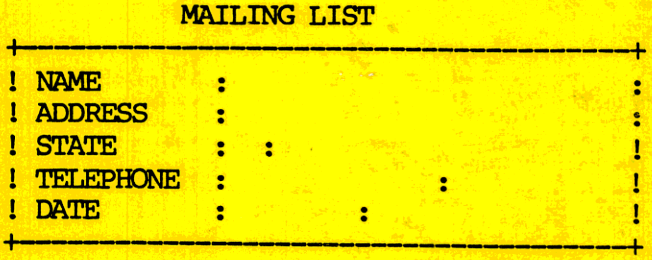
QUICKCODE™

dBASE II™ PROGRAM GENERATOR




```
*      NONAME.ADD      -ADD PROGRAM
STORE T TO MQ:AMORE
DO WHILE MQ:AMORE
* SET UP DEFAULT VALUES
 DO  NONAME.FAU
ERASE
STORE  ' ADD '  TO MQ:MODE
* GET DATA TO ADD
DO  NONAME.IO
@ 21,10 SAY  ' MAKE AS MANY ENTRIES AS YOU WANT '
@ 22,10 SAY  ' WHEN DONE ENTER BLANKS FOR  STATE '
READ
* ARE WE DONE?
IF MSTATE  [|  '  '
* PERFORM VALIDATION
 DO  NONAME.VAL
 APPEND BLANK
* PUT SCREEN DATA INTO FILE
 REPLACE  NAME  WITH  MNAME
 REPLACE  ADDRESS  WITH  MADDRESS
 REPLACE  STATE  WITH  MSTATE
 REPLACE  TELEPHONE  WITH  MTELEPHONE
 REPLACE  DATE  WITH  MDATE
ELSE
    STORE F TO MQ:AMORE
ENDIF
ENDDO
RELEASE MQ:MODE,MQ:AMORE
* RELEASE INPUT FIELDS
RELEASE MNAME
RELEASE MADDRESS
RELEASE MSTATE
RELEASE MTELEPHONE
RELEASE MDATE
```

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QUICKCODE

The dBASE-II Program Generator

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QUICKCODE SUPPORT NUMBER: (201) 794-8883

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QUICKCODE™ - dBASE-II Program Generator
dGRAPH™ - dBASE-II Graphics System
dUTIL™ - dBASE-II Utility

Other Products:

QUICKSCREEN™ - Screen Builder for Microsoft BASIC CBASIC/CB80, and FMS-80

QUICKCODE™

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QUICKINDEX

Use this index as a **QUICK** way to find information:

QUICKCODE

Table of Contents

Preface

Is a database management program generator an "idea whose time has come?" We thought so when we conceived of QUICKCODE and user response has confirmed our belief.

The idea is compelling- combine the power and flexibility of a database management system like dBASE-II with the time-saving appeal of a program generator.

Once the idea was clear, its implementation became the next issue: Should it be a "question and answer" system? Would it be for non-programmers, programmers, or both?

We first decided we wanted to build a tool for both non-programmers and programmers, in the same way that QUICKSCREEN and dUTIL had been useful to both. But this meant that QUICKCODE had to be able to generate two somewhat different kinds of programs- one which would require absolutely nothing except running the programs and the other which programmers could easily use as "building blocks" in their own work. But a program generator can't generate two different kinds of programs, can it? This question led to the idea of Automatic Pilot™, a feature which allows you to generate both kinds of programs.

In deciding how QUICKCODE would interact with the user, we rejected "question and answer" as too confining and complicated to use. We have always felt that the best software is produced by giving someone an environment in which to "play" with their creativity - at their own pace and in their own style. This demanded a visual, screen-oriented program.

While we were at it, we took the list of suggestions that QUICKSCREEN users had been giving us and we implemented the best and most useful of these (adding an idea or two of our own) to turn the screen builder into an even more powerful text processing system.

One thing we learned from QUICKSCREEN: listen to users. When we designed QUICKCODE, we kept this in mind. The WordStar Connection and the label/form generator are both "by popular demand." And we intend to keep listening to users for the ideas that will become our future products.

QUICKSCREEN and dUTIL have been successful products. We hope QUICKCODE will be even more successful. And to the users of our products, we would like to express our appreciation for your ideas and your support.

Jeffrey Fox
Jacob Geller

ADDENDUM

QUICKCODE for the IBM PC

There are some minor differences between QUICKCODE on the IBM PC and under CP/M. Here is a summary of them:

1. This version of QUICKCODE is for MSDOS or PC-DOS, not CPM/86.

2. Distribution disk should have four files on it:

   QC.EXE
   QUICK.CFG
   MENU.MNU
   MAILLIST.SCR

3. There is no need to install QUICKCODE ON THE IBM PC.

4. In the PC-DOS version, dBASE II uses ".PRG" files whereas under CP/M these were ".CMD" files. Thus, all references in the manual to ".CMD" files should be changed to ".PRG".

5. We have added a new command in QUICKSCREEN mode which did not exist in the CP/M version. This is the CAR RTN command, which acts like a carriage return key on a typewriter. That is, it will cause the cursor to move to the left margin and down one line. We have set this command up so that the IBM carriage return key will activate it.

6. As of version I2.1A you cannot use function keys as QUICKSCREEN mode commands.

7. .SCR files created with QUICKCODE under CP/M cannot be read by QUICKCODE for the IBM PC.

Addendum

These are some additional notes that could not be included in the manual:

1. New Error Code - 5

   One additional error status code can occur in the fields mode ER column. This is error code 5, which indicates a field name which is a duplicate of another field name on the screen. It must be corrected by going back to QUICKSCREEN mode and changing the name.

2. Logical Field Use

   There are some restrictions on the use of dBASE Logical (type L) fields:

   a) They are not allowed in database keys
   b) They should not be used for labels/forms
   c) There are no minimums, maximums or validations done on them
   d) They should not be put into WordStar files.

3. Special Keyboard Controls

   There are four controls you can use for commands which are listed in Appendix B. Here is how to type them at your keyboard:

Decimal	Name	You Type
28	FS	Control - backslash
29	GS	Control - right bracket/escape
30	RS	Control - up arrow
31	US	Control - underline

   (In this list, "up arrow" is not your terminal arrow key, it is the arrow character)

4. Long Fields

   You may find for long fields that during data entry in dBASE, the trailing colon will appear on the next line of your screen. This can be fixed by regenerating the programs with a smaller field size (use fields mode or explicit field sizes).

   Note: You should only do this if you have not already added a lot of data to your file.

5. WordStar Files

The data files created for WordStar can also be used with the following:

- Microsoft BASIC
- CBASIC
- Digital Research PL/I-80

6. Using Arrow Keys

You can use the arrow keys for cursor controls on some terminals. In particular, Televideo 900 Series and Vector Graphic are compatible.

To do this for Televideo, go into the C menu and enter:

	Decimal value	Name
CURSOR RIGHT	12	CTRL-L
CURSOR LEFT	8	CTRL-H
CURSOR UP	11	CTRL-K
CURSOR DOWN	10	CTRL-J

If you do this, be sure to change any other commands that might use the same control character.

7. Database keys/dBASE-II INDEX feature

In running QUICKCODE, do not try to use database key fields (i.e. the dBASE INDEX feature) unless you have read section B.6 (pp.83-86) and section C.8 (pp.120-122). In particular, you should not do anything with a keyed database unless you have first run the associated .GO program (described on p.120).

I. INTRODUCTION AND OVERVIEW

You are probably reading this user manual because you have just bought QUICKCODE (or are thinking about buying it) and you'd like to know what it can do for you. This section of the manual will introduce you to QUICKCODE and give you an overview of it. We strongly suggest that you read this entire section before you attempt to use QUICKCODE itself.

WHAT IS QUICKCODE?

Put simply, QUICKCODE is a **program generator.** That is, a computer program which writes computer programs. Some people call this an **application generator,** because you can use it to write programs for a variety of applications, without having to actually write any of the programs yourself "by hand."

Whatever you call it, QUICKCODE will act as a translator between you and the computer, so that you can get what you need without having to write programs. (If you happen to be a programmer, QUICKCODE can create most of your code for you, so that you do not have to waste time typing and proofreading.)

There are a number of ways a program generator can work. It can be "conversational," in which case it asks you lots of questions about what you want to do and then uses your answers to write a program. Or it can have a "language" of its own, in which case you must write your own "programs" in an English-like language, which is then used to write a computer program. Or it can be "screen-oriented," in which case you use the CRT screen in a direct way to tell the computer what you want. QUICKCODE is a screen-oriented program generator.

The advantage in using a screen-oriented program generator is that it is very fast and very easy. All you need to do is move the cursor (blinking light) around your screen and type the names of the things you want the computer to keep track of for you. You can work directly with your information at your own speed and in your own style, since you are controlling the computer.

Most of the things you need the computer to do can be selected from "menus" of choices, much like the famous Column A and Column B in a restaurant. In QUICKCODE, everything has been designed to be as **simple** as possible, so that telling the computer what you want can actually be **enjoyable.** It is unfortunate that such a consideration is usually absent from the design of computer software.

I. INTRODUCTION AND OVERVIEW

Although QUICKCODE is very easy to use, it is very powerful and does require some care and planning. Near the beginning of this manual, there is a section entitled, **Before You Run QUICKCODE.** It is very important that you read this. Also, throughout the manual, guidelines and warnings are provided to help you avoid time-wasting mistakes.

AN OVERVIEW

In order to tell QUICKCODE what you want, you need to be able to do several things:

A) Begin the process

B) Find out how to talk to QUICKCODE

C) Tell QUICKCODE what information you need to use

D) Keep track of what you are doing

E) End the process

QUICKCODE provides powerful facilities for doing all these things. Everything has been designed so that you will not have to tell QUICKCODE any more than is necessary and, if there are problems, QUICKCODE will tell you what the problem is.

A) Begin the Process

To begin using QUICKCODE, you must make sure that it "knows" what kind of computer you are using. This is done by means of an installation program, which is described in a section below. The procedure is very simple, but it must be done prior to using QUICKCODE. You do not have to perform this procedure every time you use QUICKCODE, just the first time. (Before actually running QUICKCODE, please read the section of this manual entitled, **Before You Run QUICKCODE**)

QUICKCODE is started by placing the QUICKCODE disk into your computer and typing **QC** The disk drive will light up (if it is a floppy disk) and a copyright notice will appear briefly on the screen and then disappear. (If this does not happen, it is likely that the installation wasn't performed successfully.)

B) Find Out How to Talk to QUICKCODE

The next thing you'll need to know is how to talk to QUICKCODE to get it to do what you want. To help you, there is the "main menu," which is a screen display that shows you most of the commands you can use and what they do, as shown on the next page.

I. INTRODUCTION AND OVERVIEW

Suggestion: You may want to use this page to fill in the particular set of commands that you set up in QUICKCODE for your own use.

QUICKCODE MAIN MENU

QUICKCODE: HELP FOR THE WEARY USER

SCREEN EDITING COMMANDS						OTHER COMMANDS			
CMD	ENTER	CMD	ENTER	CMD	ENTER	CMD	ENTER	CMD	ENTER
RIGHT		LINE		GRID		HELP		FIELDS	
LEFT		COLUMN				SAVE			
UP		DEL LIN				EXIT			
DOWN		DEL COL				*QUIT			
MIDDLE		CENTER							
LMARGN		LSHIFT							
RMARGN		RSHIFT							
TAB		*ERASE							

COMMANDS YOU CAN TYPE NOW

CMD	WHAT IT DOES:	CMD	WHAT IT DOES:	PROGRAMS TO GENERATE
C	CONFIGURE SYSTEM	O	OLD SCREEN	
S	SCREEN CHARACT.	N	NEW SCREEN	
X	OUTPUT OPTIONS	T	LOAD TEXT FILE	
M	QUICKMENU		GENERATE PGMS	
Q	** QUICKSCREEN MODE	E	*** EXIT ***	

---CURRENT SCREEN IS

No matter what you are doing, you can immediately get this "menu" to reappear to help you and you can then go back to what you were doing. This main menu is the first thing that will appear on your screen (after the copyright) when you start up QUICKCODE. Once this has been displayed on the screen, QUICKCODE will say **ENTER COMMAND** and the cursor will stop and wait for you to give a command. At this point, it is up to you to decide what to do next. If you don't want to do anything fancy, you should enter Q for QUICKSCREEN mode, which will allow you to tell QUICKCODE exactly which information you want to keep in the computer.

C) Tell QUICKCODE What You Need

The way you tell QUICKCODE what you need is to work in "QUICKSCREEN mode," which you do by typing **Q** at the main menu. QUICKSCREEN mode is really nothing more than an electronic blackboard, on which you type the names of the things you need. You can move the cursor up and down, left and right, and type them wherever you like. Wherever you type the name of these "data fields" is where they will appear when you are actually entering data. **This process of describing your needs to QUICKCODE should not be confused with the actual entry and retrieval of your data.** When you are running QUICKCODE, you are never entering data, you are simply telling QUICKCODE what your needs are so that later you can enter and retrieve data. The layout you put on the screen will become the data entry screen later on.

