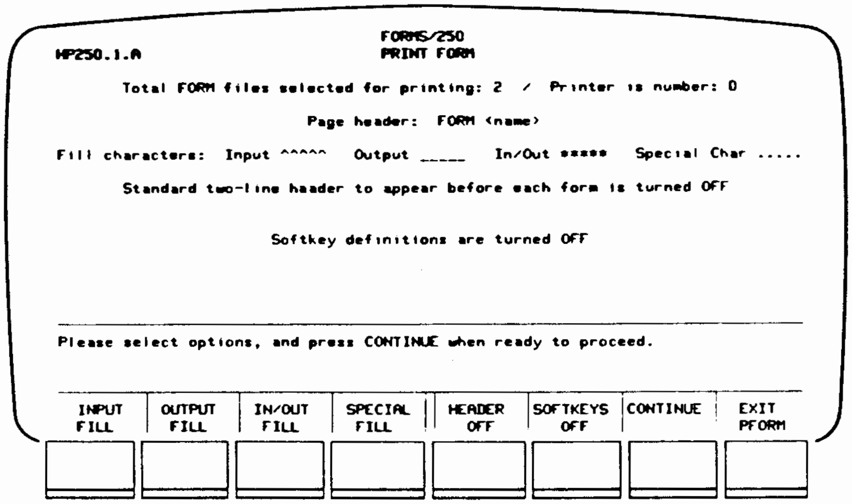
```
                              FORMS/250
HP250.1.A                     PRINT FORM

     Total FORM files selected for printing: 2  /  Printer is number: 0

Please enter message (0-50 characters) to be printed at the top of each page.
_
```

Display Enhancements and Fill Characters

When the form is displayed on the CRT, special characters such as the line drawing set are used to enhance the form. Most printers cannot print these characters, so an alternate character may be selected. If a character other than blank is selected, that character replaces all special characters. (A special character is any character which is not on the local language keyboard.) If a blank is specified for special characters, the printer will attempt to print all special characters.

You may also select a character to be used as a fill character for the different types of fields. If a blank is entered, blanks are printed.

After the printer and message are selected, the following menu allows these character selections.



```
                                    FORMS/250
HP250.1.A                           PRINT FORM

       Total FORM files selected for printing: 2  /  Printer is number: 0

                         Page header:  FORM <name>

Fill characters:  Input ^^^^^   Output _____   In/Out *****   Special Char .....

       Standard two-line header to appear before each form is turned OFF


                     Softkey definitions are turned OFF




Please select options, and press CONTINUE when ready to proceed.
```

The default values for all fill characters are shown on the menu.

INPUT FILL – changes the default input field fill character.

OUTPUT FILL – changes the default output field fill character.

IN/OUT FILL – changes the default input/output field fill character.

SPECIAL FILL – changes the default character which appears anywhere on the form (except in fields) where a non-printable character appears.

HEADER OFF – enters or modifies a two-line header to be printed above each form. The softkey definition changes to HEADER ON. If pressed a second time, it returns to its initial definition.

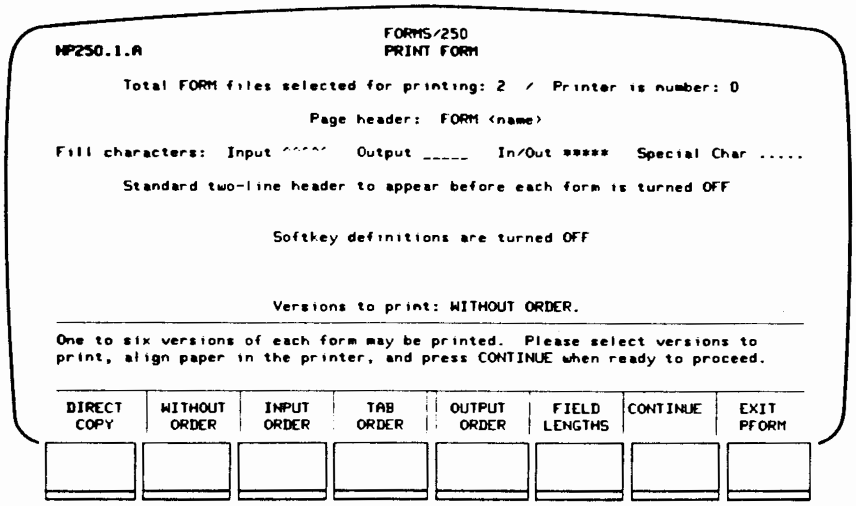
SOFTKEYS OFF – enters softkey definitions to be printed below each form.

CONTINUE – selects the versions of the forms to be printed.

EXIT PFORM – exits the program without printing any forms.

