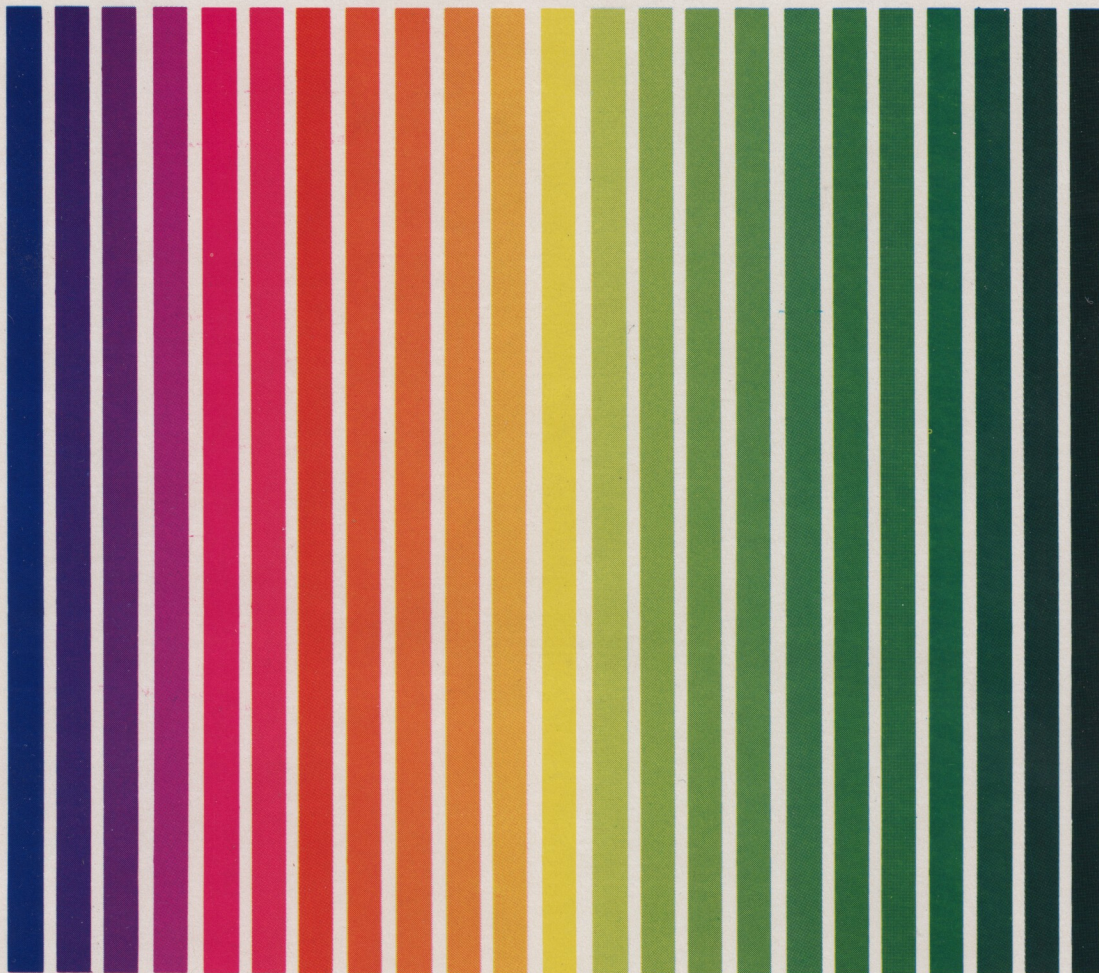


APX ATARI® PROGRAM EXCHANGE



John R. Powers

COMPUTERIZED CARD FILE

Store records organized like index cards

Diskette: 40K (APX-20014)

Edition B

User-Written Software for ATARI Home Computers

John R. Powers

COMPUTERIZED CARD FILE

Store records organized like index cards

Diskette: 40K (APX-20014)

Edition B

THE COMPUTERIZED CARD FILE

by

John R. Powers

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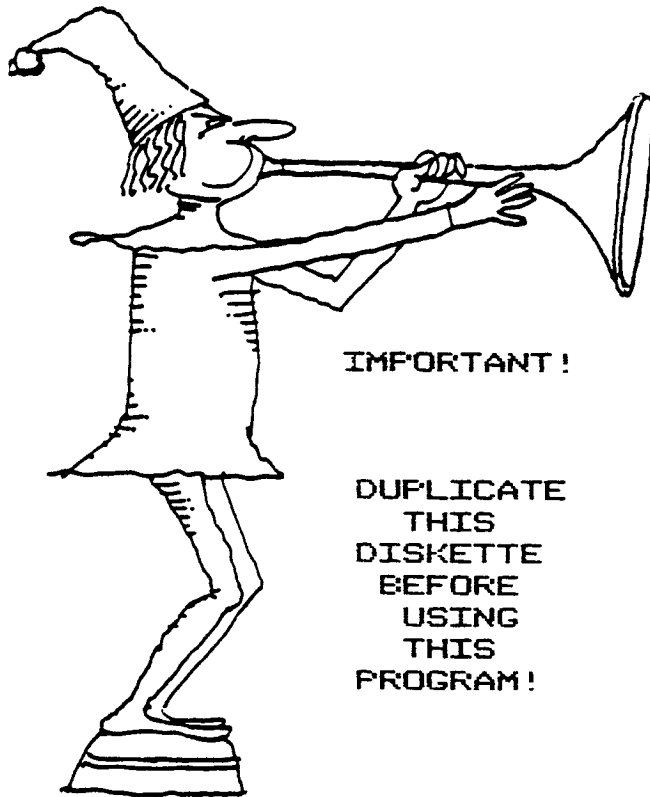
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This APX diskette is unnotched to protect the software against accidental erasure. However, this protection also prevents a program from storing information on the diskette. The program you've purchased involves storing information. Therefore, before you can use the program, you must duplicate the contents of the diskette onto a notched diskette that doesn't have a write-protect tab covering the notch.