A **data field** is just a name for some type of information you'd like to store or retrieve. For example, if you want to be able to enter or retrieve names and addresses, you will need two data fields, one for each name and one for each address. To do this in QUICKCODE, for example, type the following on your electronic blackboard:

```
;NAME
;ADDRESS
```

This will tell QUICKCODE that you want to store names and addresses. Of course, each name or address could only be as long as you can fit on one horizontal line of the screen. If you also need the city, state, and zip code for each person on your list, type the following:

```
;NAME
;ADDRESS
;CITY                ;STATE  ;ZIP
```

This an example of five data fields.

QUICKCODE is so easy to use that you could just type the above 5 data fields, press one keyboard key (**ESC**), exit from

QUICKCODE, and begin entering your names and addresses in dBASE (assuming you had read the chapter entitled, **Before You Run QUICKCODE**). You might want to try this to get a taste of how QUICKCODE works. However, you will usually want to do a few other things before you exit from QUICKCODE, to produce programs which are even **more** useful.

In the rest of this book, you will find out how you can:

- draw titles, lines and boxes on your data entry screens

- design forms for printing

- print mailing labels

- use your database with WordStar/MailMerge

- have data entry automatically checked for correctness

- build your own "database."

All of these, and a lot more, can be accomplished through the use of QUICKCODE.

D) Keep Track of What You Are Doing

QUICKCODE provides several ways for you to keep track of what you are doing. On the main menu, QUICKCODE shows you the name of the screen you are working with, as well as all the programs QUICKCODE will generate if you give it the go-ahead.

In QUICKSCREEN mode, at the top of the electronic blackboard will be the line and column location where you have currently positioned the cursor. This is called the **line/column monitor.** On the same line will be the name of your screen and your data file. These will become more important as your experience with QUICKCODE grows. Finally, at the center of the top line, it will say **AUTOMATIC PILOT ON**, if you have the Automatic Pilot on. This will be described in greater detail later.

As you become more familiar with QUICKCODE, you will probably use the many other features which are not shown on the main menu. To keep track of these, use the "other menus," which are also described later.

E) End the Process

To tell QUICKCODE that you are finished and want to do something else, you must bring the main menu back to the screen and type **E** To make sure that you don't accidentally exit in the middle of some important work, QUICKCODE will ask you **ARE YOU SURE(Y/N)?** before it terminates. If you type **Y** then QUICKCODE will exit to CP/M. If you type **N** QUICKCODE will return to the main menu and you can keep working.

The above was intended to give you a feel for what QUICKCODE is and can do. To keep it short and simple, it was necessary to leave out a lot of important details. The rest of this book is divided into four major sections, followed by several appendices.

The first section, entitled **INSTANT PROGRAMS**, tells you everything you need to know to create simple programs very quickly.

The second section, entitled **QUICKCODE IN DETAIL**, describes every feature of QUICKCODE for the ambitious non-programmer or the experienced programmer.

The third section, entitled **YOUR QUICKCODE PROGRAMS**, completely describes the programs QUICKCODE generates.

The next section, entitled **OTHER ISSUES**, discusses the relationship of QUICKCODE to Fox & Geller's QUICKSCREEN and dUTIL, as well as how to use QUICKCODE with your existing databases.

Finally, the appendices provide you with helpful information about problems, which may save you a lot of time and trouble.

But first, please read the following section entitled, **Before You Run QUICKCODE**, so that you will be completely prepared to use QUICKCODE.

QUICKCODE HARDWARE/SOFTWARE REQUIREMENTS:

To run QUICKCODE, you need the following:

- CP/M 2.x (or MP/M) operating system
- 48K usable memory
- cursor addressable CRT (24 x 80)
  with max. of 4 bytes control sequence
- 150K of disk space
- dBASE-II version 2.3
  (for version 2.02, see "the other menus" section)
- WordStar version 3.0 (optional)

II. BEFORE YOU RUN QUICKCODE

Before you even think about running QUICKCODE, you should do the following:

1. Fill out and sign the contract that came with this manual as soon as possible. This will help us to continue to support you in the future. Part of the money you spent on this product is being used to provide technical support to you and other users. Because of this, we are strictly enforcing the policy that no technical support will be given unless your contract is on file with us and you tell us your serial number when you call.

Please note that the contract allows you to make copies of the package for your own use, but not to sell or give to anyone else. We intend to enforce this provision to the full extent of the law. Anyone providing us with information leading to legal action in which we are awarded damages will be compensated with 50% of the damages received. We reserve the right to refuse to take legal action in any particular case.

2. Make one back-up copy of your QUICKCODE disk and put it in a different room or location than the original.

Your QUICKCODE disk should contain the following files:

QC.COM	XADD.OVL	QINSTALL.COM
QUICK.CFG	XCMD.OVL	LBLMOR.OVL
MENU.MNU	XEDT.OVL	OUTGO.OVL
DSTART.OVL	XGET.OVL	MAILLIST.SCR
DQMODE.OVL	GETMOR.OVL	Or for MS-DOS:
MENU.OVL	XLBL.OVL	
SUBMEN.OVL	XRPT.OVL	QC.EXE
PARSE.OVL	XVAL.OVL	QUICK.CFG
JUGGLE.OVL	XWS.OVL	MENU.MNU
FIELDE.OVL	OUTCM1.OVL	MAILLIST.SCR
OUTGO.OVL	OUTCM2.OVL	

If any of these are missing, please contact us immediately, as the program may not run without them.

3. Read the following section on Installing QUICKCODE and perform the installation procedure. If you have a common type of computer or CRT, this will probably take less than 5 minutes, after which you can be sure that QUICKCODE knows the kind of system you have.

4. Once you have successfully installed QUICKCODE, you should read the section called **INSTANT PROGRAMS** and try out QUICKCODE with simple tests to learn how to use it. (The other sections of the manual will be more useful to you when you are more familiar with the product or if you want to use it with QUICKSCREEN and dUTIL.)

NOTE: The emptier the disk is when you start, the better!

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II. BEFORE YOU RUN QUICKCODE

Installing QUICKCODE

A. Why You Need to Install QUICKCODE

Because different computers and CRT's use different codes to control the video display, it is necessary to tell QUICKCODE which codes to use on your particular system. In order to make QUICKCODE itself as efficient as possible, the installation procedure has been put into a separate program, which can be removed from your QUICKCODE disk after successful installation. The installation procedure is so simple that it should not take more than a few seconds to complete, unless you have a very unusual system. If you do encounter problems during installation, please consult section E below, as it contains the solutions to most common problems.

B. How to Install QUICKCODE

QUICKCODE is installed by running the program **QINSTALL.COM**, which comes on the QUICKCODE disk. We have put a Q at the beginning of the name so that this program will not be confused with install programs you have from other software products. (This includes other Fox & Geller products. You can not use **QINSTALL.COM** to install any of our other products. Therefore, it is probably safest not to rename it.)

To run **QINSTALL**, you must be at command level in CP/M. Simply type **QINSTALL**, then press the **RETURN** key. In a few seconds, the screen will display a menu similar to the following:

```
      INSTALL PROGRAM- V.Q1.1  (C) 1982 BY FOX & GELLER ASSOCIATES
MENU # 1:            PLEASE ENTER THE LETTER FOR YOUR SYSTEM:
-------------------------------------------------------------------
A-ADDS REGENT                J-HEATH 89                S-TRS-80  II (P&T)
B-ADM-3A                     K-HP 2621                 T-VDP-80
C-ADM-5                      L-INTECOLOR               U-VECTOR GRAPHIC
D-APPLE W/80 COL CARD        M-OSBORNE                 V-VISUAL 100
E-BEEHIVE 150                N-PERKIN-ELMER 1100       W-VT52 (DEC)
F-CROMEMCO 3102              O-SOROC IQ 120/140        X-XEROX 820
G-DATAMEDIA STANDARD         P-SUPERBRAIN              Y-
H-GNAT- SYSTEM 10            Q-TELEVIDEO               Z-*** CUSTOMIZED ***
I-HAZELTINE 1500 SERIES      R-TRS-80 (FMG)            2- ** GO TO MENU # 2 **
-------------------------------------------------------------------
                          SELECT YOUR SYSTEM
```

At this time, locate your system on the list. If you don't see the name of your computer, look for the name of your CRT or a related CRT made by the same manufacturer. (If you see both computer and CRT, select the CRT).

In the above example, if you were using a Televideo CRT, you would pick entry **Q**. If you were using a Vector Graphic computer, you would pick entry **U**. Whichever entry you pick, the next thing you should do is press the keyboard key corresponding to that entry. (Q for Televideo, U for Vector Graphic.) Just to make sure that this is the entry you want, the screen will now display the entry you picked and ask you if it is correct, as follows:

II. BEFORE YOU RUN QUICKCODE

(assume you have picked entry Q)
YOUR SYSTEM IS: TELEVIDEO
IS THIS CORRECT? (ANSWER Y OR N)

If the name displayed is the one you want, press the **Y** key. If not, press the **N** key and **QINSTALL** will start over, so that you can choose another entry.

> **NOTE:** If the above message does not appear, you may see the following message instead:
> **- THIS SYSTEM NOT AVAILABLE...**
> This means that the entry you picked has not yet been put into **QINSTALL**, but will be in the near future. In this case, you will either have to try other menu entries to see if they work on your system, or do the Custom Installation described in section D below. In any case, you should be able to install QUICKCODE in a matter of minutes.

If you answer **Y** to the above question, you will now be asked what you want to do next:

WHAT DO YOU WANT TO DO NOW? (PICK ONE)
A- MAKE TELEVIDEO YOUR PERMANENT SYSTEM
B- TEST OUT TELEVIDEO FEATURES
C- START INSTALLATION OVER AGAIN
D- SEE TELEVIDEO CODES
E- END INSTALL PROGRAM

If you want to start over, press the **C** key. If you want to exit from the install program, press the **E** key. Otherwise, you have three choices of what to do:

A- This will take the codes for the system you picked and make them your permanent codes for QUICKCODE. ("Permanent" codes are not set up forever. You can change them, but normally there is no reason why you would want to.) If you choose to do this, you will not see anything happen, except that a message will appear saying that the activity was successfully completed. If you feel confident that you have picked the right system from the menu, you can simply press **A**, then exit from **QINSTALL** (by pressing **E**) and try out QUICKCODE. However, we recommend testing your CRT features using **B** below, just to make sure the codes you chose do in fact work on your system.

B- This will allow you to test out the CRT control codes you have just chosen, before you make them permanent. This way, by the time you actually run QUICKCODE, you can be reasonably sure that it will run ok. The test procedure itself is described in section C below and will take only a few seconds to try. However, if you are in a hurry, you can skip the test. But if it turns out that the codes don't work when you run QUICKCODE, don't say we didn't warn you!

D- This will let you actually look at the control codes you chose. It is only needed if you are doing a Custom Installation or if you are technically inclined. To most people, the codes won't mean anything, but if you are curious, press **D** and see your codes.

If you have pressed **A** above (with or without doing the test), you should now exit by pressing **E**. If you exit without having performed the **A** option and seen a message telling you that it worked, you will not have installed QUICKCODE.

That is all there is to installation. If you want to test your control codes, please read section C below. If you have any problems, please consult section E below.

C. Control Code Test

If you want to test your control codes, you should press **B** in answer to the question: **WHAT DO YOU WANT TO DO NOW (PICK ONE)**

At this point, the screen will be cleared and a list of features to test will be displayed:

```
          TELEVIDEO
          FEATURES TO TEST: (PICK ONE)
A- CLEAR SCREEN
B- CURSOR ADDRESSING
C- CLEAR TO END OF SCREEN
D- CLEAR TO END OF LINE
E- CURSOR HOME
F- CURSOR UP
G- CURSOR FORWARD
H- INVERSE
Z- ** DONE TESTING FEATURES **
          ENTER FEATURE
```

This is a very extensive list of CRT features. You probably do not have to test them all, because not all of them are now being used in QUICKCODE. The only ones you need to test are the ones described below (If you try to test one which is not needed, an error message will be displayed. Currently, features C thru H are not implemented.)

Features to Test

Clear Screen

The first test you should make is for the clear screen feature. You can make this test by pressing **A**. At this point, a brief description of the test will appear on the screen. Now, it is up to you to start the test and end the test. You can do each of these simply by pressing any keyboard key.

II. BEFORE YOU RUN QUICKCODE

The first time you press a key, the screen should become completely blank. If it does not, then your clear screen codes are not the right ones for your system. The second time you press a key, the test will end and the FEATURES TO TEST menu will once again appear on the screen.

Cursor Addressing

This will test the ability of the system to position the cursor to various parts of the screen. You can make this test by pressing **B**. Before making this test, you should have performed the clear screen test above, because the cursor addressing test clears the screen before the test is made.

After you press **B**, a brief description of the test will be displayed. Now, it is up to you to start the test and end the test. You can do each of these simply by pressing any keyboard key. The first time you press a key, the screen should clear and then display the following:

```
0.........1.........2.........3.........4.........5
 1
 2   --- THIS IS LINE 2 ---
 3
 4
 5
 6
 7                                                 C
 8                                                 O
 9  * (LINE 9, COL 4)                              L
10
11                                                 5
12                                  * (12,39)      0
13
14
15
```

If the screen does not look exactly like this, your cursor addressing control codes are not the right ones for your system. The screen will now stay as it is until you press any keyboard key to end the test, at which time the screen will be cleared and the **FEATURES TO TEST** menu will be once again displayed.