Version Selection

After the fill options are selected, pressing CONTINUE displays:



```
                                    FORMS/250
HP250.1.A                           PRINT FORM

        Total FORM files selected for printing: 2  /  Printer is number: 0

                          Page header:  FORM <name>

Fill characters:  Input ^^^^^   Output _____   In/Out *****   Special Char .....

        Standard two-line header to appear before each form is turned OFF


                      Softkey definitions are turned OFF


                      Versions to print: WITHOUT ORDER.
--------------------------------------------------------------------------------
One to six versions of each form may be printed.  Please select versions to
print, align paper in the printer, and press CONTINUE when ready to proceed.
```

Select the versions of the form to be printed.

DIRECT COPY – prints a copy as it appears on the CRT. Any enhancements which cannot be printed are left out. No additional enhancements or fill characters are added.

WITHOUT ORDER – prints a copy using any fill characters or special character specified. This is the default copy which is printed if ACCEPT DEFAULTS is pressed.

INPUT ORDER – the fill characters and the special character specified are used. A number is placed in each input field to indicate the input order. If the number has more digits than the field length, no number is placed in the field.

TAB ORDER – the fill characters and the special character specified are used. A number is placed in each input field to indicate the tab order. If the number has more digits than the field length, no number is placed in the field.

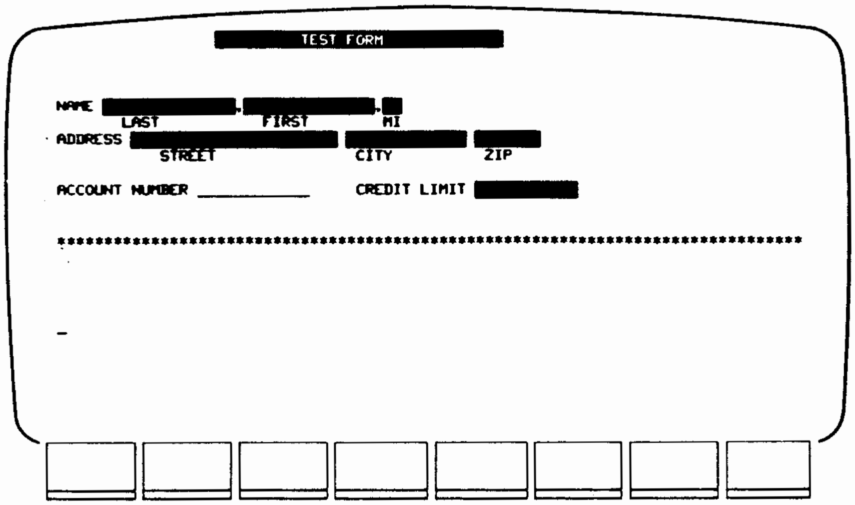
OUTPUT ORDER – the fill characters and the special character specified are used. A number is placed in each output field to indicate the output order. If the number has more digits than the field length, no number is placed in the field.

FIELD LENGTH – the fill characters and the special character specified are used. A number is placed in each field to indicate its length.

CONTINUE – causes printing to begin.

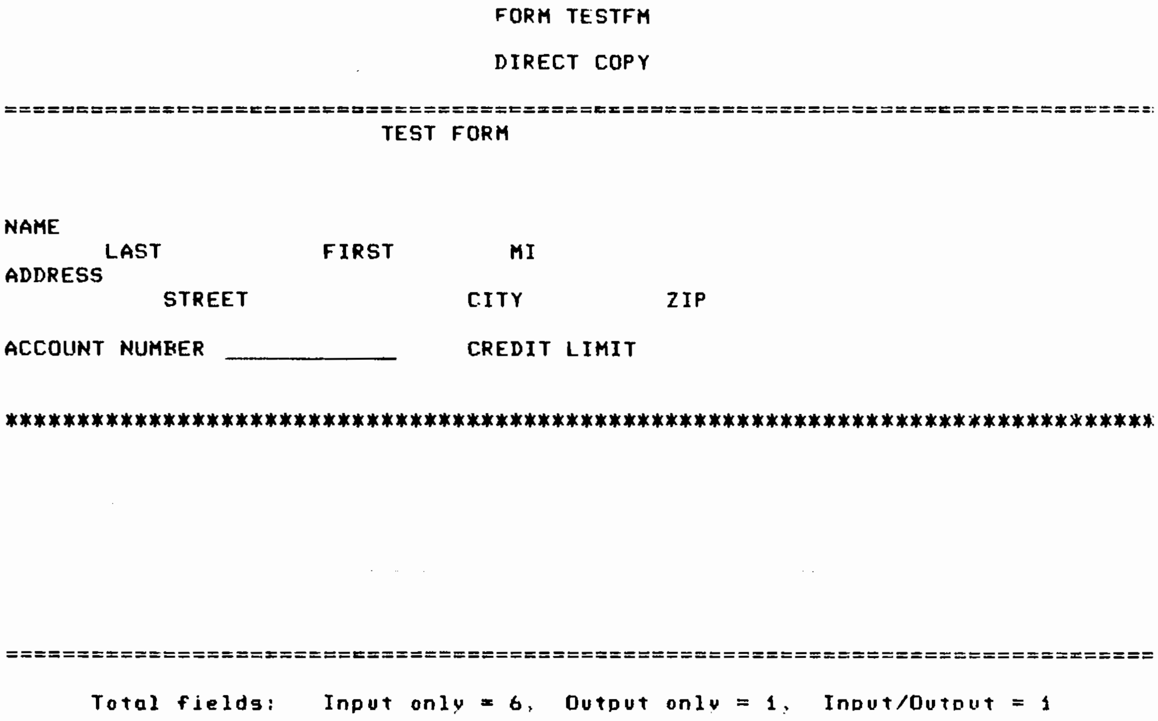
EXIT PFORM – exits the program without printing any forms.