To duplicate the diskette, call the Disk Operating System (DOS) menu and select option J, Duplicate Disk. You can use this option with a single disk drive by manually swapping source (the APX diskette) and destination (a notched diskette) until the duplication process is complete. You can also use this option with multiple disk drive systems by inserting source and destination diskettes in two separate drives and letting the duplication process proceed automatically. (Note. This option copies sector by sector. Therefore, when the duplication is complete, any files previously stored on the destination diskette will have been destroyed.)

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INTRODUCTION

OVERVIEW

The COMPUTERIZED CARD FILE (CCF) is a basic system for creating, displaying, storing, and updating small records—similar to what you might store on index cards. CCF is suitable for files like address and telephone lists, employee records, household inventories, gift lists, and so on. It isn't suitable for files like recipes, where some units of information (e.g., ingredients) occur different numbers of times in different records and where some units of information (e.g., directions) can be quite large.

To use CCF, you first tailor it to your application by modifying a few BASIC statements that define the units of information (called "fields") comprising a record and that create the display format for each record. Records can contain as many as 256 characters, and can contain as many fields as you want to fit into the display screen area of 38 columns by 24 rows. You use DATA statements to arrange these fields in any layout you wish within this area. CCF is also flexible as to the size and location of a record key, the unit of data by which CCF sorts, locates, and stores your records. A key can be any field, partial field, or combination of adjacent fields. The key must be the same data unit across records, however.

Once you modify the BASIC code, from then on you use your file by choosing an activity on a menu display, which contains these functions:

FETCH DATA (to load your stored file into RAM)

SAVE DATA (to store your RAM-resident file back on diskette)

CREATE RECORDS (to add new records)

DELETE RECORDS (to remove existing records)

EDIT RECORDS (to update existing records)

SCAN RECORDS (to examine records)

FILE DESCRIPTION (to look at a summary of your file's characteristics)

With a file already containing records, the procedure is as follows. You use the FETCH DATA selection to load all your existing records into memory. (CCF requires that all your records be in RAM at once; therefore, you must make sure you have enough RAM to hold both the CCF program and your file.) You use the SCAN RECORDS selection to search for a record by specifying its key—CCF accepts either the complete key or a partial key. The program controls against the creation of faulty keys to prevent inaccessible records from occurring in your file. You can also page sequentially forwards or backwards through your file using SCAN RECORDS, instead of specifying a record key.

You select CREATE RECORDS to add new records, EDIT RECORDS to update existing ones, and DELETE RECORDS to remove ones that are no longer useful. The procedure is the same for adding and updating records. In response to a prompt, you enter the number of a field and its new or updated value. After you press the RETURN key, CCF immediately updates the display. You then

repeat the procedure to fill in or revise other fields. After you've completed all updating activities to your file, you use SAVE DATA to store your updated file back on diskette.

Use one diskette for each application and copy one of the two versions of CCF onto these diskettes. One version, named CCF, is well-remarked for purposes of following the program's logic, but these REMark statements take up extra memory you could otherwise use to store more records. Therefore, another version, named CCF.COM, removes the REMark statements and merges short statements, freeing up more memory for record entry. You'll usually want to copy this compressed version. (Note. Because the compressed version has merged some statements, references to line numbers in these instructions apply to CCF only. However, you can still locate referenced lines in CCF.COM by listing lines in the general area of the specified line number.)

The master diskette also contains a program to print your records as data strings, sorted alphabetically by record key. The program prompts you for how many and which fields you want printed. It then prints each record as strings of field values. These strings contain no labels, but the values are in field number order, and the record key is set apart from the other fields. You'll need to write your own BASIC program to format these records to print like your display layout.

REQUIRED ACCESSORIES

40K RAM
ATARI BASIC Language Cartridge
ATARI 810 Disk Drive

OPTIONAL ACCESSORIES

ATARI printer or equivalent printer

TERMS USED IN THESE INSTRUCTIONS

Before discussing CCF in detail, let's briefly go over several terms used in these instructions. We'll use the sample file of employee records included on the diskette as our example. When you first use either version of CCF, the program loads this sample file when you use the FETCH DATA selection. Use it to become familiar with CCF features.

You create a file composed of records. Each record is made up of a set of data fields. You assign a record key, by which CCF stores and locates your records; the key is usually a field, but it can be a partial field, adjacent fields, or some combination thereof. Fields can optionally have labels, but every field has a number corresponding to its order within the record. You can display or suppress these numbers in the record display. When you choose the menu selections for creating, updating, or removing records, CCF displays a template of these field numbers and labels. In the case of CREATE RECORDS, the template contains empty spaces for the values you then fill in. In the case of EDIT RECORDS or DELETE RECORDS, the values currently used in the record appear in the record display.

Working definitions of the underlined terms, along with examples from our employee file, are as follows:

FILE -- a complete set of records (e.g., the file named SAMPLE.DAT)

RECORD -- a complete set of fields (e.g., all the units of information about one employee)

RECORD KEY -- the characters by which CCF sorts your records alphabetically for storage and retrieval; usually corresponds to a field (e.g., the Name field--CLAM,CATHY).

FIELD -- one piece of information within a record (e.g., an employee's number)

FIELD LABEL -- a title or heading to identify a field in the display format (e.g., NAME)

FIELD NUMBER -- the order of a field within the set of fields comprising a record (e.g., field number 1 of 9 fields)

FIELD VALUE -- the unit of information identified by the field label and specific to the particular person or thing the record describes (e.g., the value 25.000 in the field labeled RATE in record #3)

USING CCF

You choose activities within CCF by entering a number corresponding to a menu item and by responding to prompts to enter data or make a YES/NO decision. In each case, you press the RETURN key to send your input to the computer. In general, if you press the RETURN key in response to a prompt without first entering other information, you return to the Main Menu. To exit the program, press the BREAK key.