Exiting from Tests

To exit from the tests, press **Z**. You will now go back to **WHAT DO YOU WANT TO DO NOW? (PICK ONE)**. At this point, don't forget to make your codes permanent by pressing **A**.

If the tests were successful, you can be sure that these CRT features will work when you run QUICKCODE. If they did not work, please consult section E below, which can help you determine which codes were wrong.

D. Custom Installation

There are some situations in which you may need to enter the CRT control codes yourself, rather than picking an entry from the **QINSTALL** menu. The most common case is when your CRT and computer are simply not listed on the menu. Another situation is when your CRT is listed, but when you pick that entry, a message tells you that **THIS SYSTEM IS NOT AVAILABLE.** Finally, in some rare cases, you may have a CRT that is listed, but has some hardware/software modifications which make the usual codes not work. Whatever your situation, we have tried to make the custom installation procedure as painless as possible, by letting you display your codes, test them, and then go back and change them. However, to successfully perform a custom installation, you will still have to read the book that came with your CRT and understand how its control codes work (unless you happen to have a friend who has the same CRT). If you find the going tough, you might consider contacting the person who sold you the CRT or the manufacturer itself.

An Important Definition

Probably the hardest term to understand when talking about control codes is the **"lead-in character."** Since CRT control codes are simply special characters being sent to the CRT, we need a way for the CRT to recognize them, so that they can be distinguished from the usual data being displayed. On many systems, this is done by requiring that all control sequences begin with a particular special character, usually **ESC** (decimal 27) or **TILDA** (decimal 126). This character is known as the "lead-in character," because it leads into the control sequences. This definition has been presented because custom installation depends very much on the use of a lead-in character.

How To Do It

To do a custom installation, select entry Z from the menu and press **Z.** The following message will appear:

***** CUSTOMIZED SYSTEM INSTALLATION *****
TO INSTALL A CUSTOMIZED SYSTEM, YOU NEED TO KNOW
ALL THE CODES USED BY YOUR SYSTEM TO CONTROL THE CRT.
DO YOU WANT TO CONTINUE? (Y/N)

If you want to turn back, this is your last chance. Press **N.** If you press **Y,** the Custom Installation will proceed.

Lead-In Character

Now, you will be asked for the Lead-in Character as described above. If there is none, simply press **RETURN.** Your choice of Lead-in will be displayed and you can approve it and continue or disapprove it and choose a different character. (The option to approve or disapprove of a control code is available throughout the Custom Installation process, but will not be described any

further here).

Clear Screen

Assuming you chose a Lead-in character (or none), you will now be asked to define the sequence of characters used to clear the CRT screen by your system. Currently, we support a maximum 2 character sequence (including Lead-in) for this function. (If you require a longer sequence, please contact us and we will try to implement it for you).

If you did define a Lead-in character previously, you will now be asked if the Lead-in is required to begin the clear screen sequence. If it is, press Y. If not, press **N**. (If you did not define a Lead-in character previously, this question will simply not be asked).

Now, the install program will ask you to specify the special character used to clear the CRT screen (which will follow the Lead-in, if there is one). At this point, you should type in the decimal value for the clear screen character, as specified in your CRT book.

Examples

If these questions are confusing, use the following examples as a guideline:

1) If your CRT book says that the clear screen sequence should be:

ESC E (decimal 27, decimal 69)

Then you should answer **QINSTALL** as follows:

```
LEAD-IN CHAR? 27
DOES CLEAR SCREEN REQUIRE LEAD-IN? Y
ENTER CHARACTER USED TO CLEAR SCREEN 69
```

2) If your CRT book says that the clear screen sequence is:

FF (decimal 12)

Then, you should answer **QINSTALL** as follows:

```
LEAD-IN CHAR? (Press RETURN)
ENTER CHARACTER USED TO CLEAR SCREEN 12
```

Cursor Addressing

Installing the cursor addressing codes is similar to clear screen, except that, in addition to a possible **Lead-in** character and a **cursor addressing character**, you must specify the **order** in which the line and column locations are to be transmitted when positioning the cursor, and you must also specify a possible **constant** (number) which will be added to the line and column numbers automatically by QUICKCODE when positioning the cursor. There are a variety of schemes used by CRT manufacturers, but this covers nearly all of them.

For the **Lead-in** and **cursor addressing characters**, use the instructions and examples given for clear screen, above, as a guideline.

The **order** of transmission in entered as follows: **QINSTALL** will ask you to enter **Y** if the line is to be sent before the column and **X** if the column is to be sent before the line.

The **constant** is entered as follows: If there is a constant, type its decimal value. If there is not one (i.e. the constant is zero), just press **RETURN.**

After you enter these, you will again be asked, **WHAT DO YOU WANT TO DO NOW? (PICK ONE).** To test out the codes you entered, press **B** and perform the tests describd in section C above.

If the tests do not work, consult section E below for help in correcting your codes. Or, try displaying the codes for some other systems on the menu to get an idea of the codes used by most manufacturers.

If the tests are successful, make them permanent by pressing **A.** Also, write them down in case you ever have to do a custom installation again. The install program does not display the codes for a custom installation that has been made permanent.

E. Trouble Shooting

There are a number of things that can go wrong during installation. Some are more serious than others, but almost all can be solved in minutes by referring to the troubleshooting guide below. If you cannot solve your problem using this guide, please contact Fox & Geller Associates and we will help you solve your problem.

Problem	Description
Disk won't boot	Our software does not come with CP/M on the disk. You must copy CP/M onto it.
Program won't start	Make sure you are using the right disk and that **QINSTALL.COM** and **QUICK.CFG** are on it. Your disk or your files may be damaged. If so, restore them from a backup disk.
Error Message: THIS SYSTEM NOT AVAILABLE	A system listed on the menu has not yet been put into **QINSTALL.** You must try other systems on the menu or do a Custom Installation.
System name not on menu #1	System names may also be found on menu #2 or menu #3. To view all menus, keep selecting the last entry on the menu until you go back to menu # 1. (e.g. to see menu #2, press **2**) If the name is not on any menu, try other systems or do a Custom Install.

II. BEFORE YOU RUN QUICKCODE

Problem	Description
Error Message: NOT AVAILABLE YET...	You have tried to test out a CRT feature which is not yet needed by QUICKCODE, but may be in the future. Ignore this message.
During a test, CRT just sits, doing nothing	You must press a keyboard key to end each test, at which time the **FEATURES TO TEST** menu will again be displayed.
Clear Screen Test Fails	Make sure you have correctly indicated the Lead-in character, if any. Re-read your CRT book for possible typographical errors.
Cursor Address Test Fails	Cursor addressing problems can be one of the following types: **line/column order:** If the order is reversed, you will find that what is supposed to be at line 9, column 4, will be displayed at line 4, column 9. The "*" usually found at (12,39) will be at the top of the screen. **constant:** If the constant is wrong, you will see screen data shifted by over a few columns or lines, or else it will be "bunched up," all of it being on one or two lines or columns. **Lead-in or cursor address:** If either of these is wrong, all of the test data will be printed on the top three lines of the screen, separated by punctuation marks or letters of the alphabet.
Error Message: Error Reading Current Configur.	Your configuration file (QUICK.CFG) is either damaged or not on the disk. Restore it from a backup disk.
Error Message: Error Writing New Configuration	Your disk may be full or "read only." QINSTALL can not write to your disk. Try creating a dummy file on the disk with the editor or check to see if there is something wrong with your configuration file (QUICK.CFG).

A. INSTANT PROGRAMS

As described in the introduction, QUICKCODE is a program generator which can write programs for you in seconds.

One of the curious things about computer programs is that the more you want them to do for you, the longer and more complicated they get. At some point, a program gets so complicated that it becomes impossible to produce it in any way other than writing it by hand. QUICKCODE is not designed to generate programs that complicated.

Instead, QUICKCODE is designed for two kinds of use:

Use #1: "I don't want to worry about anything."

This is where you want to do some very common things like adding data to a file or looking at data, but without doing any programming. The advantage here is that you can have your programs in less time than it takes to boil an egg. However, the limitation is that the programs must remain reasonably simple. To make this as easy for you as possible, we created **Automatic Pilot.** Just like the one in an airplane, this Automatic Pilot can be turned on and off when you want. When turned on, it will simplify your life so that you can generate programs very fast without any programming.

Use #2: "I want to control all the details."

This is where you need to do some simple (or involved) programming yourself, but would still like to generate most of the code without having to type and proofread it (not to mention suffering through the same common syntax errors over and over). The advantage here is that you can save lots of coding and still control the details. The limitation is that you will have to do some programming and it will not be done as quickly. This seems to be an inescapable law of nature (i.e. "there's no such thing as a free lunch"). To use QUICKCODE this way, you should turn off the Automatic Pilot most of the time.

This section of the manual shows you how to create "instant" programs with QUICKCODE (and use them with dBASE) according to use #1, that is, the simple way. The next section, section B, provides all the information you need to do it the other way.

The rest of this section will take you step-by-step through a typical session using QUICKCODE.

1. Starting QUICKCODE

The clock has struck midnight. Everyone else has gone. The time has come for you to use QUICKCODE. You've made your backup disk, sent your license agreement in via express mail, and managed to successfully run the install program on your first try. What do you do next?

Assuming your computer is up and running and that you are currently logged on the disk that contains QUICKCODE (see your CP/M manual if you don't know what that means), here is what to do:

A> QC (RETURN)

QUICKCODE is started up by typing **QC** and pressing the **RETURN** key. Try it and watch what happens. The screen should clear (i.e. go blank), and a copyright notice will appear briefly. After this, the screen will clear again and the main menu will appear.

If these things do not happen, it may be due to one of the following:

a) Your install was not successfully performed.

b) Some QUICKCODE files are missing from the disk.

c) The wrong kind of disk is being used.

d) You don't have enough computer memory (unlikely).

Please check these and also check Appendix A of this manual before giving up.

QUICKCODE MAIN MENU

QUICKCODE: HELP FOR THE WEARY USER

SCREEN EDITING COMMANDS						OTHER COMMANDS			
CMD	ENTER	CMD	ENTER	CMD	ENTER	CMD	ENTER	CMD	ENTER
RIGHT		LINE		GRID		HELP		FIELDS	
LEFT		COLUMN				SAVE			
UP		DEL LIN				EXIT			
DOWN		DEL COL				*QUIT			
MIDDLE		CENTER							
LMARGN		LSHIFT							
RMARGN		RSHIFT							
TAB		*ERASE							

COMMANDS YOU CAN TYPE NOW

CMD	WHAT IT DOES:	CMD	WHAT IT DOES:	PROGRAMS TO GENERATE
C	CONFIGURE SYSTEM	O	OLD SCREEN	
S	SCREEN CHARACT.	N	NEW SCREEN	
X	OUTPUT OPTIONS	T	LOAD TEXT FILE	
M	QUICKMENU		GENERATE PGMS	
Q	** QUICKSCREEN MODE	E	*** EXIT ***	

---CURRENT SCREEN IS

2. The Main Menu

If you have gotten the main menu to appear and it is readable, then you can assume that your installation was O.K. Although you will not be using the main menu most of the time, it is important to understand what is on it, since it contains a lot of useful information.

The main menu is divided into four sections, each with its own title:

Section a) - COMMANDS YOU CAN TYPE NOW

This section is located at the lower left part of the screen. It lists all the commands you can type now, while the menu is on the screen. Each command is given by typing one letter. There is no need to press **RETURN**. For example, to exit from QUICKCODE, simply press E **If you make a mistake or QUICKCODE says there is an error, just press RETURN then try again. The most common commands you need to use are:**

N - **New Screen.** This will allow you to change the name of the screen (and all programs) that you are creating. Each screen you create should have a unique name, which can be up to 8 characters long. (See the CP/M manual for details on file names.) For example, you might have a screen layout and programs for a mailing list. In this case, simply press **N** When QUICKCODE asks you for the new name, type **MAILLIST** and press **RETURN**. Your new name should now appear on the main menu next to **CURRENT SCREEN IS**. It is important to make sure that you don't use a name you have already used for some other screen or you may accidentally destroy the old screen and programs. If you don't specify a new name, QUICKCODE will assume the name is "NONAME."

Q - **QUICKSCREEN Mode.** This will allow you to go to the electronic blackboard and tell QUICKCODE what you want it to do for you. Remember that anytime you are in QUICKSCREEN mode you can always come back to the main menu simply by typing ? which is the "help command."

O - **Old Screen.** This will allow you to retrieve a screen which you created previously and have saved on the disk. QUICKCODE will ask you for the screen name and will let you know if it is not able to find the screen.

Note: All screen names can begin with the name of the disk drive you want the screen and programs to be on (e.g. B:MAILLIST).