Example Forms



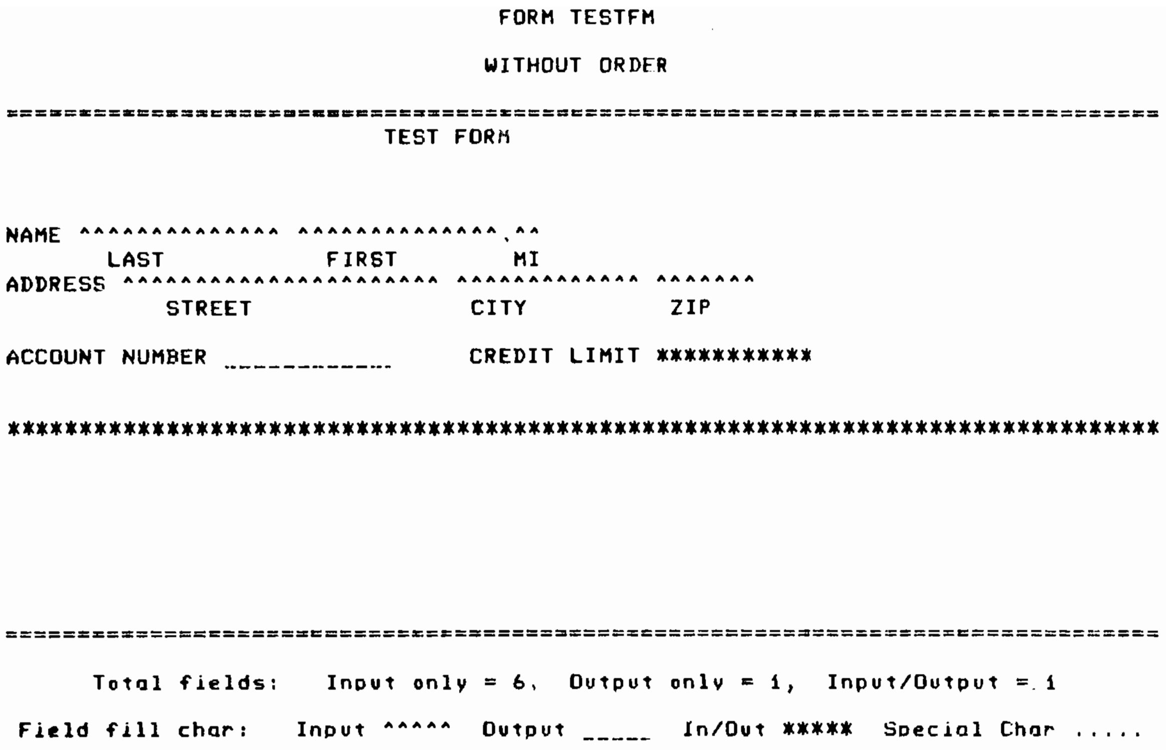
```
                         TEST FORM

NAME                    .                 .
          LAST               FIRST          MI
ADDRESS
              STREET                 CITY           ZIP

ACCOUNT NUMBER ___________        CREDIT LIMIT

********************************************************************************


_
```