DISKETTE FILES

Your diskette contains the following files:

CCF Computerized Card File Program

This is a BASIC file in SAVE format, which you copy and customize for your application. It is initially set up for the sample data file.

CCF.COM Compressed Computerized Card File Program

This is the same BASIC file, but with the remark statements removed and lines of code concatenated. This version leaves more RAM for your records.

SAMPLE.DAT Sample Data Program

This is the data file used for the examples in these instructions.

PRINT Print Program

This is a BASIC file in SAVE format that you can use to print the sample data file.

PRINT.LST Customizing Print Program

This is a BASIC file in LIST format that you copy and customize for your application. It won't execute until you've customized it.

GETTING STARTED

SAMPLE SESSION

Let's go through a very simple session in CCF, using the sample employee file. We'll update one record. Refer to the instructions in the section titled "SETTING UP" for powering up your equipment and loading CCF into RAM, and then try out each step yourself as we describe it below.

Once we initialize CCF by typing RUN, we're ready to begin. First the COPYRIGHT 1981 ATARI notice displays underneath a prompt asking you to enter today's date in the format MM/DD/YY. We'll respond by typing 05/01/81 and pressing the RETURN key. The Main Menu then displays:

```
          COMPUTERIZED
          CARD FILE

          D:SAMPLE.DAT
          0 RECORDS

          1. Fetch Data
          2. Save Data
          3. Create Records
          4. Delete Records
          5. Edit Records
          6. Scan Records
          7. File Description

SELECT ONE? _
```

Figure 1. Main Menu

Before we can add a record to our file, we have to load the file into RAM, so we type a 1 (FETCH DATA). Because we've already tailored CCF to our particular file (in this case the sample file), CCF automatically knows which file to load from the diskette and needn't ask us for this information. Once the file loads, the Main Menu redisplay with the number of records under the file name. It now reads (in part):

```
          D:SAMPLE.DAT
          4 RECORDS
```

Next, we want to update the record with the key CLAM, CATHY. To update a record, we enter 5 (EDIT RECORDS). CCF prompts us for the key of the record, to which we respond by typing CLAM,

CATHY (we needn't enter the entire key, but we will in this example). CCF quickly locates this record and displays it. The record looks as follows (FIELD LABELS are underlined):

```
1. NAME CLAM, CATHY #2
2. EMP. NO. 10004 CFLD 09 ON 02/22/81
3. GROUP 4 4. JOB CLASS 8808
5. ADJ. 09/01/80 6. RATE 12.5000
7. START 10/01/77 8. REVIEW 10/01/81
9. COMMENT PREFERS #2 PENCIL
```

FIELD, DATA: ?

Figure 2. Sample Record

This is one of four records in our sample file. Each record has nine fields (plus two fields for which CCF automatically supplies values). These fields, with their labels in parentheses, are as follows: (1) Name (NAME), (2) Employee Number (EMP.NO.), (3) Group (GROUP), (4) Job classification number (JOB CLASS), (5) Last salary adjustment (ADJ.), (6) Current hourly salary (RATE), (7) Starting date (START), (8) Next salary review date (REVIEW), and (9) Any relevant comments (COMMENT). The two system-supplied fields are labeled CFLD, which displays the number of the last field you updated, and ON, which displays the date you typed in response to the TODAY'S DATE? prompt when you last changed this record. In this file the record key is the Name field, field number one.

Beneath the record is the prompt FIELD, DATA: ? . To update a field, we type in the number of the field, followed by a comma, and the new value. For example, to change the COMMENT value from PREFERS #2 PENCIL to ALWAYS HAPPY , type

9, ALWAYS HAPPY

CCF automatically redisplay the record with the updated COMMENT value. (Try it!) That's all we want to do this session, so we return to the Main Menu by pressing the RETURN key in response to the FIELD, DATA: ? prompt. We then enter 2 (SAVE DATA) for CCF to store the updated file back on diskette. Again, because we've tailored the program to our particular file, CCF already knows the name of our file and doesn't ask us for this information.

DEFINING YOUR OWN DATA FILE

Before you can perform such activity on your own file, you need to do some preliminary work. First you decide what fields you want to comprise a record, the order of your fields, and the record display layout. The section titled "CUSTOMIZING CCF FOR YOUR FILE--Designing Your Record Display" describes how to design your record display.

Next, you copy one of the CCF programs from the master diskette onto another diskette and load

the copy into RAM. Then you modify two sections of BASIC code in the CCF program. One section tells CCF information about your file, record, and record key. The other section sets up a data map of your fields, specifying the display screen layout. You then save this modified version of CCF back on diskette. The section titled "CUSTOMIZING CCF FOR YOUR FILE--Modifying the BASIC Code" describes this procedure.

If you plan to use the PRINT program, you'll also need to copy the PRINT.LST program onto your data file diskette and create a customized version, based on the code you modified in the CCF program. The section titled "CUSTOMIZING THE PRINT PROGRAM" describes this simple procedure.

Finally, you run CCF, add records to your designated file, and save these records on the same diskette. You now have a custom-tailored CCF program and a working file! From now on, you simply run the CCF program to add, remove, and update records in this file.

Whenever you want to create another file, follow these same steps.

LOADING COMPUTERIZED CARD FILE INTO COMPUTER MEMORY

1. Insert the ATARI BASIC Language Cartridge in the slot of your computer.
2. Turn on your disk drive (use disk drive one if you have more than one drive) and insert the CCF diskette (either the master if you're starting a new file and need to copy CCF onto another diskette, or a copy of CCF).
3. Turn on your computer and TV set.
4. At the READY prompt, type RUN "D:CCF" (for the REMarked version) or RUN "D:CCF.COM" (for the compressed version), depending on which version you copied onto your file diskette, and press the RETURN key. The program will load into RAM and start. You'll see the COPYRIGHT 1981 ATARI notice and the prompt for today's date:

TODAY'S DATE (MM/DD/YY)? _

COPYRIGHT 1981 ATARI

5. Enter the date in the form shown (e.g., 05/01/81) and press the RETURN key. The Main Menu then displays (see Figure 1) and you're ready to use your file.