Section b) SCREEN EDITING COMMANDS

This section is located at the upper left part of the screen. It lists all the editing commands you can type when you are in QUICKSCREEN mode drawing on the blackboard. Most of the commands are for moving the cursor around on the screen or drawing lines. These commands are similar to those of many word processors. On the menu, the commands are shown with their abbreviated names, like **CTRL-D**. These are called control characters, because you use the **CTRL** key on your keyboard to type them. The way you type a control character like **CTRL-D**, is to press the **CTRL** key, hold it down, and then press the **D** key, after which you can release the **CTRL** key. It is very similar to using a shift key when you capitalize the first letter of a name. All screen editing commands are described in detail in the section on QUICKSCREEN Mode. **All commands can be redefined to suit your preference.**

Section c) OTHER COMMANDS

This section is located at the upper right part of the screen. It lists all the other commands you can type in QUICKSCREEN mode (such as instantly saving your screen in an emergency or re-displaying the main menu to get help). These are also described in the section on QUICKSCREEN Mode.

Section d) PROGRAMS TO GENERATE

This section is located at the lower right part of the screen. It lists all the kinds of programs QUICKCODE is ready to write if you give it the go-ahead. This is described in the section on program generation.

Proceeding with your **mailing list**, enter Q to go to QUICKSCREEN mode.

3. QUICKSCREEN Mode

QUICKSCREEN Mode is the name for the blackboard that you use to tell QUICKCODE what you need. As with any blackboard, you can draw and erase whatever you like. When you finish, the image you drew will be used to set up your dBASE file and write programs for you. This image is called your "screen."

You will find when you first enter QUICKSCREEN mode that there is some information on top of the screen showing your current line and column location, as well as the name of your screen and database. For example, you may see:

LINE: 2 COLUMN: 0 (AUTO PILOT ON) SCR:MAILLIST DBF:MAILLIST

This means that the cursor is at line 2, column 0, the Automatic Pilot is on, and that you are building a screen called **MAILLIST** which will read a database (disk) file.

In addition, you will notice that there are two other lines on which various things have already been drawn for you. These have been put there by the Automatic Pilot. You can get rid of them if you don't like them, but for now it is best to leave them alone.

All you need to worry about right now is "what information do I want to keep in the computer?" To do this right, you should sit and make a list on paper of the things you want to keep. In addition, you should estimate how long each of these things could get if you typed it on a typewriter, because you are going to have to reserve space for it in QUICKCODE.

Here is a sample of what you might come up with if you were setting up a mailing list:

NAME - **Maximum of 30 letters/spaces**

STREET ADDRESS - **Maximum of 30 letters/numbers/spaces**

CITY - **Maximum of 20 letters**

STATE - **Maximum of 2 letters**

ZIP - **Maximum of 5 numbers**

AMOUNT - **Maximum of 6 characters**

The above means that the biggest **AMOUNT** you need to put into the computer would be **999.99**, since this takes up 6 characters. The largest number that QUICKCODE allows is 11, which would include **99999999.99** (one less than 100 million). If you need more than this, you probably need a larger computer!

Now, let's say you want to keep all of the above information in your **MAILLIST** computer file. If you are not fussy about how fancy the screen is to look when the data is entered, you could just type the following wherever you like on the screen: (Remember that if you need to know how to move the cursor up, down, left or right, all you have to do is type ? and the main menu will tell you how to do it.)

```
Line 2:     ;NAME
Line 3:     ;ADDRESS
Line 4:     ;CITY
Line 5:     ;STATE
Line 6:     ;ZIP
Line 7:     ;AMOUNT$
```

You will notice a couple of interesting things about this:

First, everything begins with a semi-colon (;) and second the **AMOUNT** field ends with a dollar sign ($).

There are good reasons for both of these. The semi-colon is there because these names represent data fields and are not the actual titles that will appear on the screen when you go to enter or retrieve data. They are your own personal names for the information you want to keep track of and they will be used by QUICKCODE to write your program for you. If you want to have a title appear on the screen during data entry, simply type that title on your blackboard wherever you'd like to see it, but don't use a semi-colon in front of it. Here are two ways you might do this:

```
CUSTOMER ;NAME        or        CUSTOMER
                                ;NAME
```

In either case, the word **CUSTOMER** will actually appear when the data is to be entered, the word **NAME** will not. Please note that the title (i.e. CUSTOMER) can be any phrase you choose and does not have to be similar to your personal field name.

So, the purpose of the semi-colon is to distinguish data field names from titles and other things on the screen. But what is the purpose of the dollar sign at the end of the amount field?

There are different kinds of information that you can store in a computer. Some are collections of letters and numbers which you just want to store and retrieve without worrying too much about the details. These are called **character** fields, because you can put any sort of character into them (kind of like some political parties). For example, you can store the following in a character field: **R&R** or **John's.**

Then there are special fields, which can only contain certain kinds of information. In QUICKCODE, **money** fields are special fields, because you can only put legitimate dollar

amounts into them (e.g. **1234.39**). To distinguish a **money field** in QUICKCODE, you put a **dollar sign** at the end of the name.

Example:

Suppose you put the following on your blackboard:

```
Line 2:          ASSOCIATE     ;NAME
Line 3:       AMOUNT OWED      ;OWE:AMT$
Line 4:               AGE      ;AGE#
```

This demonstrates several things about QUICKSCREEN mode. Let's take it line by line:

Line 2: The title that will be displayed when you enter data is **ASSOCIATE** because it does not begin with a semi-colon. The data field is called **NAME** and it is a character field, since it does not end with any special character (such as $).

Line 3: The title that will be displayed when you enter data is **AMOUNT OWED.** As you can see, titles don't have to be just one word. They can be anything you like, as long as they don't begin with semi-colon and are followed by at least one space.

The data field is called **OWE:AMT** and it is a money field, because there is a dollar sign at the end. The dollar sign is not part of the name. Also, notice that you can use a colon in your field names, as well as letters and numbers, but nothing else, especially not spaces! In this version of QUICKCODE, the dBASE **P.** and **S.** notation for field names is not allowed for database fields. These are due to the rules of dBASE-II. One last rule: **field** names can be no more than 9 characters long (not counting the special character at the end).

Thus, the following are **legal:**

;AB1:COD (numbers, colon allowed)

;STATEMENT$ (name doesn't include $)

;CUST:NAME

But, the following are **illegal:**

;SMITH'S (only letters, numbers, colons allowed)

;CUST NAME (no spaces allowed)

;PURCHASING (too long - the maximum is 9)

Line 4: The title that will be displayed is AGE. The field name also happens to be AGE. The number sign # at the end of the name indicates that this is another special kind of field - an **integer** field. That means that you can only put whole numbers into this field.

In summary, here are the three types of fields you can use in QUICKSCREEN mode:

;NAME	Character field
;AMOUNT$	Money field (dollar sign)
;AGE#	Integer field (number sign)

Once you have defined all your data fields on the screen, you have a choice of what to do next. If you want to create your database file and programs, you can do that now.

If you create your file and programs at this point, you will probably not get the most efficient programs, because you have still not told QUICKCODE some other things about your fields. However, as a test, we suggest you press **ESC** (the key marked ESC), which is the command to exit from QUICKSCREEN mode and generate programs. (If you want to improve your database and programs later, you can always call up **MAILLIST** using the **O** for **O**ld command on the main menu.)

If you decide to try this now, please skip to section 5, **Program Generation**, and continue reading the sections, **Leaving QUICKCODE** and **Using Your Programs.**

Here is a summary of the Screen Editing and the Other Commands you can use in QUICKSCREEN mode:

Screen Editing

RIGHT - This will move the cursor one space to the right

LEFT - This will move the cursor one space to the left

UP - This will move the cursor up one line. (At the top of screen, it will put the cursor at the bottom.)

DOWN - This will move the cursor down one line. (At the bottom of the screen it will put the cursor at the top.)

MIDDLE - This will put the cursor at the center of whichever line it is on.

LMARGN - This will put the cursor at the left margin of the line it is on.

RMARGN - This will put the cursor at the right margin of the line it is on.

TAB - This will move the cursor to the next TAB stop on the line it is on. (This command can usually be entered by pressing either the **TAB** key or entering **CTRL-I**.)

LINE - Entering this command tells QUICKCODE you want to draw a horizontal line to the right. The next key you press will be used as the line drawing character. (If it is a space, all lines below this line will be shifted down one line.) For example, to draw a line of dashes, enter **CTRL-L** and then press the dash key.

COLUMN - Entering this command tells QUICKCODE you want to draw a vertical line to the bottom of the screen. The next key you press will be used as the line drawing character. (If it is a space, all columns to the right will be shifted to the right one column.)

DEL LIN - This command will delete anything to the right of the cursor on the line it is on. (If the entire line was already blank, all lines below that line will be shifted up one line.)

DEL COL - This command will delete anything below the cursor in the column that it is on. (If the entire colulmn was already blank, all columns to the right of the cursor (on the lines below the line the cursor is on), will be shifted one column to the left.

The above line drawing and deletion commands are best learned by actual practice.

CENTER - This will center all text on the line that the cursor is on.

LSHIFT - This will shift to the left all text that is to the right of the cursor on that line, similar to a word processor.

RSHIFT - This will shift to the right all text that is to the right of the cursor on that line.

ERASE - This will erase the entire contents of the screen. (Use with caution.)

GRID - This will cover the screen with a "grid" of dots, filling in all the empty space, so that distances and sizes can be more accurately seen. When the grid is already there, this command will remove it.

Other Commands

HELP - This will cause the main menu to appear, after which you can return to QUICKSCREEN mode.

SAVE - This will save your screen layout to the disk in case an emergency requires this to be done immediately. It will create the same kind of .SCR file that is created by program generation.

EXIT - This will cause QUICKSCREEN mode to end and program generation to begin.

QUIT - This will exit immediately to CP/M. All changes made since the last "save" to disk will be lost. (Use with caution.)

FIELDS - This will send QUICKCODE to "fields mode," which is described in the next section. The same command can be used in fields mode to return to QUICKSCREEN mode.

With a little practice, these commands can be combined to create very impressive-looking screens very quickly.

4. Fields Mode

Fields Mode is one of the most useful and powerful features in QUICKCODE. In fields mode, you can control the size and type of data fields you need, as well as specify automatic values and automatic error checking for all fields. To explore the full power of fields mode, you should study the section on it in the **QUICKCODE IN DETAIL** part of this manual. In this section, we will provide some of the basic things you need to do most of the time in fields mode.

You can think of fields mode as a directory or catalog of all the fields you put on your screen in QUICKSCREEN mode. In fact, the only way you can get into fields mode is to put some fields on the screen in QUICKSCREEN mode and then enter the "fields" command (shown on the main menu under "Other Commands").

When you go into fields mode, you will see a numbered list of all your fields going down the screen. If the list is long enough, you may need to go to a second or third screen to see them all. The current limit (due primarily to dBASE) on the number of fields per screen is 32.

The first thing you will probably notice is that the special characters (i.e. $ and #) are missing from the money and integer fields. This is because they are not really part of the field names, but just put on the screen to indicate the type of field.

Remember that at any moment, while you are in fields mode, you can go back to QUICKSCREEN mode and change your screen, simply by entering the same "fields" command you used to get into fields mode. Also, any time you need to know any commands, you can use the same help command to see the main menu as you did in QUICKSCREEN mode. When you want to go back to fields mode from the main menu, however, you will need to go to QUICKSCREEN mode first. Try this out: Go back and forth between QUICKSCREEN mode and fields mode by entering the fields command.

Before you do anything in fields mode, you should always look at the rightmost column on the screen, with the heading **ER**. This is the "error" column, which shows you the error status for each field on the screen. The only fields you can work with in fields mode are the ones which have a zero in this column. If a field has another number in the error column, you may need to go back to QUICKSCREEN mode and fix it. Here are the error codes currently used:

Code	Meaning	How to Fix
0	No error	
1	Field name too long	Go to QUICKSCREEN mode and make it 9 characters or less.
2	Illegal character	Go to QUICKSCREEN mode and remove the illegal character.
3	Display-only field	No need to fix. Indicates a display-only field (described later).
4	Too many fields	Eliminate all database fields over 32.

Cursor Movement

In fields mode, you work with a field by moving the cursor to that field. The cursor movement commands are the same as in QUICKSCREEN mode: Left, right, up and down. The only difference is that when you move left or right in fields mode, instead of the cursor moving one space left or right, it will move to the next column heading on the left or right. Moving up and down is the same, except that you can also move down by pressing **RETURN**.

Example:

If the cursor is positioned on the column entitled **FIELD NAME** and you enter the QUICKSCREEN Mode command to move the cursor to the right, it will move to the column entitled **T** (which indicates the type for each field).

Similarly, if the cursor is positioned on the column entitled **MINIMUM** and you enter the command to move the cursor to the left, it will move to the column entitled **DEFAULT**.

Moving up and down is the same as in QUICKSCREEN mode. You can move from one field to the next one or previous one simply by moving the cursor up or down. If you used more than 22 fields when you were in QUICKSCREEN mode, you will have to look at a second (and maybe a third) fields screen to work with all your fields. You can move to the next fields screen by going to the last field on a screen and then entering the "cursor down" command. You can go back to a previous fields screen (for example from item #34 to item #2) by going to the first field on the screen and entering the "cursor up" command.

One additional note: When you are in the process of changing a field, if you move the cursor left, right, up or down, the value that was in that line and column location will return

to what it was before you started to change it. This way, if you change your mind, you don't have to remember the original value.