Example Form



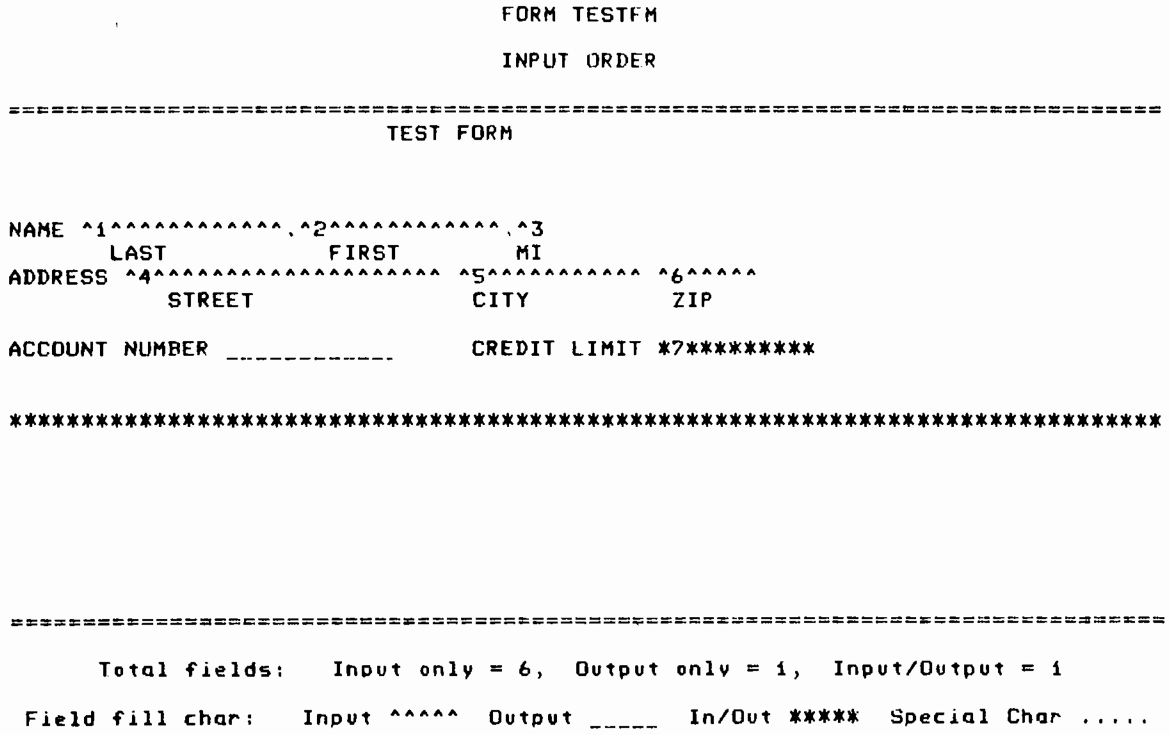
```
                              FORM TESTFM

                              DIRECT COPY
================================================================================
                         TEST FORM


NAME
       LAST           FIRST        MI
ADDRESS
           STREET              CITY          ZIP

ACCOUNT NUMBER ____________    CREDIT LIMIT

********************************************************************************





================================================================================
      Total fields:   Input only = 6,  Output only = 1,  Input/Output = 1
```

Direct Copy



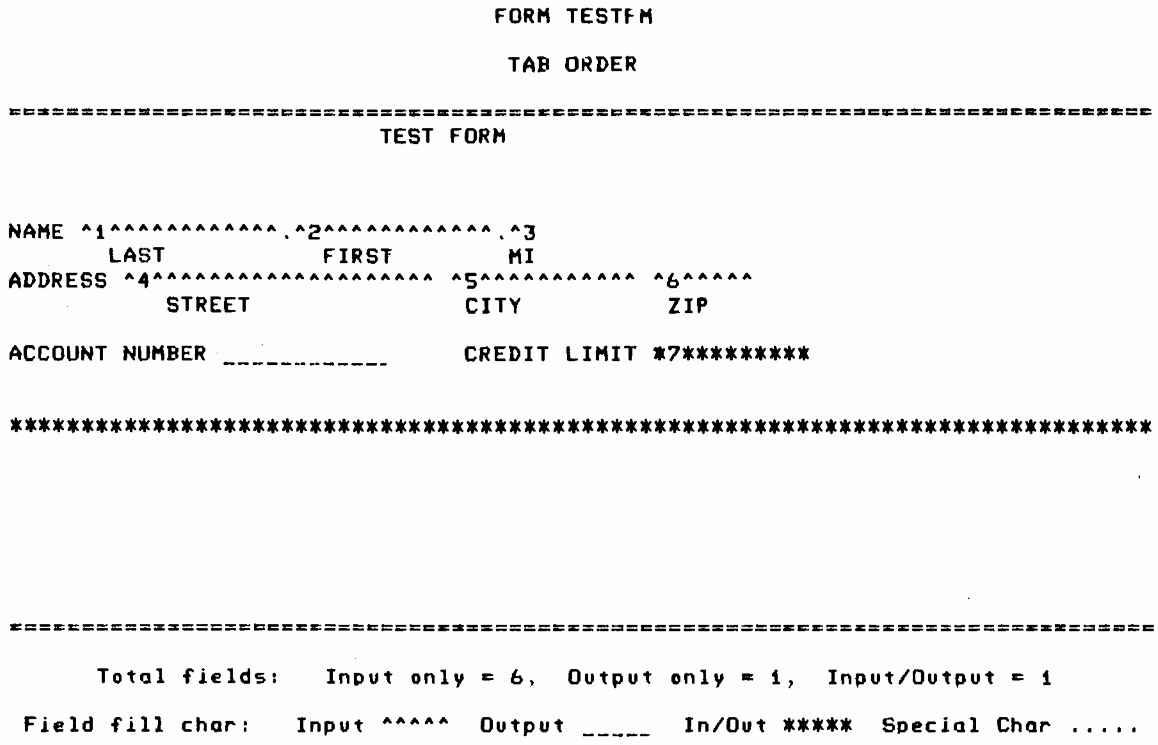
```
                                  FORM TESTFM

                                 WITHOUT ORDER

================================================================================
                          TEST FORM



NAME ^^^^^^^^^^^^^^ ^^^^^^^^^^^^^^,^^
       LAST           FIRST        MI
ADDRESS ^^^^^^^^^^^^^^^^^^^^^^ ^^^^^^^^^^^^^ ^^^^^^^
           STREET               CITY          ZIP

ACCOUNT NUMBER ____________     CREDIT LIMIT ***********

********************************************************************************






================================================================================

      Total fields:   Input only = 6,  Output only = 1,  Input/Output = 1

 Field fill char:   Input ^^^^^  Output _____  In/Out *****  Special Char .....
```