MENU SELECTIONS

INTRODUCTION

Refer to Figure 1 for an illustration of the Main Menu. Choose a selection by entering its number and pressing the RETURN key (e.g., 3 <CR> to add new records to your file). You then enter data or respond to YES/NO prompts, depending on the menu choice. Let's look at each menu selection in more detail.

SELECTION 1--FETCH DATA

Use this selection to load an existing file of records into RAM. Because you've already tailored CCF to a particular file by modifying some BASIC code, CCF knows which file to load and doesn't ask you for this information. While the file is loading, CCF displays the file name, number of records, and date you entered the most recent records. For the sample file, the display is:

```
READING 4 RECORDS FROM DISKETTE
FILE D:SAMPLE.DAT
DATA STORED ON 02/22/81
```

Once the file is in memory, the Main Menu redisplay and the number of records loaded appears underneath the file name line at the top of the display:

```
D:SAMPLE.DAT
4 RECORDS
```

SELECTION 2--SAVE DATA

Use this selection to store your updated file--new records, revised records, and removed records--back on diskette. You need use this selection only once, just before ending your session. CCF tells you how many records it's storing, to what file, and on what date. For the sample file, if we revised one record on 5/01/81, the display would be:

```
STORING 4 RECORDS TO DISKETTE
FILE D:SAMPLE.DAT
DATED 05/01/81
```

SELECTION 3--CREATE RECORDS

Use this selection to add records to a new or an existing file. To use this selection, you must first have modified the BASIC code in CCF to your own application. After entering 3 , the computer displays a template of record fields, with no values following field numbers and/or labels. In the sample file, the record display would be:

```
1.NAME                                     #0
2.EMP.NO.          CFLD      ON
3.GROUP              4.JOB CLASS
5.ADJ.              6.RATE
7.START            8.REVIEW
9.COMMENT
FIELD,DATA: ? _
```

Figure 3. Sample Display for Menu Selection 3

At the bottom of the display is the prompt FIELD,DATA: ? asking you to enter a field number and a value for that field. You fill in record information by entering a field number, a comma, and a value for the field (e.g., 1,PIKE,PORTIA to enter a value for field Name--the second comma is part of the value, whereas the first separates the field number from the field value). If you enter more characters for a value than you have dimensioned for that field, CCF truncates the value to the dimensioned length.

Notice that two fields, CFLD and ON, have no numbers. CCF automatically supplies values for these fields. CFLD indicates the field you last changed, and ON displays the date of that change. (These two fields remain in your file, as explained in the section titled "CUSTOMIZING CCF FOR YOUR FILE--Modifying the BASIC Code".) Thus, if we fill in the value PIKE,PORTIA for field one, CCF automatically updates the record display, which then looks like this:

```
1.NAME PIKE,PORTIA                       #0
2.EMP.NO.          CFLD 01 ON 05/01/81
3.GROUP              4.JOB CLASS
5.ADJ.              6.RATE
7.START            8.REVIEW
9.COMMENT
FIELD,DATA: ? _
```

Figure 4. Sample Display for Menu Selection 3--Field 1 Filled In

A value now appears after the NAME label in field one, CFLD indicates you last changed field one, and the date now displays after label ON. Continue to enter a field number, a comma, and a value for each field you want to update (fill in, change, or erase). To tell CCF to add this record to the RAM-resident file, respond to the same prompt by pressing the RETURN key without entering other data. CCF displays a brief message at the bottom of the screen confirming that it has added this record:

INSERTING #5

Remember to use menu selection 2 (SAVE DATA) to store these new records permanently on your diskette.

SELECTION 4--DELETE RECORDS

Use this selection to remove records from your file that you no longer want. After you enter 4, CCF prompts you for the key of the record you want to remove:

DELETE
ENTER KEY?

Enter the record key and press RETURN. You may enter a complete key (e.g., SALMON,SALLY) or a partial key (e.g., SALMON or even SAL). CCF displays the first record it locates matching your specified key or key stem. CCF then displays the record so that you know exactly what you're deleting and asks you to confirm that you want the record removed. The prompt is:

ENTER Y TO DELETE

To erase the record, enter Y. CCF then displays the DELETING #n message to notify you that it has deleted this record (e.g., DELETING #3 for record 3). This number corresponds to the record number that appears in the upper right-hand corner of each record. It's the slot number of the record in the file. To preserve the record, type any other letter. CCF then prompts you to enter another record key. Press the RETURN key to return to the Main Menu.

SELECTION 5--EDIT RECORDS

Use this selection to update existing records, whether these are records loaded into memory from diskette or records you've created in this session. After you enter 5, CCF displays the prompt:

EDIT
ENTER KEY?

Enter the key of the record you want to update. You may enter a complete key (e.g., CLAM,CATHY) or a partial key (e.g., CLAM). CCF displays the first record it locates matching your key or key stem, along with the filled-in values and with the edit prompt FIELD,DATA: ? (see Figure 2 for an illustration of this display). To update a field, enter the field number,

a comma, and the new value. The format is:

FIELD NUMBER, FIELD VALUE

For example, to change the REVIEW value in the record illustrated in Figure 2, enter

8, 11/30/82

and press the RETURN key. CCF immediately redisplay the record with the updated value in the designated field. You can then modify this value further, or update other field values. You can also erase a field value by entering the field number only (e.g., entering 8 clears the REVIEW field). Press the RETURN key in response to the FIELD, DATA: ? prompt to tell CCF you're finished with this record and want the updated version to replace the original version in RAM. CCF displays the message:

DELETING #4
INSERTING AT #4

to notify you that it is replacing the original record in slot number 4 with the updated version. CCF then returns you to the Main Menu.

Remember to use selection 2 (SAVE DATA) to store your updated file permanently on your diskette file.