What the Columns Mean

Each of the columns on the fields screen has a special meaning which can have a big effect on the programs you generate. Each column has an entry for every field on the screen. If it looks empty, the entry is actually "spaces." A few columns contain information for your use, but you cannot change them while you are in fields mode. These are:

- This indicates the number of each field in the same order that they appeared in QUICKSCREEN mode.

FIELD NAME - This is the name of each field, as you typed it in QUICKSCREEN mode. It does not include the semi-colon or the special ending characters.

ER - This is the error code for each field. If it is zero, you can work with the field on that line.

The rest of the columns can be changed as you work in fields mode. The most important ones are the field type and length, which have the column headings **T** and **LEN.** The rest of the columns are a bit more involved. They will be described briefly below, but all the detailed technical information about them is contained in the fields mode section in the part of this manual entitled, **QUICKCODE IN DETAIL.**

Field Types

You can change the data type of a field by moving the cursor to the line on which that field is found and then to the column entitled **T.** There are actually quite a few field types in QUICKCODE, even more than are actually found in dBASE itself! (The **QUICKCODE IN DETAIL** section provides more information about this.) The three most important types of fields are called the "primary types." These are the only ones you can use in **QUICKSCREEN** mode to set up a field. They are, of course, the familiar three types that you read about earlier, namely:

Character
Money
Integer

If you want to have a field of a type different than these, you must first start with one of these three in QUICKSCREEN mode and then go into fields mode to change the type.

Before you consider using a different type, review what the above three types mean:

Character - Can store for you any combination of characters, punctuation marks, etc., such as names and descriptions.

Money - Can store for you any number with two decimal places accuracy.

Integer - Can store for you any whole number.

Now, here are the additional types you can set up when you are in fields mode:

Numeric - This will store for you any number with one decimal place accuracy (i.e. to tenths).

Date - This will store for you any date in **MM/DD/YY** format.

Telephone - This will store for you any telephone number in the form of **(999)999-9999**, where each nine stands for any number between 0 and 9.

Social - This will store for you any social security Security number in the form of **999-99-9999**, where each nine stands for any number between 0 and 9.

There are **two restrictions** you must follow when you change a field type to one of these four "non-primary" types:

1. If you are setting up a "numeric" field (i.e. one decimal place), the primary type which you used in QUICKSCREEN mode must have been "money" (i.e. the name must have been followed by a $). For the other three field types (date, telephone, social security), the primary type which you used in QUICKSCREEN must have been "character." If you used the wrong type in QUICKSCREEN mode, you can fix it by going back to QUICKSCREEN mode (enter the fields command) and adding or removing the special character at the end of the name.

Example:

QUICKSCREEN MODE	FIELDS MODE		
	#	FIELD NAME	T
;AMOUNT$	1	AMOUNT	$

You cannot change the field type of "amount" to be a date or telephone number, because it was not originally a "character" field in QUICKSCREEN mode. If you want to make it a date or telephone number in fields mode, you must go back to QUICKSCREEN mode and remove the $. (A change of name in QUICKSCREEN mode would probably make sense, too.)

2. The other restriction on changing field types is that you cannot change a field type unless the columns for that line entitled **DEFAULT, MINIMUM,** and **MAXIMUM** all contain the value ***NONE***. This is explained further in QUICKCODE IN DETAIL. (In case you have somehow got a value other than ***NONE*** in one of these columns, you can get rid of it by moving the cursor to that column and entering **CTRL-N**, after which you can move back to the **T** column and change the field type.)

To change the field type for a given field, all you have to do is type the code letter for that field. If you type an illegal code letter, QUICKCODE will display a list of the legal code letters. The code letters are:

N - Numeric (1 decimal place)
I - Integer
C - Character
$ - Money
D - Date
T - Telephone
S - Social Security

If you type a legal code letter, QUICKCODE will display on the bottom of the screen the phrase that it displays whenever you successfully make a change in fields mode, namely **O.K.**

Field Lengths

You can change the length (i.e. size) of a field by moving the cursor to the line on which that field is found and then to the column entitled **LEN.** To change the length, simply type the new length that you want and press **RETURN.**

Before describing the restrictions on how you can set field length, it is important to know how QUICKCODE sets up field lengths originally.

When you put your field names on the screen in QUICKSCREEN mode, you were actually telling QUICKCODE, "I don't care how big these fields are, use the biggest lengths you can." And unless you tell QUICKCODE otherwise, that's exactly what it does. The lengths you will find set for you by QUICKCODE when you first enter fields mode are as follows:

Character fields - As far as the field can go until it reaches the end of that line (unless there is another field or something else to the right of it on that line). Thus, the longest a character field could be set to is 79.

Money/Integer field - A maximum of 11, unless either the line ends before that or there is another field or title to the right of it.

You can see why it is useful to go to fields mode before you start generating programs. If you don't, you will probably create files which waste a lot of space, because the field lengths are too big. (There is another way to control field length, which is described in **QUICKCODE IN DETAIL.**)

There are restrictions you must follow when changing field lengths:

1. The new length must not go past the end of the line or "collide" with anything else on the screen in QUICKSCREEN mode. If you enter a length that will violate this restriction, QUICKCODE will display an error message, telling you the maximum length that is allowed.

2. The new length must not be greater than the maximum allowed for that field type. The maximums allowed are:

Character	**- 79**
Money/integer/numeric	**- 11**
Date	**- 8**
Telephone	**- 13**
Social Security	**- 11**

You may notice QUICKCODE displaying the message **SCREEN ADJUSTED** when you change field lengths. You may also notice that QUICKCODE automatically changes the field length for you when you change a field type. This is done for your convenience. Sometimes the screen you entered in QUICKSCREEN mode may need to be automatically changed because of a change you made in fields mode.

Example:

QUICKSCREEN mode

```
;NAME
```

FIELDS MODE

```
#  FIELD NAME  T  LEN
1     NAME     C   63
```

This field length was automatically set for you because you put the field name at column 17 in QUICKSCREEN mode. Since not too many names are 63 characters long, if you want to change the length to 35, all you have to do is type that value over the 63 and press **RETURN.** If you type a length that would go past the end of that line (e.g. 71), QUICKCODE will tell you "**MAX OF 63 ON SCREEN.**"

File Status

The next column on the fields screen is entitled **F**, which stands for file status. This column allows you to do things like set up key fields for your file. It is described further in **QUICKCODE IN DETAIL.** For now, it is best to leave it alone.

DEFAULT

This column allows you to set up a "default" value for each field that will become the automatic value for that field when you are entering data into your file. You can override such an automatic value (not in QUICKCODE, but when you are actually entering data), simply by typing in the value you actually want. This is completely described in **QUICKCODE IN DETAIL.**

MINIMUM/MAXIMUM

These columns allow you to set up a minimum and maximum acceptable value that you wish to allow when data is being entered into each field. This is completely described in **QUICKCODE IN DETAIL.**

ERROR MESSAGE

This column will allow you to specify an error message of up to 14 characters that you would like to appear during data entry when an illegal value is entered for a field.

VALIDATION

The column entitled **VAL** is very important. It allows you to specify what type of automatic validation (i.e. error checking) you would like performed when data is entered into each field. There are three types of error checking: **Minimum/maximum, list checking, and file checking.** Each is described fully in **QUICKCODE IN DETAIL.**

This section on fields mode does require some time to think about and absorb. The best way to learn it is to create some screens and programs and practice with it. If you are still working on your first screen, it is better to skip fields mode until you have generated and run a few programs for practice.

5. Program Generation

Program generation is the activity that all of the above has been leading up to. It is this function of QUICKCODE that creates the programs which you can use with dBASE to do your work. There is not much you have to do during program generation except watch while QUICKCODE writes programs that would have taken you many hours to write yourself (or cost plenty to have someone write for you). Most of the work you have to do to generate useful programs is in QUICKSCREEN mode and fields mode.

Program generation is started by entering the exit command (usually **ESC**) either while the main menu is on the screen or you are in QUICKSCREEN mode. The advantage of doing this from the main menu is that the main menu displays a list of all the programs that QUICKCODE is going to write for you, so you can see if everything you want is there. In addition to writing programs, QUICKCODE will also create an empty data file into which you can immediately start to enter data. It can also create a screen image file which you can print on paper for documenting your screens and a screen description file. You do not have to create all of these for every screen you set up, but you can if you wish.

Here is how program generation works:

For each screen you build, there is a unique name that you set up on the main menu. This is called your screen name. When you tell QUICKCODE to generate programs for a screen named **MAILLIST**, it will create all of the following on your disk (assuming you told QUICKCODE you wanted them all):

Files

MAILLIST.SCR	-	Screen description
MAILLIST.DBF	-	Empty data file
MAILLIST.PRN	-	Screen image for printing

Programs

MAILLIST.ADD
MAILLIST.CMD
MAILLIST.ED
MAILLIST.FAU
MAILLIST.GET
MAILLIST.GO
MAILLIST.IO
MAILLIST.LBL
MAILLIST.OUT
MAILLIST.RPT
MAILLIST.VAL
MAILLIST.WS

Each of these programs are described fully in **QUICKCODE IN DETAIL.** They all begin with the same first name, but have different last names to tell when they do. It is the last names that are shown on the main menu to tell which programs will be written.

Automatic Pilot

The Automatic Pilot which was mentioned earlier has a big effect on the programs which are produced. If the Pilot is on, the programs will be complete and you can run them without any programming. If it is off, the programs will be more suitable as parts of a system that you can put together with some programming. QUICKCODE comes with the Automatic Pilot turned on, but you can turn it off using one of the "other menus" described later in this manual. Similarly, QUICKCODE comes set up to generate nearly all of the files and programs listed above, but you can turn off any of these by using one of the "other menus."

As QUICKCODE generates each program, it will display a message telling you it was successful. If there is a problem, an error message will appear. The most common cause for an error message is that you have run out of disk space. Before generating programs, check to make sure your disk has at least 30K to 40K free and 15 file names still free.

6. Leaving QUICKCODE

There are two ways to leave QUICKCODE, but one is very dangerous.

The **recommended way** to leave QUICKCODE is to press **E** for exit when the main menu is on the screen. QUICKCODE will ask, **ARE YOU SURE(Y/N)?** because you may lose all your work if you are not careful. When you leave QUICKCODE, you automatically lose any screen work you have done since the last time you did program generation or typed the **SAVE** command. This includes work in both QUICKSCREEN and fields modes, which might have taken an hour or two of your time! To avoid losing this work, when QUICKCODE asks you if you're sure, press **N**.

The other, **more dangerous, way** to leave QUICKCODE is by using the QUIT command in QUICKSCREEN mode. This will cause an immediate halt to QUICKCODE and will most certainly result in a loss of your work.

You should **never** leave QUICKCODE without doing program generation, because this is when all of your work is saved to disk. If it is saved to disk, the next time you run QUICKCODE, you can call up the old screen for further work by using the **O** for "old" command on the main menu.

7. Using Your Programs

This section will describe how to use the programs you build, as described in the preceding sections. If you are on to fancier stuff (e.g. keyed files or validation), you should skip to the sections in **QUICKCODE IN DETAIL** which cover this material. This section assumes that you have created a very simple screen called **MAILLIST** and want to use the simple dBASE programs that QUICKCODE wrote for you.

Here is how to do it step by step:

Step 1 - Create your screen and programs. Let's say you did the simple screen we saw in section 3, QUICKSCREEN mode:

```
Line 1: - - - - - - - - - - - - - - - - - %MQ:MODE - - - - - - -
Line 2:          ;NAME
Line 3:          ;ADDRESS
Line 4:          ;CITY
Line 5:          ;STATE
Line 6:          ;ZIP
Line 7:          ;AMOUNT$
```

This screen has no titles (although the things on line 1 and 20 were put there by Automatic Pilot for convenience). There are 6 data fields. Let's assume that you did not use fields mode, so that QUICKCODE automatically set up the field types and lengths for you.

Assuming you have successfully completed program generation and exited from QUICKCODE, you should put all your MAILLIST files on the same disk as dBASE is on. (If not, you will have to use the dBASE command **SET DEFAULT TO** to tell dBASE which disk (e.g. A,B, or C) the programs and the data file are on.)

Step 2 - Startup: You can start up your programs in two ways:

A>DBASE MAILLIST or **A>DBASE RETURN**
ENTER DATE(MM/DD/YY) RETURN
.DO MAILLIST

The next thing that should happen is that the screen will clear. A "master list" of choices will then be displayed:

A to ADD

G to GET

R to RUN REPORT

W to CREATE WordStar/MailMerge FILE

L to PRINT MAILING LABELS OR FORMS

Q to QUIT

You should now press one of the above letter keys, depending on what you want to do. If you press anything else, the list will simply be displayed again.

Here is what the choices will do:

A - This will allow you to add as many people as you wish to your mailing list.

G - This will allow you to look at anyone your mailing list, browse through the list, change someone on the list, delete someone from the list, or print someone on the list.

R - This will allow you to run a report which you have previously created to run.

W - This will allow you to take all the data in your file and put it into a data file thast you can use in WordStar/MailMerge to create form letters.

L - This will allow you to print mailing labels of <u>any</u> size or print forms.