Without Order



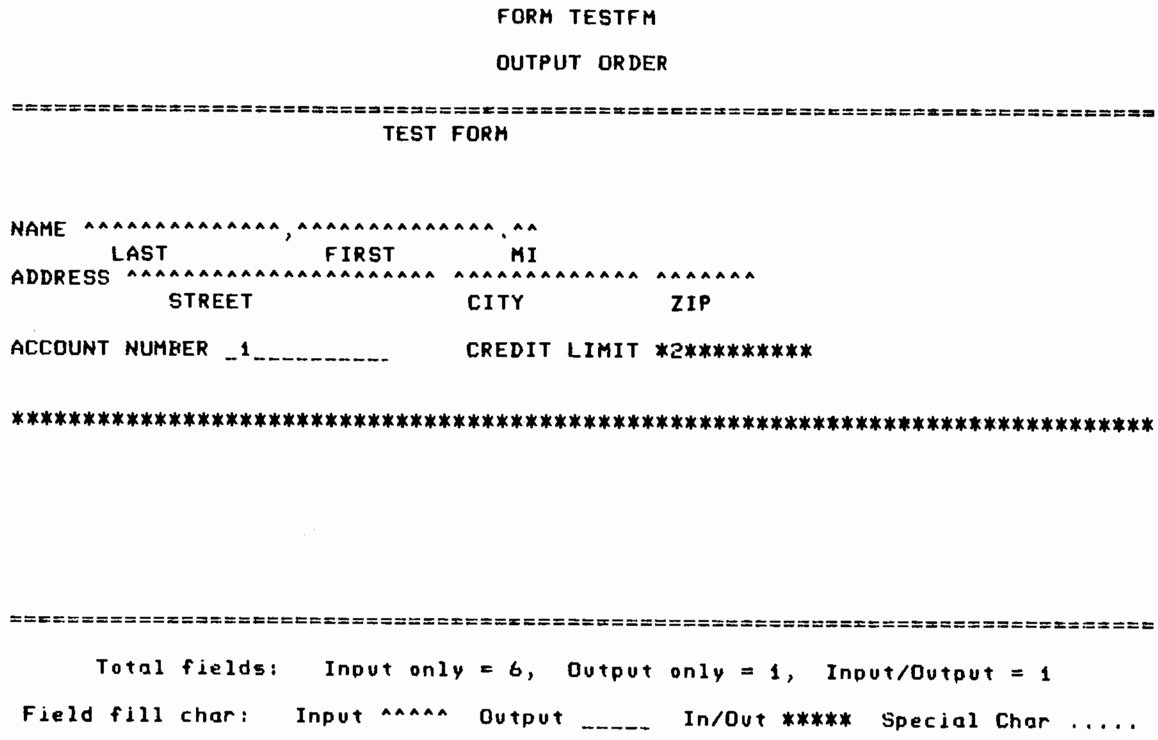
```
                                  FORM TESTFM

                                  INPUT ORDER

================================================================================
                          TEST FORM



NAME ^1^^^^^^^^^^^^,^2^^^^^^^^^^^^,^3
       LAST           FIRST        MI
ADDRESS ^4^^^^^^^^^^^^^^^^^^^^ ^5^^^^^^^^^^^ ^6^^^^^
           STREET               CITY          ZIP

ACCOUNT NUMBER ____________     CREDIT LIMIT *7*********

********************************************************************************






================================================================================

      Total fields:   Input only = 6,  Output only = 1,  Input/Output = 1

 Field fill char:   Input ^^^^^  Output _____  In/Out *****  Special Char .....
```