SELECTION 6--SCAN RECORDS

Use this selection to locate existing records. CCF prompts you for the key of the record you want to look at:

SCAN
ENTER KEY ?

Enter the key of your desired record and press RETURN. You may enter a complete key (e.g., CLAM, CATHY) or a partial key (e.g. CLAM). CCF displays the first record it locates matching your specified key or key stem, along with the prompt:

ENTER + FOR FORWARD
- FOR BACKWARD
OR KEY

To page forward sequentially through your records, enter a plus (+). Each time you do so, CCF displays the next record in the file (sorted alphabetically by record key). To page backward through your records, enter a minus (-). CCF then displays the previous record in the file. To page to a particular record, enter its key. You may enter either the entire key or just part of it. The same prompt redisplay for each record display, so you may combine forward and backward paging with key searches. To return to the Main Menu, press the RETURN key without entering other information.

SELECTION 7--FILE DESCRIPTION

Use this selection to look at a display of information about your file. CCF takes this information from the BASIC statements you modified to tailor the program to your particular file. The table contains the following information (variable names in angle brackets correspond to the names used in your modified BASIC statements--see section "CUSTOMIZING CCF FOR YOUR FILE--Modifying the BASIC Code"):

FILE NAME	<FILE\$>				
RECORD LENGTH	<RLEN>				
NO. OF RECORDS	#				
DATE WRITTEN	date				
KEY START	<KBGN>				
KEY LENGTH	<KLEN>				
NO. OF FIELDS	#				
FIELD	START	END	FIELD	START	END
f1	a1	b1	f3	a3	b3
f2	a2	b2	f4	a4	b4

Figure 5. Selection 7--FILE DESCRIPTION

The FILE NAME and RECORD LENGTH are taken from variables you modified in the CCF program for this application. FILE NAME corresponds to the name you specified under which CCF stores your records on diskette. RECORD LENGTH corresponds to the set length of one record (CCF fills any short or omitted values in a record with trailing blanks).

For DATE WRITTEN, CCF uses the most recent date on which you saved your file via selection 2 (SAVE DATA). KEY START and KEY LENGTH correspond to two values you use in BASIC variable statements. KEY START is the location on the data map of the first character in your designated key and KEY LENGTH is the number of characters comprising the key. NO. OF FIELDS corresponds to the total fields you entered as DATA statements, numbered consecutively. The table at the bottom of the display indicates the starting and ending location of each field, as you've coded these values in DATA statements.

The FILE DESCRIPTION for our sample file looks like this:

FILE NAME D:\SAMPLE.DAT
 RECORD LENGTH 90
 NO. OF RECORDS 4
 DATE WRITTEN 02/22/81

KEY START 1
 KEY LENGTH 20

NO. OF FIELDS			9
FIELD	START	END	
1	1	20	
2	21	25	
3	26	26	
4	27	30	
5	31	38	

FIELD	START	END
6	39	45
7	46	53
8	54	61
9	62	80

Figure 6. FILE DESCRIPTION for Sample File

CUSTOMIZING CCF FOR YOUR FILE

INTRODUCTION

Before you modify either version of CCF (the remarked program, CCF, or the compressed program, CCF.COM), copy the program to another diskette that you'll also use to store your file records. Then load the CCF program from this diskette into RAM. Follow the procedures described in this section for each file you want to create. Customizing involves three steps. First, you design a record display format. Second, you create a data map of your field values. And third, you modify two sections of BASIC code, based on the information you obtain from designing your record display layout and creating your data map.

DESIGNING YOUR RECORD DISPLAY

First, consider what units of information you want in your records, what labels you want to identify your fields, and the longest value for each unit. Remember that the sum of your record's field lengths (excluding field numbers and labels) can't exceed 256 characters. You may also set a field length to zero, in which case only the label is important.

Once you have this information, you plot your layout on the GRAPHICS MODE 0 paper at the back of this manual. Place each character, punctuation mark, or empty space in a square and then leave blank the number of squares you want to allocate for each value. Figure 7 illustrates the layout for the SAMPLE.DAT file (the asterisks indicate squares allocated to the value for each field).

Include in your layout the number and a period for each field number you want to display (e.g., fields 1 - 9). Omit from your layout numbers you want to suppress (e.g., fields CFLD and ON). Work within 38 columns instead of 40 if you don't want your data to wrap to another line. You may use the first 17 rows; CCF uses the remaining rows for its prompts and messages. In the sample layout, we use rows 2 - 12.

If you want to use more than 17 rows, you can change the screen location for CCF's prompts and messages. The CCF program statement in line 882 defines the prompt row number. The value for the row number variable (YPM) can range from 0 to 20. Allow four lines for the prompts and messages. Be careful that they don't overlap the display of your data on the screen.

ROWS/COLUMNS ->

```

1
V      1      1      2      2      3      3      3
1...5...0...5...0...5...0...5...8
1 .....
2 .1.NAME *****
3 .....
4 .2.EMP.NO.*****CFLD.**ON.*****
5 .....
6 .3.GROUP.*.....4.JOB CLASS.****.
7 .....
8 .5.ADJ.*****6.RATE.*****.
9 .....
10 .7.START.*****8.REVIEW.*****
11 .....
12 .9.COMMENT.*****
13 .....
14 .....
15 .....
16 .....
17 .....