Q - This will exit from your program back to CP/M.

The rest of this section will go into each of these in a little more detail. The complete explanation of how they work is found in **QUICKCODE IN DETAIL.**

Step 3 - **Adding to Your File**

You need to add to your file every time you put new names on your list. When you press **A** to add, the screen should clear, the word **ADD** should appear on the top of the screen, and you should see a colon where each of your data fields is to be entered. (If you put your own titles on the screen, these will appear on the screen, too:)

<u>Example</u>

Assuming no titles of your own, you would see:

```
                - - - - - - - - - - ADD - - - - - - - - - - - - - -
Line  2:    :
Line  3:    :
Line  4:    :
Line  5:    :
Line  6:    :
Line  7:    :     0.00:
      .
      .
      .
Line 21:    MAKE AS MANY ENTRIES AS YOU WANT
Line 22:    WHEN DONE ENTER BLANKS FOR NAME
```

You should now type the name on line 2, address on line 3, city on line 4, state on line 5, zip code on line 6, and amount on line 7. After each field, you must press **RETURN** to go to the next field. The screen will clear and reappear with the fields empty once again. You can keep adding names by typing into all the fields. When you are done entering names, leave the name field (line 2) blank and press **CTRL-W** (or press **RETURN** until the screen clears) and the "master list" of choices described earlier will once again be displayed. All the people you added will now be on file.

Step 4 - Looking at Your File

To look at names in your file, when the "master list" is displayed, press G. The screen should clear and then the first name in your mailing list will be displayed. At the bottom of your screen, the following will be displayed:

ENTER N FOR N, P FOR PREVIOUS
S FOR SEARCH, M FOR MORE
PRESS RETURN WHEN DONE

The program will now wait for you to make your choice. Here is what each choice will accomplish:

N Entering **N** will cause you to move up one name in the mailing list, displaying the next name on your screen.

P Entering **P** will cause you to move backwards one name in the mailing list, displaying the last previous name on your screen.

Using the above two commands, you can "step" your way backwards or forwards through your mailing list. If you want to look for a particular name, you should use the following command:

S Entering **S** will cause you to look through the entire mailing list for a particular name. If you enter **S**, the screen will clear and you will be asked,

PLEASE ENTER VALUES TO SEARCH FOR

Type in the name you are looking for, and press **RETURN**. If it is found, it will be displayed. Otherwise, an error message will be displayed. Once you have found the name, you can "step" forward or backward from that name.

Assuming you have found the particular name you are interested in, you can now do several things with it: edit it, delete it, or print it. To do any of these, enter **M** for more.

M This will allow you to do more with any name you have found on your list. When you enter **M**, the following will be displayed at the bottom of the screen:

ENTER E TO EDIT, D TO DELETE
P TO PRINT, PRESS RETURN WHEN DONE

If you enter **E**, you will be able to change any of the fields being displayed. If you enter **D**, the name being displayed will be deleted from the mailing list. If you enter **P**, the name being displayed will be printed on your printer, exactly as it appears on your screen. If you press **RETURN**, you will be returned to the "get" screen, where you can "step" forward or backward through the list again.

When you are done stepping through the list, press **RETURN** to go back to the master list of choices to do something else.

Step 5 - Running Reports

If you need to produce simple reports, when the master list is on the screen, press **R** to run reports. This will allow you to create or run reports using the dBASE built-in report writer. You will be able to send your reports to the printer, a disk file for future use, or to your own screen.

When you press **R**, the program will ask you

WANT REPORT SENT TO THE PRINTER?
If you enter **Y**, your report will be sent to the printer. If you enter **N**, the program will ask you
WANT REPORT SENT TO A FILE?
If you enter **Y**, the program will ask you for the name of the disk file that you want to send your report to. If you enter **N**, your report will be sent to your own screen. Next, the program will say:
ENTER REPORT NAME

Here, you should enter the name of the report you want to run. If you enter a report name which **does not** already exist, you will automatically go into the dBASE report generator, where you can define the new report. Reports which **exist** will simply run.

Step 6 - Creating WordStar/MailMerge Files

One of the things you often need to do with the information in your files is to use it in a form letter or other document using a word processor like **WordStar**. QUICKCODE provides a very nice facility for doing this.

To use data in WordStar/MailMerge, it must be in a special kind of file, which is called a MailMerge "data file". In

addition, your document or letter must contain certain special commands to tell MailMerge how to read the data file. To properly use MailMerge this way, you need to read the MailMerge documentation itself. This manual will simply show you how to create the data file.

Begin by entering **W**, when the master list is on the screen. The program will respond by saying **NAME OF DATA FILE FOR WordStar.** Enter the name you would like to use for your document. For example, if you are announcing a new product, the dialogue might be as follows:

```
NAME OF DATA FILE FOR WordStar? ANNOUNCE
CREATING DOCUMENT FILE: ANNOUNCE.DOC
CREATING DATA FILE: ANNOUNCE.DAT
```

In this case, the program has created two files. The **ANNOUNCE.DOC** file contains the special MailMerge commands that must appear at the start of your letter. All you need to do now is put your letter into this file below those the commands, by running WordStar:

```
WS ANNOUNCE.DOC
```

The **ANNOUNCE.DAT** file contains all the data from your dBASE **MAILLIST** file in a form that can be read by MailMerge. Once you put your letter into the **.DOC** file, all you have to do to get form letters is run MailMerge.

Warning: If you are planning to create the **.DAT** file more than once, using the same first name, be sure to change the first name of your old **.DOC** file so that your letter won't be wiped out when the **.DOC** file gets re-created. (This is an easy way to wipe out hours' worth of work.)

Step 7 - Creating Mailing Labels & Forms

Another important thing that you often need to do with your database is printing mailing labels or forms. QUICKCODE provides a powerful facility for doing this. The program to do this will go through each and every record in your database and print it on a mailing label or a form.

To get labels or forms, while the master list is on the screen, press **L.**

The program will now say:

```
HOW MANY LINES PER LABEL/FORM?
 (ENTER 0 TO GET PAGE EJECTS)
PLEASE COUNT THE SPACE BETWEEN LABELS
```

At this point, you should decide whether you want your printer to do a page eject (i.e.form feed) after each label/form or if you want to print your label/form without putting each on a new page. If you want page ejects, just enter **0** for the number of lines per label/form. Otherwise, figure out how many lines per label you actually want. (This can be determined by counting the number of print lines from the top of a label to the next label.) Enter this number. The program will tell you to set up your printer. Then press **RETURN** and the labels/forms will start to print.

8.Example: Mailing List

Screen Display in QUICKSCREEN Mode:

```
      MAILING LIST
      ------------

CUSTOMER NAME     ;NAME

ADDRESS           ;STREET
                  ;CITY          ;STATE
                                 ;ZIP

TELEPHONE #       ;PHONE

BALANCE DUE       ;BALANCE$

DATE LAST PMT     ;PAY:DATE

ON ORDER          ;ON:ORDER#

------------------------------ PLEASE ENTER YOUR CHOICE ------------------
```

Screen Display in Fields Mode:

#	FIELD NAME	T	LEN	F	DEFAULT	MINIMUM	MAXIMUM	ERROR MESSAGE	VAL	E
1	NAME	C	35	1	*NONE*	*NONE*	*NONE*	*NONE*	*	
2	STREET	C	35	F	*NONE*	*NONE*	*NONE*	*NONE*	*	
3	CITY	C	15	F	*NONE*	*NONE*	*NONE*	*NONE*	*	
4	STATE	C	2	0	NY	NYNJCNPAMA	CAORWAAZTX	ILLEGAL STATE	L	
5	ZIP	C	5	F	10005	00000	99999	ILLEGAL ZIP	*	
6	PHONE	T	13	F	*NONE*	*NONE*	*NONE*	*NONE*	*	
7	BALANCE	$	8	F	0.00	*NONE*	*NONE*	*NONE*	*	
8	PAY:DATE	D	8	F	*NONE*	*NONE*	*NONE*	*NONE*	*	
9	ON:ORDER	I	4	F	0	0	9000	BAD QUANTITY	*	

Screen Display (.PRN) File

```
     MAILING LIST
     ------------

CUSTOMER NAME    :                                        :

ADDRESS          :                                        :
                 :                 :   :   :
                                       :     :

TELEPHONE #      :                 :

BALANCE DUE      :          :

DATE LAST PMT    :          :

ON ORDER         :     :

---------------------------- PLEASE ENTER YOUR CHOICE ----------------------
```

```
*     MAILLIST.GO     -STARTUP & INDEX PGM
*   USE THIS PGM TO START A KEYED DATA FILE
*   OR RE-INDEX AN EXISTING ONE
SET TALK OFF
SELECT PRIMARY
USE  MAILLIST
INDEX ON   STATE+ NAME  TO  MAILLIST

0A^
```

TYPE B:MAILLIST.IO

```
*     MAILLIST.IO -INPUT/OUTPUT SCREEN
@ 01,13 SAY 'MAILING LIST'
@ 02,13 SAY '————————————'
@ 04,08 SAY 'CUSTOMER NAME'
@ 04,26 GET MNAME
@ 06,08 SAY 'ADDRESS'
@ 06,26 GET MSTREET
@ 07,26 GET MCITY
@ 07,45 GET MSTATE
@ 08,45 GET MZIP
@ 10,08 SAY 'TELEPHONE #'
@ 10,26 GET MPHONE PICTURE '(XXX)999-9999'
@ 12,08 SAY 'BALANCE DUE'
@ 12,26 GET MBALANCE PICTURE '99999.99'
@ 14,08 SAY 'DATE LAST PMT'
@ 14,26 GET MPAY:DATE PICTURE '99/99/99'
@ 16,08 SAY 'ON ORDER'
@ 16,26 GET MON:ORDER
0A^
```

TYPE B:MAILLIST.VAL

```
*     MAILLIST.VAL     -VALIDATION PROGRAM
STORE T TO MQ:VMORE
DO WHILE MQ:VMORE
IF  MSTATE  =  'NY'  .OR.  MSTATE  =  'NJ'  .OR.  MSTATE  =  'CN'  .OR.  MSTATE  =  'PA'  .OR.  MST
  STORE F TO MQ:VMORE
ELSE
IF  MSTATE  =  'CA'  .OR.  MSTATE  =  'OR'  .OR.  MSTATE  =  'WA'  .OR.  MSTATE  =  'AZ'  .OR.  MST
  STORE F TO MQ:VMORE
ELSE
 @ 23,0 SAY  '
 @ 23,0 SAY  ' ILLEGAL STATE -LEGAL VALUES ARE: NY,NJ,CN,PA,MA CA,OR,WA,AZ,TX '
@ 07,45 GET MSTATE
READ
ENDIF
ENDIF
ENDDO  MSTATE
```

.ADD Program

```
*     MAILLIST.ADD      -ADD PROGRAM
STORE T TO MQ:AMORE
DO WHILE MQ:AMORE
* SET UP DEFAULT VALUES
 DO  MAILLIST.FAU
ERASE
STORE  ' ADD '  TO MQ:MODE
* GET DATA TO ADD
DO  MAILLIST.IO
@ 21,10 SAY  ' MAKE AS MANY ENTRIES AS YOU WANT '
@ 22,10 SAY  ' WHEN DONE ENTER BLANKS FOR  STATE '
READ
* ARE WE DONE?
IF MSTATE  [|  '  '
* PERFORM VALIDATION
 DO  MAILLIST.VAL
 APPEND BLANK
* PUT SCREEN DATA INTO FILE
 REPLACE  NAME  WITH  MNAME
 REPLACE  STREET  WITH  MSTREET
 REPLACE  CITY  WITH  MCITY
 REPLACE  STATE  WITH  MSTATE
 REPLACE  ZIP  WITH  MZIP
 REPLACE  PHONE  WITH  MPHONE
 REPLACE  BALANCE  WITH  MBALANCE
 REPLACE  PAY:DATE  WITH  MPAY:DATE
 REPLACE  ON:ORDER  WITH  MON:ORDER
ELSE
    STORE F TO MQ:AMORE
ENDIF
ENDDO
RELEASE MQ:MODE,MQ:AMORE
* RELEASE INPUT FIELDS
RELEASE MNAME
RELEASE MSTREET
RELEASE MCITY
RELEASE MSTATE
RELEASE MZIP
RELEASE MPHONE
RELEASE MBALANCE
RELEASE MPAY:DATE
RELEASE MON:ORDER

0A^
```

B. QUICKCODE IN DETAIL

This section of the manual provides a complete description of every feature in QUICKCODE for the user who needs to create more sophisticated programs or who needs to "control all the details."

It is best to read section A, **INSTANT PROGRAMS**, before reading this section, because section A is a good introduction and an easier way to become familiar with most of the major features of QUICKCODE.

In this section, the description of functions is presented in a more sophisticated style which assumes that you have run the program and have some understanding of how the program works. It also assumes that you have familiarized yourself with dBASE-II by reading the dBASE-II User's Manual. Throughout the examples which follow, underlining is used to show what you would type into the computer. Everything else is what QUICKCODE will say to you.

1. Starting QUICKCODE

QUICKCODE is on your disk as a program file called **QC.COM**. It is run via one of the following CP/M commands:

QC or **QC nam**

If the first command is used, QUICKCODE will assume a screen name of **NONAME** and will go to the main menu.