Input Order



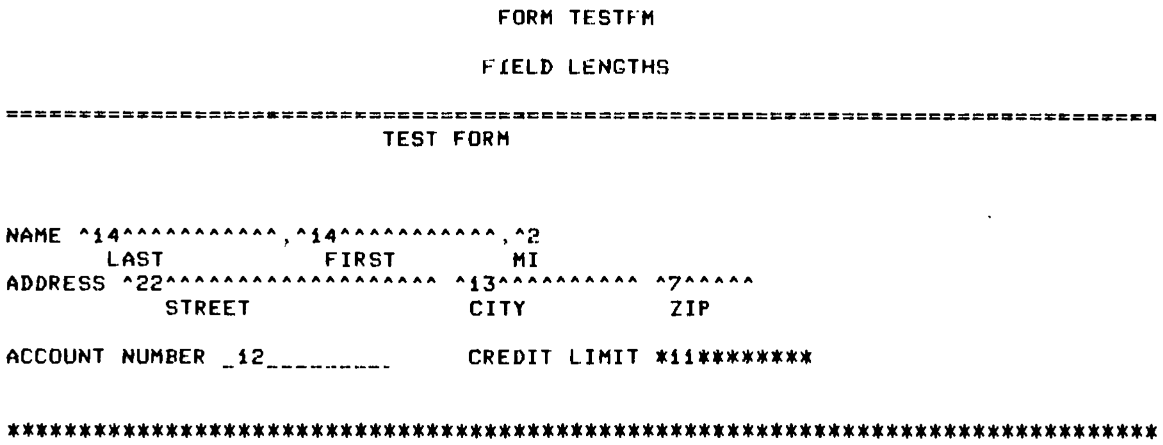
```
                                 FORM TESTFM

                                  TAB ORDER

============================================================================
                         TEST FORM


NAME ^1^^^^^^^^^^^^^.^2^^^^^^^^^^^^^.^3
       LAST          FIRST          MI
ADDRESS ^4^^^^^^^^^^^^^^^^^^^^^^ ^5^^^^^^^^^^^^ ^6^^^^^^
          STREET                 CITY          ZIP

ACCOUNT NUMBER ____________      CREDIT LIMIT *7**********

****************************************************************************




============================================================================

     Total fields:   Input only = 6,  Output only = 1,  Input/Output = 1

 Field fill char:   Input ^^^^^  Output _____  In/Out *****  Special Char .....
```

Tab Order



```
                                 FORM TESTFM

                                OUTPUT ORDER

============================================================================
                         TEST FORM


NAME ^^^^^^^^^^^^^^^,^^^^^^^^^^^^^^^.^^
       LAST          FIRST          MI
ADDRESS ^^^^^^^^^^^^^^^^^^^^^^^^ ^^^^^^^^^^^^^^ ^^^^^^^^
          STREET                 CITY          ZIP

ACCOUNT NUMBER _1__________      CREDIT LIMIT *2**********

****************************************************************************




============================================================================

     Total fields:   Input only = 6,  Output only = 1,  Input/Output = 1

 Field fill char:   Input ^^^^^  Output _____  In/Out *****  Special Char .....
```

Output Order



```
                                  FORM TESTFM

                                 FIELD LENGTHS

================================================================================
                          TEST FORM


NAME ^14^^^^^^^^^^^,^14^^^^^^^^^^^,^2
       LAST           FIRST       MI
ADDRESS ^22^^^^^^^^^^^^^^^^^^^ ^13^^^^^^^^^^ ^7^^^^^
           STREET               CITY          ZIP

ACCOUNT NUMBER _12_________     CREDIT LIMIT *11********

********************************************************************************
```

Field Lengths

Printing Forms

Printing begins by pressing CONTINUE on the version selection menu. The forms are printed in the order specified. All selected versions of one form are printed before the next form is printed. While the forms are being printed the softkeys are defined as follows:

RESTART PFORM – returns to the multiple forms menu. All forms which have not been printed are listed.

EXIT PFORM – terminates PFORM.

After the forms are printed, the initial menu is displayed. You may enter another form name or exit PFORM by pressing EXIT PFORM.

Errors

If an error (such as the form is not found) occurs during printing, the form name is displayed along with the error message. You may enter a correction (such as a different volume name) or press the softkey labeled SKIP FORM. Error messages are described in Appendix A.

APPENDIX A

Error Messages

The error messages that can occur when using the CFORM (create form) or MFORM (modify form) programs are listed below. Note that this list does not include operating system errors, which are listed in the System Operators Guide.

DRIVE IS WRITE-PROTECTED – You have tried to write to a device that is protected. The WRITE tab is removed from the flexible disc plastic cover or the protect switch is set on the hard disc. Specify another medium for the write operation.

FIELD BEYOND COLUMN 255 – A field cannot begin after column 255.

FIELD DELETED ILLEGALLY – This error occurs during MFORM if you delete a field with the editing keys. This error causes the program to terminate. There is no recovery.

FIELD MOVED OR DELETED – This error occurs during CFORM if the system cannot find the field you are trying to indicate.

FIELD WILL NOT FIT ON LINE – You are trying to move a field to a position where the end of the field will be off the screen. Pick a new location and move the field there.

FILE "filename" **ALREADY EXISTS** – You have tried to store a form into a file that already exists. You can purge the old file and store the form, or store the form in another file or with the same name on a different volume. This error only occurs from the CFORM program.

FILE "filename" **IS NOT A FORM** – You specified a file that did not contain a form. Exit the program and execute a CAT command to list the files currently stored.

FORM LIMITED TO 255 LINES – The maximum size of a form image is 255 lines. If a larger form is necessary, use two forms.