```

Figure 7. Sample Record Layout

CREATING A DATA MAP

Referring to your layout, write down the length of every field, whether numbered or unnumbered, but excluding field numbers and labels. For example, we've allocated 20 squares for the Name value, 5 for the Employee Number, and 2 for the Changed Field (CFLD). Our list for the sample layout looks like this:

```

*1.NAME      20
2.EMP.NO.    5
CFLD         2
ON           8
3.GROUP      1
4.JOB CLASS  4
5.ADJ.       8
6.RATE       7
7.START      8
8.REVIEW     8
9.COMMENT    19
TOTAL       90

```

Figure 8. Value Lengths

Next, create a data map of all the lengths (excluding field numbers and labels) as if they

were concatenated into one long string. Thus, field one occupies positions 1 - 20, field two occupies positions 21 - 25, and so on. It's helpful to draw a schematic of this map. For the sample file, the schematic might look like this:

```

      *F1      F2      F3      F4      F5      F6      F7
1---->20/21---->25/26,26/27---->30/31---->38/39---->45/46---->53

      F8      F9      F98      F99
/54---->61/62---->80/81---->82/83---->90

```

Figure 9. Field Value Data Map

As your last design step, decide which field or string of characters you want to be the record key and note its starting location in the data map and its total length in the value lengths list (an asterisk appears next to this information). In the sample, the Name field (field one) is the key, so the starting location is 1 and the key length is 20. You now have all the information needed to modify the BASIC statements in CCF that will tailor the program to your application.

MODIFYING THE BASIC CODE

Load into RAM the version of CCF that you've copied onto the diskette to hold your data file. You'll be modifying two sections of code. The first section (lines 30140 - 30220) contains variable and dimension statements for various file parameters. The second section (lines 31101 - 31999) contains DATA statements defining each field in the display format.

Changing variable and dimension statements (lines 30140 - 30220)

Lines 30140 - 30220 contain variable and dimension statements to be modified. The current value of each line for the sample file is listed below, along with a brief explanation of each statement and how to obtain the value from the information you prepared. Modify these lines by retyping the number and statement or by editing the existing lines.

30140 RLEN=90:REM RECORD LENGTH

This statement specifies the total length of all your fields, as shown in Figure 8. In the sample file, the sum of our field lengths is 90.

30150 KBGN=1:REM KEY BEGINNING

This statement specifies the starting location of your record key, as indicated in your data map in Figure 9. Field one is the record key, and its starting location is position 1.

30160 KLEN=20:REM KEY LENGTH

This statement specifies the total length of your record key, as indicated in the field lengths in Figure 8. Field one has a length of 20 characters.

30170 FILE\$="D:SAMPLE.DAT"

This statement specifies the device code and file name of the DOS file containing your records. The name of our sample file is SAMPLE.DAT . If you use other than disk drive one, remember to follow the device initial with the number of your drive containing the CCF/data file diskette. You must use that drive each time you run CCF, unless you change this statement.

30200 DIM DAT\$(5000):REM DATA 'FILE'

This statement dimensions enough memory to contain your entire file. To compute this figure, multiply your record length (RLEN) by the number of records your file will contain. The sample file is dimensioned to support about 55 records of 90 characters each. CCF uses the same amount of space for each record, regardless of the actual value lengths, because the program fills values shorter than the maximum length with trailing blanks. Be careful not to allocate more memory than you have available.

30210 DIM REC\$(90):REM 'DATA' RECORD

This statement dimensions enough memory for one record. It's equal to the length of a record (RLEN), in line 30140 above.

30220 DIM KEY\$(20):REM ACCESS KEY

This statement dimensions enough memory for your specified record key, as indicated in the value length list in Figure 8. In our sample file, the key can be as long as 20 characters.

Writing the DATA statements for each field (lines 31101 - 31999)

Your second set of program changes involves coding the DATA statements that create the record display. Write one DATA statement for each field. The format is identical for each line. (We'll use line 31102, defining field two, as our example.) Recode lines 31101-31999 to fit your fields, adding or erasing lines as necessary to accommodate the number of fields in your records. The format is:

311nn DATA mm,X,Y,A,B,LABEL

where

nn = mm --> the field number. If you want the number to display, as indicated on the GRAPHICS MODE 0 layout, code the number mm as a positive integer (e.g., 2). If you don't want the number to display, code it as a negative integer (e.g., -2). These numbers must be consecutive, starting with one.

example: 31102 DATA 2

X = the beginning column position on the GRAPHICS MODE 0 layout for this field, including the field number. If you don't want the field to display, set X to zero (0).

example: 31102 DATA 2,2 [begin field in col. 2]

Y = the (beginning) row position on the GRAPHICS MODE 0 layout for this field.

example: 31102 DATA 2,2,4 [begin field in row 4]

A = the starting location on the data map (see Figure 9) for this field. If this field doesn't occur in the data record (i.e., its length is zero), enter zero (0) for A. There may be cases when you want only a LABEL (see below). For example, to display a LABEL as a column heading, enter 0 for A. If you update a field where A is zero, CCF ignores your update. When you set A to zero, also set B to zero.

example: 31102 DATA 2,2,4,21 [start in position 21]

B = the ending location on the data map (see Figure 9) for this field

example: 31102 DATA 2,2,4,21,25 [end in position 25]

LABEL = the label you want displayed preceding the value of this field, as indicated on the GRAPHICS MODE 0 layout

example: 31102 DATA 2,2,4,21,25,EMP.NO.

31198 DATA -98,X,Y,A,B,CFLD

31199 DATA -99,X,Y,A,B,ON

These statements control automatic field and date recording. Field -98 displays the number of the field you last updated, and field -99 displays the date you last changed the field. You can change the X,Y,A,B, and LABEL values of these fields. To turn off these features, set their A and B values to zero (0). Don't delete lines 31198 or 31199.

31999 DATA 0,0,0,0,0,END

Retain line 31999 as it is; this is the end-of-data flag.

SAVING YOUR MODIFIED CODE

After modifying the CCF/CCF.COM program, do the following:

1. Save the program on your diskette (e.g., SAVE "D:CCF" or SAVE "D:CCF.COM").
2. Save the customized BASIC statements in LIST format (e.g., LIST "D:CUSTOM.LST",30000,32000). This file will be handy for customizing the PRINT program described in the next section.
3. Then type RUN to initialize the modified version already loaded into memory, if you plan to use CCF immediately.