If the second command is used, it is assumed that **nam** is the name of a screen which already exists or which you want to create. The **nam** can be one of three things:

- The name of a screen which already exists. You must not include the **.SCR** part of the screen name.

- The name of a screen which does not yet exist. If this is used, QUICKCODE will display **NEW SCREEN** right under the copyright notice.

- The name of a text file which you have created with an editor or word processor, which contains a screen layout that you'd like to use in QUICKCODE. The name must include the file name extension **.TXT** to tell QUICKCODE that this is a text file. The file itself may have up to 24 lines of up to 80 characters per line. Each line should also include a carriage return/line feed at the end of the line after the 80 characters.

If you load a screen which already exists via the **nam**, QUICKCODE will automatically bypass the main menu and go directly to QUICKSCREEN mode. This provides a fast way for you to work with your existing screens. Also note that any new screen which you create this way will automatically be given the characteristics you have set up as your default for new screens via the "S" menu (see the section on the "other menus").

2. The Main Menu

The purpose of the main menu and the various sections of it have been described in **INSTANT PROGRAMS.** This section will describe each of the main menu commands and some other things that happen on the main menu.

QUICKCODE MAIN MENU

QUICKCODE: HELP FOR THE WEARY USER

SCREEN EDITING COMMANDS						OTHER COMMANDS			
CMD	ENTER	CMD	ENTER	CMD	ENTER	CMD	ENTER	CMD	ENTER
RIGHT		LINE		GRID		HELP		FIELDS	
LEFT		COLUMN				SAVE			
UP		DEL LIN				EXIT			
DOWN		DEL COL				*QUIT			
MIDDLE		CENTER							
LMARGN		LSHIFT							
RMARGN		RSHIFT							
TAB		*ERASE							

COMMANDS YOU CAN TYPE NOW

CMD	WHAT IT DOES:	CMD	WHAT IT DOES:	PROGRAMS TO GENERATE
C	CONFIGURE SYSTEM	O	OLD SCREEN	
S	SCREEN CHARACT.	N	NEW SCREEN	
X	OUTPUT OPTIONS	T	LOAD TEXT FILE	
M	QUICKMENU		GENERATE PGMS	
Q	** QUICKSCREEN MODE	E	*** EXIT ***	

--CURRENT SCREEN IS

The commands you can use when the main menu is on the screen are as follows (each can be used simply by pressing the proper letter key without pressing **RETURN**:

O - Entering **O** will allow you to call up an old screen (i.e. .SCR file) which you have previously saved to the disk using QUICKCODE. The name can be up to 10 characters long (including disk drive name), but must not include the .SCR extension. Note that the screen name is the basis for all program names - that is, all programs you generate will have the same first name as your screen, but different last names.

N - Entering **N** will change the name of the current screen to the name you type in, which can be up to 10 characters long. (If the Automatic Pilot is on, the database name will be set to be the same as the new screen name and the top and bottom margins of the screen will be set to lines 1 and 20 respectively. Also, lines 1 and 20 will be set to the following values to improve the quality of the generated programs:

Line 1: - - - - - - - **%MQ:MODE** - - - - - - - -
Line 20: - - -**PLEASE ENTER YOUR CHOICE**- - - -

This is explained in more detail in section C, **YOUR QUICKODE PROGRAMS.**

Note: The **N** command doesn't create any actual screens by itself. All it does is change the name of the current screen. Thus, you can use this command to rename existing screens.

T - This command will read in a **.TXT** file as described in the previous section on **STARTING QUICKCODE.** This file can be created by most any text editor or word processor. When typing in the name of the file, do not include the .TXT extension - QUICKCODE will automatically assume it.

E - This command will allow you to exit from QUICKCODE. Before it completely exits, it will ask you if you are sure, just as a safeguard so you don't accidentally lose your work.

C - This command will take you to the system configuration menu, otherwise known as the "C menu." This menu allows you to change almost all the commands in QUICKCODE to suit your own

preference. It is described in more detail in the section on the "other menus."

S - This command will take you to the Screen Characteristics Menu, otherwise known as the "S menu." This menu allows you to change many of the things you use in QUICKSCREEN mode, such as the screen height and width, as well as the database name and Automatic Pilot setting. It is described in more detail in the section on the "other menus."

X This command will take you to the Output Options Menu, otherwise known as the "X" menu. This menu allows you to specify which programs or files you want QUICKCODE to create and which you do not. It is decribed in more detail in the section on the "other menus."

M This command will turn on the QUICKMENU feature for generating customized menu programs. It is not to be used with Automatic Pilot on, as it only creates a special kind of program that is separate from all the other programs generated by QUICKCODE. When QUICKMENU is turned on, you will see the phrase **QUICKMENU ON** next to the current screen name on the main menu. To turn QUICKMENU off, just use the **M** command again. The QUICKMENU feature is described in detail later in this manual. The instructions for building a menu program are found in the QUICKSCREEN mode section, which follows this section.

ESC This command will cause program generation to begin, after which the main menu will reappear. This command is the same as the QUICKSCREEN mode EXIT command. Section 7, entitled Program Generation, describes this process in detail.

Q This command takes you into QUICKSCREEN mode, the electronic blackboard. Note that you must go through QUICKSCREEN mode via this command to get to fields mode. QUICKSCREEN mode is described in more detail in the following section.

You can call up the main menu from QUICKSCREEN mode or fields mode by entering the HELP command. Also, when you are in one of the "other menus," you can go back to the main menu via the **E** command in each menu, or you can bypass the main menu and go directly back to QUICKSCREEN mode via the **Q** command. This is covered in more detail later.

3. QUICKSCREEN MODE

In the section **INSTANT PROGRAMS** you read about the way you can define a screen layout and your data fields in QUICKSCREEN mode. You should study the examples given and try them out to learn how to use QUICKSCREEN mode. In this section, we will review each thing that can happen while you are in QUICKSCREEN mode and what it means.

There are four types of things that can happen in QUICKSCREEN mode:

a.QUICKCODE can give you information.
b.You can draw on the screen.
c.You can do other things.
d.You can use the QUICKMENU feature

We will now go through each of these:

a.QUICKCODE can give you information.

QUICKCODE can provide you with a lot of information about what you are doing while you are in QUICKSCREEN mode. Most of this information can be found at the top of the screen on line 0. The following information is found on line 0:

Line/Column Monitor This shows you at what line and column the cursor is currently located. The top of the screen is line 0, the leftmost column is column 0. The numbers shown will change every time you move the cursor.

Automatic Pilot This shows you whether Automatic Pilot is on or off. If it is off, there will be nothing at the center of line 0. If it is on, the phrase **AUTO PILOT ON** will be displayed. If the pilot is on, your screen layout will be limited to lines 1 through 20.

Screen/database This shows you the current screen name and the name of the database that your programs will use. Normally, these names are the same. However, you can change the name of the database by using the S menu, which is described later. This is how you create a collection of different screens which all use the same database file.

The **line/column monitor** and the **screen/database monitor** do not have to appear if you do not want them to. To remove them, you must go to the S menu and tell QUICKCODE to turn them off. When you return to QUICKSCREEN mode, they will be gone and will remain gone unless you turn them back on again.

The only other additional information QUICKCODE will display in QUICKSCREEN mode is when you are using the QUICKMENU feature. If you turn on the QUICKMENU feature (from the main menu), when you are in QUICKSCREEN mode, the following phrase will appear in the lower left corner of the screen: **QUICKMENU ON.** This is to warn you, because screen building is very different when QUICKMENU is on. This should prevent you from accidentally drawing a regular screen when QUICKCODE is expecting a menu screen. QUICKMENU is described in more detail later in this section.

No other information is displayed in QUICKSCREEN mode, although you can get a lot of information by typing the HELP command (?) and going to the main menu.

b.You can draw on the screen.

Drawing on the screen in QUICKSCREEN mode is the most critical part of using QUICKCODE. This activity will define all of your data fields, as well as the screen layouts that will be used by the programs you generate. It is, therefore, very important to understand each thing you can draw and what it means. (The following applies to drawing when QUICKMENU is off, although most of it is also true when QUICKMENU is on.)

The screen you draw in QUICKSCREEN mode will be used for the following:

1. To determine the names and number of data fields.
2. To set up an initial data type for each field.
3. To set up an initial length for each field.
4. To define the screen layout for adding, editing, and printing database records.
5. To define the layout of a mailing label or form.
6. To define the fields to be transferred to WordStar.

On the screen itself, these are the three kinds of things you can draw:

i. Titles and lines
ii. Display-only fields
iii. Database fields

Here is a definition of each and how each is used:

i.Titles and lines

These are drawn on the screen simply by typing them (a letter, number, or punctuation mark) where you want to see them. For example, if you put the word COMPANY at line 6, column 10, this is where the word COMPANY will appear on data entry and display screens. To simplify the drawing of horizontal and vertical lines, QUICKCODE has some built in line-drawing commands. Titles and lines can appear anywhere on the screen, but they must be separated from display and database fields by at least one empty space. Also, it is important to be careful when using certain characters, such as the apostrophe and quotation mark, as dBASE may have problems displaying these when you run your programs.

ii.Display-only fields

These are fields which you want to use for output purposes only on your data entry and display screens. A display-only field must be preceded by the "start of display" character which we have set to **%**, but which you can change by using the S menu.

Example:

```
------------ %CORP:NAME --------------
```

In this example, there are lines before and after the display field. There is at least one space before the "start of display" character and one space after the field name itself. This display-only field would be useful if you wanted to display the

company name on top of all screens. Another common use for display-only fields is to put the date on a screen (dBASE-II has a built in date function which uses the date that you type in at the start of a dBASE-II run.) Here is how to do this:

```
---------- %DATE() ----------
```

In this case, the display-only field is actually the dBASE-II special DATE function.

What QUICKCODE actually does with a display-only field is generate **@ SAY** followed by the field name. For example, **%TITLE** becomes **@ 2,5 SAY TITLE.** These display-only fields are not used to input any data in any screen. They are not put into any database files created by QUICKCODE. They can be dBASE memory variables, file variables (including primary or secondary using the P. or S. prefix), or any legal expression that dBASE can **SAY.** They may be up to 20 characters long, but there must be no space characters within the field.

To allow the maximum flexibility, QUICKCODE does not do any checking of the characters used in a display-only field. This means that, if you use display-only fields, it is your responsibility to make sure that the field you put on the screen will work in dBASE and does not contain a syntax error. Here are some examples of ways in which you might use a display-only field:

%CASH+CHARGE	Display the sum of two numeric fields.
%LAST+FIRST	Display the concatenation of two strings.
%(NUM/DEN)*100	Display percentages.
%S.NAME	Display fields from a secondary file.

Note: Display-only fields will show up on the fields list in fields mode, but they will contain an error code of 3, indicating that they are for output only and you cannot do anything with them in fields mode.

iii.Database Fields

Database fields are by far the most important fields on your screens. These fields are used for adding data to your files, editing data in your files, searching for data, and displaying data. Also, they are used to create the database file itself. Before explaining how they are used throughout QUICKCODE and all your programs, let's look at how you put them on your screen:

A database field must be preceded by the "start of database field" character, which we have set to ; (semi-colon) but which you can change by using the S menu.

Example:

```
CUSTOMER      ;CUST:NAME
```

In this example, the title **CUSTOMER** precedes the database field. There is at least one space before the "start of field" character and at least one space after the field name. In addition, the field name is preceded by ; with no spaces following the semi-colon.

Because these fields are used to do data entry and can become fields in a database file, their content is very strictly controlled by QUICKCODE. This guarantees that you will be able to operate error-free in dBASE. Here are the restrictions on database field names (almost the same as you will find in the dBASE manual for dBASE variables):

- the length may be no longer than **9 characters**
- the field name may be composed of letters, numbers, and colons (:), but no spaces or other punctuation marks

If a fields name that you type is longer than **9 characters** or contains an **illegal character**, you will find an error code to indicate the error when you go to fields mode. In addition, a database field which has one of these errors will automatically be omitted from any database file (**DBF**) which is created by QUICKCODE and from any programs generated by QUICKCODE. It is essential that you eliminate these types of errors at the time that you build your screens.

There are two other considerations that are important when putting a database field on the screen:

Field Type

As explained in **INSTANT PROGRAMS**, there are three primary types of database fields - **character, money, and integer.** These are determined by what character you put after the field name on the screen:

```
character - nothing after field name
money     - $ after field name
integer   - # after field name
```

Examples:

;NAME	character field
;COST$	money field
;AGE#	integer field

As explained earlier, there are a number of other field types which can be set up in fields mode, but you must begin with the above in QUICKSCREEN mode.

Field Length

As explained in **INSTANT PROGRAMS**, the field length set in QUICKSCREEN mode is the maximum length allowed for that field type, providing the field does not "collide" with another field or title and that it does not go past the end of the screen line. Once the field length has been set in QUICKSCREEN mode, you can change it in fields mode, so long as these restrictions on maximum are still followed. If you change a field length in fields mode and you go back and forth between fields mode and QUICKSCREEN mode, QUICKCODE will "remember" the length you set in fields mode. It will not reset the lengths to their original values.