HALT – If you press HALT the program will terminate, the screen will clear and the message CREATE (or MODIFY) FORM TERMINATED will appear.

ILLEGAL FIELD OVERLAP – You are trying to move a field to a position where it would overlap another field. You must pick a new location to which to move the field.

ILLEGAL FIELD OVERLAP – You are trying to move a field to a position where it would overlap another field. You must pick a new location to which to move the field.

ILLEGAL POSITION FOR IN/OUT FIELD – You are trying to move an input/output field to a location where there would be no non-field character before and after the input/output field. Pick a new location for the field.

IMPROPER FILE NAME – The name you specified is an illegal file name. A legal file name is six or less characters in length. It may contain any characters except ();,–".

IMPROPER FILL CHARACTER ENTERED – The system reserves some characters for its use (i.e., ⇦ , ↑ , ↖ , etc.). You cannot use these for fill characters.

IMPROPER PROGRAM ENTRY – You tried to enter a forms program at its entry point; CFRM, MFRM; and the program could not be found.

IMPROPER VOLUME LABEL OR MASS STORAGE UNIT SPECIFIER- – You specified a volume label or unit specifier with illegal characters. A volume name is a maximum of eight characters. A unit specifier has a syntax of:

:device type select code : device address : unit number

This syntax is completely described in the BASIC Programming Manual.

INCORRECT PROTECT KEY – You have given an incorrect protect code for the file you are trying to purge. If the protect code is not known, you cannot purge the file.

INSUFFICIENT FREE SPACE ON DISC – There is not enough space on the disc to store the form. Select another disc.

INVALID FIELD NUMBER – This error may occur during an ordering operation when a field contains an invalid number (i.e., 1.1.1). The cursor will go to the first offending field. Enter a valid number. Check that all other fields contain valid numbers and try the operation again.

NO DISC IN DRIVE – You specified a mass storage unit which has no disc at this time, or you gave a file name and no unit specifier which causes the system to use the standard mass storage device, but there is no disc there. You should replace the disc and enter the statement again.

NO FILE "filename" **EXISTS** – The system cannot find the file on the disc specified. If you used a unit specifier, try again with the volume label because the disc may have been replaced. Otherwise, exit the program and execute CAT, which lists the files currently stored.

OVERLAY FILE REVISION LEVEL CONFLICT – An earlier version of CFRM or MFRM was loaded during an overlay operation.

Please insert disc with CREATE (MODIFY) FORM program, then press ENTER – The CFORM and MFORM programs use subprograms which are contained on the disc. Load the disc and press ⇧. The program will continue.

POSITION WOULD JOIN TWO FIELDS – You are trying to move a field to a position where there would be no non-input or output field character between it and a like field. Two input fields must have at least one non-input field character between them, similarly for output fields.

POSSIBLE VOLUME LABEL CONFLICT DURING DISC OPERATION – The last time you accessed the storage unit the disc had a different label; that is, the disc has been replaced. This is a warning only.

PROGRAM FILE-OPERATING SYSTEM REVISION LEVEL CONFLICT – You tried to run a copy of a forms program intended for a different operating system revision than is currently being used.

PROGRAM FILE REVISION LEVEL CONFLICT – An earlier version of a forms program was loaded while the program was running.

SPECIFIED VOLUME NOT FOUND – The volume label you gave does not match the labels of the disc currently in the drives. Check that you entered the label correctly. Also check that the disc you want is loaded.

SYSTEM ERROR # xxx – An operating system error occurred while a forms program was running. Refer to the System Operators Guide for the meaning of these errors.

TOO MANY INPUT FIELDS – You have tried to create more than 200 input fields. If more fields are needed, use two forms.

TOO MANY OUTPUT FIELDS – You have tried to create more than 200 output fields. If more fields are needed, use two forms.

UNKNOWN MASS STORAGE DEVICE – The unit specifier you gave does not match that of a known device. Check that you entered the unit specifier correctly.

PFORM Error Messages

These error messages can occur when using PFORM:

A NUMBER 0-7 or 9-20 IS REQUIRED – a device address outside the acceptable range was entered.

BLANK INPUT NOT ALLOWED – a file name or device address must be entered.

CANNOT CONTINUE UNTIL AT LEAST ONE VERSION IS SELECTED – select at least one version of the form to be printed by pressing the appropriate softkey. Then press CONTINUE.

ENHANCEMENTS/SPECIAL CHARACTERS NOT ALLOWED – video enhancements and special characters cannot be output by most printers. Reenter using standard characters.

FATAL ERROR xxx **ENCOUNTERED** – xxx – an internal error occurred in the PFORM program. Note this error and report it to your service representative.

FILE IS OF WRONG TYPE (NOT FORM) – only form files can be printed using PFORM.

FILE NAME IS REQUIRED – a file name must accompany the volume specifier. To enter all forms on a volume, use the multiple forms menu.

FILE NAME TOO LONG – the file name must be six characters or less.