CUSTOMIZING THE PRINT PROGRAM

You'll also need to customize the PRINT program if you want to print your records. This program prints each record as a data string of field values, without field numbers or labels. The steps are as follows:

1. Copy the PRINT.LST program onto your data file diskette from the master diskette.
2. Clear the BASIC program area by typing NEW .
3. Type ENTER "D:PRINT.LST" to load into memory the non-customized portion of the PRINT program.
4. Type ENTER "D:CUSTOM.LST" (use the file name you assigned this file in the previous section) to load in the customized portion of CCF/CCF.COM that you created by modifying the program code.
5. Save the merged, customized program with the command SAVE "D:PRINT" .

The PRINT.LST file on your master diskette doesn't have lines 30000 or greater. It won't (and shouldn't) execute by itself, but only in conjunction with the code you append to it in step four above. Never add lines 30000 and above to the PRINT.LST file on your master diskette.

PRINTING RECORDS AS DATA STRINGS

Use this program to obtain a printed copy of all your records, sorted alphabetically by record key. Each record prints as a data string, without field numbers or labels. To load the program into RAM and initialize it, type `RUN "D:PRINT"` and press `RETURN`. Remember to follow the device initial with the number of the disk drive containing the diskette, if you're not using disk drive one.

The program loads the file specified in line 30170 of the `PRINT` program (variable `FILE$`). If you haven't yet customized the `PRINT` program, it displays the following information for the sample file and prompts you for the output device:

```
CCF GENERAL DATA BASE PRINT

READING 4 RECORDS FROM DISKETTE
FILE:D:SAMPLE.DAT
DATA STORED ON 02/21/81

ENTER OUTPUT FILE DESCRIPTION
? P:
```

Respond by typing `P:` for "output to printer".

Then `PRINT` asks you for the total number of fields you want printed:

```
ENTER THE NUMBER OF FIELDS
RETURN FOR FIELD LABELS
```

If you know how many fields you want printed, enter the number. For example, to print all nine of the numbered fields in the sample file, type `9` in response to the prompt. Press the `RETURN` key without entering a number to obtain a list of all your fields, should you want to see this information before deciding.

Finally, `PRINT` asks you which fields you want printed:

```
ENTER FIELD NUMBERS
1. ?
```

Enter one field number per prompt. Each time you enter a number, `PRINT` prompts you for another number until you've entered the number of fields you specified in response to the previous prompt.

The program then prints your specified field values for all records, one record per line. A example from our sample file is:

DATA FROM 02/22/81
FILE D:\SAMPLE.DAT

CLAM,CATHY 1004 4 8808 09/01/80 12.5000 10/01/77 10/01/81 PREFERS #2 PENCIL

Figure 10. Sample Printed Output

TROUBLESHOOTING

PROGRAM OPERATION LIMITATIONS AND WARNINGS

If you press a key that causes a break in the program's execution (you'll see the **READY** prompt), don't restart the program with the **RUN** or **LOAD** command. Doing so will cause you to lose all revisions you've done to your RAM-resident file. Instead type **GOTO 1500**, which gets you far enough into the program so that CCF retains any work you've done. You can then save your data by using Selection 2--**SAVE DATA**.

Remember, the sum of your field lengths can't exceed 256 characters, and your record display should fit within 38 (or 40) columns by 24 rows. In addition, the maximum field length is set to 40 characters. To increase this parameter, change the dimensioned value of variable **TMP\$** in line 460 of the CCF program.

The **COMPUTERIZED CARD FILE** program is fully commented and easy to follow. Look at the program listing if you run into a problem that hasn't been documented...and write the **ATARI Program Exchange** so we can revise this manual!

ERROR CODES AND MESSAGES

Most errors cause program-specific error messages to display, along with suggested recovery. CCF and CCF.COM contain the following error messages.

NO DATA

FETCH BEFORE SEARCHING

You've tried to use menu selection 2 (**SAVE DATA**), 4 (**DELETE RECORDS**), 5 (**EDIT RECORDS**), or 6 (**SCAN RECORDS**), but you haven't loaded a file into RAM. Use menu selection 1 (**FETCH DATA**) to bring in your file.

BAD SEQUENCE IN PROGRAM

DATA TABLE. PLEASE

CORRECT. READ m BUT

WAS EXPECTING n

When CCF/CCF.COM was trying to evaluate your **DATA** statements as it initialized, it encountered a field number that was not consecutive (e.g., it tried to read data for field 3 after reading data for field 1). List lines 31101 - 31997 and look at the first value following the word **DATA** in each line. If these values aren't consecutive, correct them. The last two digits of the line number must be the same as the field number. Lines 31998 and 31999 might contain fields -98 and -99; these are valid as is). Remember to **SAVE** the corrected program on diskette.

BAD FIELD NUMBER, TRY AGAIN

When using menu selection 3 (**CREATE RECORD**) or 5 (**EDIT RECORD**), you entered a value without first entering its field number. Enter the field number, a comma, and then the value.

**FIELD n IS MISSING OR OUT OF
SEQUENCE IN THE PROGRAM DATA TABLE
NO ACTION TAKEN**

You entered a field number and value in response to the FIELD,DATA: ? prompt for which CCF/CCF.COM can find no DATA statement by which to place the value in the record display. Check your input for a typing error. Otherwise, check your DATA statements in lines 31101 - 31999 to see whether the field numbers (the first value in each statement after the word DATA) are out of sequence.

**MUST BE A DIGIT
PLEASE RE-ENTER**

You've entered a letter or letters in response to the SELECT? prompt on the Main Menu. To select a menu item, enter its corresponding number.

**KEY DUPLICATED AT RECORD #
ENTER 1 TO CHANGE KEY
2 TO QUIT**

You've tried to enter a record key for a new record or have tried to update the key of an existing record, but your key value already exists in another record in the file. Enter the number 1 to call the FIELD, DATA: ? prompt so that you can re-enter the corrected value, or enter the number 2 to return to the Main Menu without adding/updating this record.

