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IBM 5110
Computing System

78-2

May, 1978

Our first IBM 5110 Newsletter introduced the features and functions of the IBM 5110 Computing System and compared these features, and performance, with the IBM 5100 Portable Computer. This issue, as will future issues, contains tips and techniques to help you use the many features of the IBM 5110 in your application.

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IBM 5110 NEWSLETTER

Ordering Your IBM 5110 Diskettes

IBM has announced a series of products for the IBM 5110 Computing System--the 512-byte diskette 2D, the 5110 customer convenience kit, and the fiftifile diskette storage device.

The 512-byte diskette 2D is a two-sided double density diskette initialized with 77 cylinders, 2 tracks per cylinder, 15 sectors per track. With 74 cylinders dedicated for data the diskette's capacity is 1,136,640 characters. IBM diskettes are packaged ten per box with a minimum order quantity of 10 diskettes. Pricing is quantity discounted. That is:

10-40	\$10.00 each
50-90	8.50 each
100 and over	8.00 each

Prices are FOB destination and are subject to change.

The 5110 customer convenience kit (part number 7032431) contains all the supplies necessary for your preinstallation testing and system start-up. For example, the kit contains:

- 30 each 512-byte diskette 2D, P/N 1669044 packaged in the newly announced fiftifile storage device.
- 12 each 5103 printer ribbons, P/N 1136653.
- 1 IRD forms ruler.
- 1 proofreading ruler.
- 1 flowchart template.
- 1 pad of printer spacing charts.

This kit is priced at \$368.00, FOB destination. If you buy one kit and at the same time sign an IBM supplies agreement for 50 or 100 diskettes, you can qualify for discount pricing in accordance with the annual agreement discount prices available under the terms and conditions of the IBM supplies agreement.

The IBM fiftifile, P/N 1669533, is an injection molded diskette file with a hinged protective top. It is an ideal diskette storage container and is used as standard packaging for diskettes shipped in customer convenience kits. It is also available as a stand-alone item at a cost of \$15.00.

The 5100 customer convenience kit can also directly support the 5110 account that does not use the 5114 diskette unit. The 5100 kit contains all the items listed for the 5110 kit except that 15 data cartridges are substituted for the 30 diskettes. IBM also markets the data cartridge (P/N 1608498) separately.

All IBM diskettes not shipped in a convenience kit are packaged ten diskettes to the box. The 10-pack box costs \$100.00 and also contains a package of blank labels in red, blue, yellow, green and gray colors. The 10-pack box (P/N 2305839) and the labels (P/N 2305833) are available as stand-alone items. The labels can be ordered in any one color, or in all five available colors, 30 to a box at a cost of \$.90 per box.

IBM diskettes are quantity discounted and family priced. The quantity discount is available for any type diskette, eg, diskette 1 (System/32 and 5110 use), diskette 2D (System/34 and 5110 use), and the price can be based upon your annual usage.

The family pricing concept is designed for customers using more than one type diskette (diskette 1, 2, or 2D) in their installation. You receive a quantity discount based on your total diskette needs of any type. This is a real cost benefit if you use a small quantity of one diskette, eg, 10 each diskette 1, and a larger quantity of another type diskette, eg, 90 each diskette 2D. Your price is based on the 100 quantity level.

Diskette, data cartridge, ribbon, convenience kit, and accessory item pricing is available from your local IBM marketing representative.

A COOKBOOK APPROACH TO FULL SCREEN USE

The following rules serve as an easy guide to full screen use. There are of course other techniques which will work.