FILE NOT FOUND – the file was not found on the volume specified. If no volume was specified, the current mass storage volume was used.

GIVEN (OR DEFAULT) VOLUME NOT MOUNTED – a disc with the specified label was not found or there is no flexible disc in the disc drive. Mount a disc or specify a different volume.

ILLEGAL PROGRAM ENTRY – attempt to enter the PFORM program at its entry point, PFRM, and the program could not be found.

IMPROPER VOLUME NAME – a volume name has a maximum of eight characters.

MASS STORAGE ERROR <81-90> – the error codes 81 thru 90 are described in the System Operators Guide.

NO VOLUME MOUNTED ON <volume name> – the specified disc drive is empty. Mount the disc or choose another drive.

PFORM/PFRM REVISION NUMBER CONFLICT – PFORM and PFRM do not have the same revision number.

PRINTER IS MISSING, OF WRONG TYPE, DOWN, OR OFFLINE – check the status of the printer. RESET and switch the printer ON-LINE. Then re-enter the printer device address.

PROGRAM/OPERATING SYSTEM REVISION NUMBER CONFLICT – your copy of PFORM cannot run with the operating system revision currently loaded.

VOLUME NAME TOO LONG – a volume name has a maximum of eight characters.

VOLUME NOT FOUND – the volume name specified is not currently mounted in a drive.

APPENDIX B

Program Errors

Errors which may occur during execution of a program that uses a form are listed below.

290 NOT ALLOWED WHEN FORM IS ACTIVE – The operation the program is trying to perform could destroy the integrity of the form (i.e., protect lines, unprotect lines, etc.).

291 NOT ALLOWED WITHIN FORM IMAGE – The program is trying to modify the form (i.e., creating unprotected lines within the form).

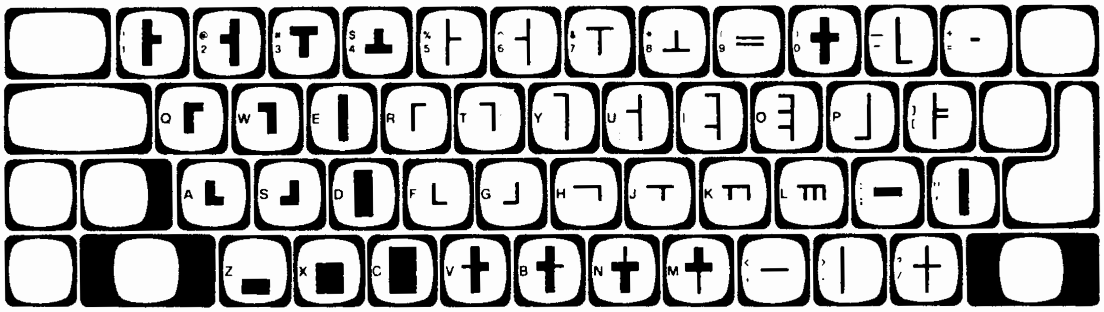
292 ATTEMPT TO INPUT AFTER LAST FIELD OF FORM – The input field pointer has a value greater than the number of input fields. The program can clear the form, use the CURSOR statement to reset the value of the input field pointer, or a line input statement could be used.

293 ATTEMPT TO OUTPUT AFTER LAST FIELD OF FORM – The output field pointer has a value greater than the number of output fields. The program can clear the form, reset the output field pointer with the CURSOR statement, or use a line output statement.

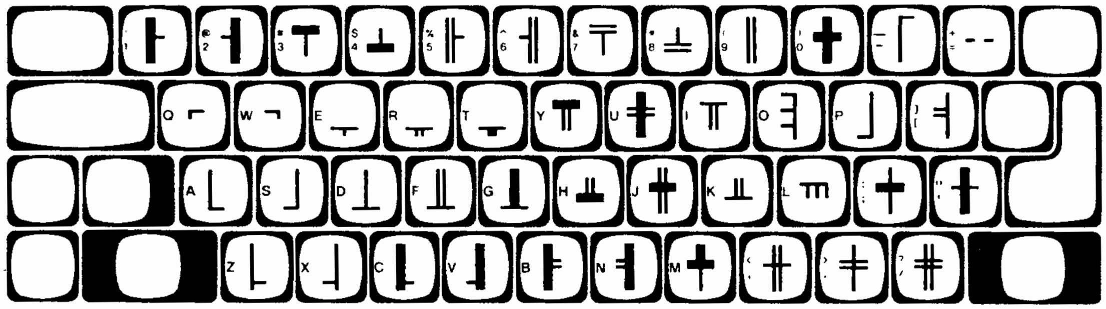
294 NOT ALLOWED UNLESS FORM IS ACTIVE – The program is trying to execute a statement that operates on a form (i.e., CURSOR IF#, CF#, or OF#) and no form is currently active.

APPENDIX C

Line-Drawing Sets



Primary Line-Drawing Keyboard



Shifted Line-Drawing Keyboard

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