**KEY MUST START WITH A NON-BLANK
ENTER 1 TO CHANGE KEY
2 TO QUIT**

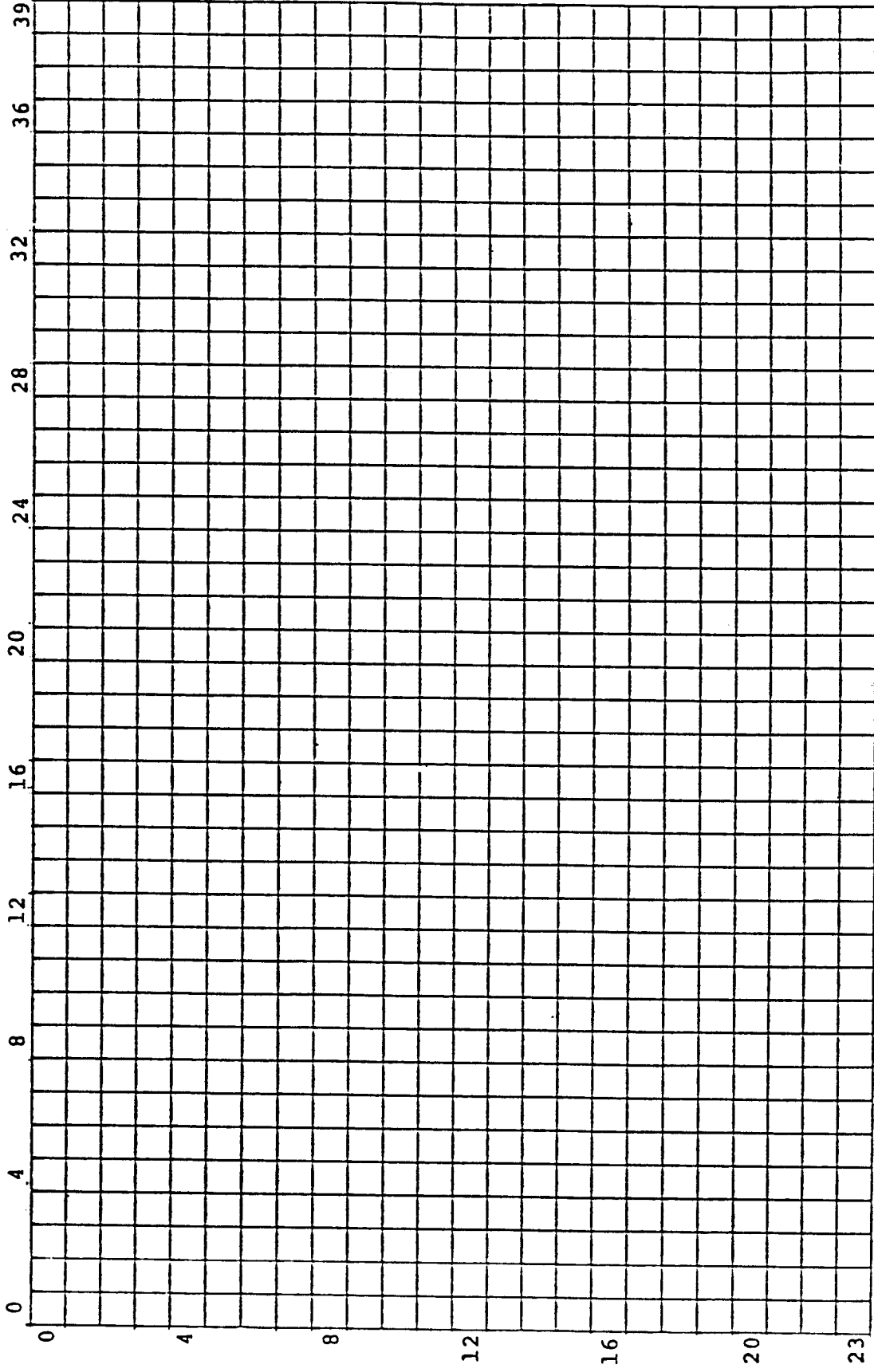
You've tried to add or update a record key with a value starting with a blank or you pressed the RETURN key without entering a number in response to the first prompt for this record. You must begin all keys with a character other than a space. To re-enter the corrected value enter 1 and answer the FIELD,DATA: ? prompt. Enter 2 to return to the Main Menu without adding/updating this record.

THE PRINT PROGRAM

ERROR 8- AT LINE 1120

You'll get an ERROR 8- (Input Statement Error: Attempted to INPUT a non-numeric value into a numeric variable) if you press the RETURN key without entering data, before you enter enough numbers in response to the ENTER FIELD NUMBERS ? prompt to match the number you entered in response to the ENTER NUMBER OF FIELDS prompt. For example, if you indicate you want six fields to print and then you key in only five numbers and press the RETURN key on the sixth prompt, an ERROR 8- will result. Rerun the program.

Graphics Mode 0



Notes: _____

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1. Name and APX number of program.

2. If you have problems using the program, please describe them here.

3. What do you especially like about this program?

4. What do you think the program's weaknesses are?

5. How can the catalog description be more accurate or comprehensive?

6. On a scale of 1 to 10, 1 being "poor" and 10 being "excellent", please rate the following aspects of this program:

- _____ Easy to use
- _____ User-oriented (e.g., menus, prompts, clear language)
- _____ Enjoyable
- _____ Self-instructive
- _____ Useful (non-game programs)
- _____ Imaginative graphics and sound

7. Describe any technical errors you found in the user instructions (please give page numbers).

8. What did you especially like about the user instructions?

9. What revisions or additions would improve these instructions?

10. On a scale of 1 to 10, 1 representing "poor" and 10 representing "excellent", how would you rate the user instructions and why?

11. Other comments about the program or user instructions:

From

STAMP

ATARI Program Exchange
P.O. Box 3705
Santa Clara, CA 95055

[seal here]