STEP 1: Issue an OPEN to the screen.

ex. 10 OPEN FILE FL1,'002',ALL

notes: '002' and ALL allow for full screen

STEP 2: Issue one (and only one) WRITE FILE statement which fills the screen with all questions to be asked and (very important!) positions the cursor for the next statement which will read the data.

ex. 20 WRITEFILE USING 30,FL1,'FIELD1','FIELD2','FIELD3'
30 FORM POS20,C,POS84,C,POS148,C,POS35

At this point, the screen looks like this:

```

      |-----|
LINE1 | (pos 20 →) FIELD1          - (← pos 35)
LINE2 | FIELD2
LINE3 | FIELD3
LINE4 |
```

STEP 3: Issue a READ FILE to read in FIELD1.

ex. 40 READ FILE USING 50,FL1,N\$
50 FORM POS35,C20

STEP 4: Issue a REWRITE FILE to position the cursor for the next READ FILE. To accomplish this you must force something to write, in this case a redundant blank to the last position on the screen (896).

ex. 60 REWRITE FILE USING 70,FL1,' '
70 FORM POS896,C1,POS99

STEP 5: Issue a READ FILE to read in FIELD2.

ex. 80 READ FILE USING 90,FL1,A\$
90 FORM POS99,C20

STEP 6: Issue a REWRITE FILE as in STEP 4 to position the cursor.

```
ex. 100 REWRITE FILE USING 110,FL1,' '  
     110 FORM POS896,C1,POS163
```

STEP 7: Issue a READ FILE as in STEP 5 to read FIELD3

```
ex. 120 READ FILE USING 130,FL1,C$  
     130 FORM POS163,C20
```

REMEMBER:

- Cursor positioning is done by the WRITE or REWRITE FILE statement. The READ FILE statement reads from the position on the screen you tell it paying no attention to where the cursor is. It is the programmer's responsibility to tie the two together.
- Do not use the PAUSE statement as a debugging tool; it causes the screen to scroll up one line. A good alternative for tracking program execution is to liberally insert PRINT FLP, 'NOW AT LINE XXXX' statements.
- A WRITE FILE statement clears the screen before the write begins.
- Only a READ FILE can be directed to the screen after a WRITE FILE.

SOME QUESTIONS--WITH ANSWERS AND TIPS

Q: How can I determine the initialized format of a diskette?

A: LOAD your customer support program. Then enter LINK 7, (device address) to call the label display program. Now refer to pages 39-42 in your Customer Support Reference Manual for the run instructions and an explanation of the output. If you only need to know the sector size, simply enter UTILVOLID and look at the last line on the screen.

TIP: You cannot LOAD or SAVE a program, or SORT data, on a diskette with 1024 sector size (format 9, diskette 2D).

Q: How can I quickly load a master and index file?

A: Write your records in order by key. For example, assume you have 512 sector 2D diskette and 400 32-byte records written and key field is 4 bytes. It takes 10 minutes and 40 seconds when records are not ordered by key, and only 35 seconds when records are ordered by key.

TIP: If you want more information about the file handling capabilities of the IBM 5110, please read pages 167-176 of your BASIC User's Guide, form SA21-9307.

Q: When using the WRITE FILE USING statement, how can I add additional fields to the record when the number of variables needed to fill the record won't fit on the WRITE FILE USING line?

A: You can use a REWRITE statement. For examples on how to use the REWRITE statement, see pages 101 through 106 in your BASIC User's Guide (SA21-9307) and page 172 in your BASIC Reference Manual.

Q: Must I always do a READ or REREAD before doing a REWRITE?

A: No, not when you have specified a KEY or a REC number. See pages 105 and 106 in the BASIC User's Guide and page 173 in the BASIC Reference Manual.

Q: How can I read a field written in binary?

A: Use the B option in your FORM statement. See pages 114 and 116 in your BASIC Reference Manual.

A Performance Hint: Clear the Screen

This technique

```
100 PRINT USING 110, ''  
110 FORM C, SKIP 16  
120 RETURN
```

.

.

.

```
260 GOSUB 100
```

does the same, uses less storage, and is faster than

```
100 FOR I = 1 TO 16  
110 PRINT  
120 NEXT I  
130 RETURN
```

.

.

.

```
260 GOSUB 100
```