The actual method of setting field lengths in QUICKSCREEN mode is a little more powerful than was described in **INSTANT PROGRAMS.** If you find that the following description makes the whole thing too complicated, then just continue to let QUICKCODE assign the maximum lengths as described above and change them yourself in fields mode.

If, however, you'd like to have a little more control over field lengths, consider the following:

QUICKCODE actually allows **two** methods of specifying field lengths in QUICKSCREEN mode. One is called the **default** method and the other is called the **explicit** method. Using the default is easier, but gives you slightly less control. Here's how they work:

Default This is the mothod we have been describing all along. You do **not** put anything after each field name, but let it "default" to the maximum allowed, providing there are no collisions on the screen. You then control the length in fields mode.

Explicit To use this method, you must define an "end of field" character on the S menu. This should be a non-blank character. We have set this to be **>** but you can change it by going into the S menu. To use explicit field lengths in QUICKSCREEN mode, you simply put this character where you want a database field to end and the length of the field will be automatically adjusted to end there. This will override the default length that QUICKSCREEN would otherwise have assigned if the end of

field character were not there. Example:

;NAME >

Assuming the semi-colon is in column 0 and the end of field character is in column 8, the field length assigned by QUICKCODE would be 8. If the end of field character were not there, QUICKCODE would have used the default method and assigned a length of 79 (to the end of line.) If you do use an end of field character and you choose to change the field length in fields mode, the end of field character will be automatically moved left or right for you by QUICKCODE. (This is the reason for the **SCREEN ADJUSTED** message in fields mode).

Whether you use the default or explicit method (and the explicit method is a nice way to see the field lengths on your screen layout), the field lengths will always be subject to the maximums for each data type and "collisions" will always be prevented on the screen. (The allowable maximums for data types are given later in this section.)

Database fields: Other Considerations

Database fields are used in many ways throughout QUICKCODE. It is important to know how they are used:

1. The **maximum number** of database fields allowed on a screen is 64. However, dBASE only allows 32 fields in a database file, so that any additional fields found by QUICKCODE will not be included in the database file. The maximum number of fields allowed on one line of a screen is 20. Also, dBASE does not allow the combined length of all fields in a file to exceed 1000 characters. If you define fields that add up to more than 1000 characters, you will get an error message when QUICKCODE tries to create the database file. It will not be created.

2. The **screen layout** used by the generated programs for **adding** and **editing** records will have all the database fields as input fields which will all be put into the database after you type data into them (all titles, lines, and display-only fields will also appear at the appropriate locations).

3. The **screen layout** used by the generated programs for **printing** database records will have all the database fields as output (i.e. **SAY**) fields located at the same places on the screen as the corresponding input fields are found in the add and edit screens. (Again, all titles, lines, and display-only fields will also appear). If Automatic Pilot is on, only database fields on lines 2-19 will be printed (Also, any titles and display only fields on line 1 will be printed).

4. The **mailing label/forms** generating program uses fields as follows: starting from the top of the screen, the first non-blank line signals the start of the label or form and the last non-blank line signals the end of the label or form. Thus, if the label/form title is on line 6, and the last line of the label/form is on line 10, the generated program will assume that your label or form has **exactly** 5 lines of data to print for each record in the database. (When the label program asks you how big your actual label is, if you enter anything larger than 5, the program will **automatically** insert the proper number of blank lines on the label). Please note that if you have Automatic Pilot turned on, QUICKCODE will look at your screens differently: it will only look at lines 2-19 of the screen for label/form data and will completely ignore lines 0,1, and 20-23, as if they were blank. This way, the Automatic Pilot headings and titles will not be printed on your label - **only** the label data that you put on lines 2-19 will be printed.

5. The **WordStar Connection** program uses your fields as follows: titles, lines, and display-only fields are ignored. All database fields will be transferred to WordStar in the same order (top to bottom, left to right) that they appear on the screen. In the **.DOC** file that is created, any field names that would be illegal in WordStar will be changed to conform to WordStar format.

6. Database fields are also used to **search** for records by the **.GET** program generated by QUICKCODE. There are two kinds of databases: **keyed** and **unkeyed** (These are described in later sections of this manual). If you are using an unkeyed database, the search function in the **.GET** program will be based on the first database field on your screen. If you wish to search an **unkeyed** database by "last name," for example, then you should make the "last name" database field the first one on your screen (don't worry about display-only fields - They can appear anywhere on the screen). For a **keyed** database, the search will be based on all the database fields which you have selected as **database keys** (see fields mode for more details).

7. Database fields are also the only fields for which QUICKCODE will set up **default values** and **validation.**

Summary of Screen Editing Commands

This summarizes the use of all screen editing commands that you may use to draw your screen in QUICKSCREEN mode. The settings are how the commands are set when you receive QUICKCODE. All of these may be changed via the C menu:

Command	Setting	Description
RIGHT	CTRL-D	Moves cursor to right one column. If right margin is reached, moves to left margin and down one line.
LEFT	CTRL-S	Moves cursor to left one column. If left margin is reached, moves to right margin and up one line.
UP	CTRL-E	Moves cursor up one line. If top margin is reached, moves to bottom margin and left one column.
DOWN	CTRL-X	Moves cursor down one line. If bottom margin is reached, moves to top margin and right one column.
MIDDLE	CTRL-Y	Moves cursor to middle of current line.
LMARGN	CTRL-T	Moves cursor to left margin.
RMARGN	CTRL-U	Moves cursor to right margin.
TAB	CTRL-I (TAB)	Moves cursor to next tab stop but not past end of line.
LINE	CTRL-L	Sets up horizontal line drawing. The next character typed will be repeated all the way to right margin. If it is a space, all lines below the cursor will be shifted down one line.
COLUMN	CTRL-C	Sets up vertical line-drawing. The next character typed will be repeated in the current column all the way down to the bottom margin. If it is a space, all columns to the right of the cursor, only on the lines below the cursor, will be shifted right one column.
DEL LIN	CTRL-F	Delete line function. This will set the rest of the current line to be blanks. If it is already all blanks, all lines below the cursor will be shifted up one line.

Command	Setting	Description
DEL COL	CTRL-V	Delete column function. This will set the rest of the current column to be blanks, down to the bottom margin. If the column is already all blanks, then all columns to the right of the cursor, only on lines below the cursor, will be shifted left one column.
CENTER	CTRL-O	This will center all text on the current line, based on the left and right margins (use carefully, because the leftmost and rightmost non-blank characters are used to do the centering).
LSHIFT	CTRL-Q	This will shift all characters (on the current line) to the right of the cursor left one column.
RSHIFT	CTRL-W	This will shift all characters (on the current line) to the right of the cursor right one column.
ERASE	GS	This will erase the entire screen. (Use with extreme caution).
GRID	CTRL-G	This will alternately apply the screen grid as an aid in laying out screens.

c. You can do other things in QUICKSCREEN mode

There are several other things you can do in QUICKSCREEN mode besides draw on the screen. Here is a summary of the other commands (these can all be changed via the C menu):

Command	Setting	Description
HELP	?	This will cause the main menu to appear, after which you can return to QUICKSCREEN mode.
SAVE	CTRL-P	This will save your screen description (including anything you have set up in fields mode) immediately to a disk file (.SCR). This should be used periodically when building a lengthy screen to minimize the risk of losing your work.
EXIT	ESC	This will exit from QUICKSCREEN mode and start program generation, after which QUICKCODE will return to the main menu for more work.
QUIT	US	This will immediately exit from QUICKCODE to CP/M. Anything you have done which you have not saved will be lost.

Command	Setting	Description
FIELDS	CTRL-B	This will take you to fields mode. (The same command in fields mode will return you to QUICKSCREEN mode).

d.The QUICKMENU Feature

There is one additional feature which you can use in QUICKSCREEN mode that has not been described. This is QUICKMENU. This feature will help you to create customized "menu" programs for use with all your other dBASE programs (even those you might write yourself). QUICKMENU is turned on by using the **M** command on the main menu. It will remain on until the **M** command is used again to turn it off. You will know QUICKMENU is on because the main menu will have the message **QUICKMENU ON** and, in QUICKSCREEN mode, the same message will appear at the lower left part of the screen (It will not, however, become part of the screen itself).

When QUICKMENU is on, many QUICKCODE features are disabled. Automatic Pilot is off and no programs or files can be generated except the following:

- **.SCR** - screen description
- **.MEN** - menu program
- **.PRN** - screen image file

Suppose you want to have a program which shows you a list of choices and, based on which choice you pick, runs the appropriate program. This is what the QUICKMENU menu program will do.

Example:

You want to display the choices of running a customer program (named **CUST**), inventory program (named **INVENT**), or a billing program (named **BILLING**). Here is how you'd construct your screen for QUICKMENU:

```
                  %CO:NAME
+--------------------------------------------------------+
!                 PLEASE CHOOSE ONE:                     !
!                                                        !
!      A) LOOK AT CUSTOMERS                 ;CUST        !
!      B) REVIEW INVENTORY                  ;INVENT      !
!      C) RUN OUR BILLS                     ;BILLING     !
!      D) EXIT                              ;QUIT        !
!                                                        !
+--------------------------------------------------------+
```

In QUICKMENU, you can put any display-only fields or line/titles anywhere you like on the screen, but there may be only one database field per line. The name of each database field will be assumed by QUICKCODE to be the name of the program you would want to run if you picked the choice on that line. So, for example, the above program will run CUST if you type in A. Database field names in QUICKMENU must follow the usual QUICKCODE restrictions on database field names; i.e. they may contain any characters, but cannot be longer than 8 characters. For example the name CUST.ADD could be used. Any legal CP/M filename can be used.

Further, if your database field name is one of the following special names, QUICKCODE will generate commands to exit from the menu program, rather than run a program:

Special Name	Generated Command
;CANCEL	CANCEL
;QUIT	QUIT
;RETURN	(an exit from the program without using return, for compatibility with Fox & Geller's dUTIL™ program)

The other thing you have to place on each line is the **choice character** that must be typed to select that line, immediately followed by a special **QUICKMENU character**, which allows QUICKCODE to know where the choice character is. For example, if the choice character is **A** and the QUICKMENU character is **)** then you must put **A)** on the line which is to be selected as choice **A**.

In the above example, the QUICKMENU character is) and the choice characters are A,B,C, and D. The QUICKMENU character must be the same for all lines on a menu screen, but can be changed from screen to screen by using the S menu in QUICKCODE.

There is great flexibility in the construction of menus. Here are some other ways in which the use of choice characters and QUICKMENU characters can provide a variety of menus:

(1)	A-	1:
(2)	B-	2:
(3)	C-	3:

Note: Only the first occurrence of the QUICKMENU character is used to find the choice character. Any other characters on the same line have no effect on the choice character.

4. The Other Menus: C,S,X

As mentioned throughout this manual, nearly all of the commands and other features in QUICKCODE can be changed by using the "other menus." This chapter will explain what each of these menus does and how to use it.

Before describing each menu, it is important to explain how the system configuration works and how it is related to each screen you create.

The **system configuration** contains the definitions of all the commands that appear on the upper half of the main menu - that is, the screen editing and other commands that you can use in QUICKSCREEN mode. In addition, it contains the **default definitions** (that will be in effect for any new screen which you create) for the following: Margins, start and end of field characters, output options, database name, Automatic Pilot, dBASE version, line/column monitor, and QUICKMENU character. The effect of this is that when you create a completely new screen (not by renaming an old one), the system defaults will be used for the new screen if you do not override them.

There is no special function for looking at the system configuration. To see what it is set to, just run QC without typing in a screen name and go into the C, S, and X menus. What you see on the menus are the system defaults. They can be changed, as described later.

Each Screen

Each screen you create has its own set of specifications which will be in effect whenever you load that screen into QUICKCODE via the **O** command on the main menu. Thus, if you load in an existing screen which has the Automatic Pilot turned off, then the Automatic Pilot will be turned off as long as you're working with that screen. If you then load in another screen with the Pilot turned on, the Pilot will be on as long as you work with that screen. In effect, each screen has its own **environment** which is saved with the screen in the .SCR file and is remembered whenever the screen is loaded. This permits you to set up screens the way you need them and not have to worry about it after that. For example, you could set up a screen where the Automatic Pilot is off, the right margin is column 53, the tab stop size is 7, and which only generates **.ED** and **.WS** dBASE programs and no **.DBF**. Every time you use this screen, it will have these qualities.

Suggestion: Set up special screens which have the most commonly used configurations you need. These "master screens" can be used to immediately set up any new screen which you want to have those options. For example, screens for which you only want to create an **.IO** program could be called **IOmaster.SCR** and renamed each time

you create a new screen.

Not all system definitions are carried along with each screen. In particular, the QUICKSCREEN commands from the main menu are not. They are only found in the system configuration file and cannot change from screen to screen. The characteristics which will be saved with each screen when the program generator creates the **.SCR** file are:

- All options on the S menu (margins, special characters, etc.)
- All options on the X menu

The values saved will be whichever ones happen to be in effect at the time the **.SCR** is created. This means you should be aware of all your settings if you want a particular screen to have certain characteristics. If a screen is saved with characteristics you don't want, all you need to do is call the screen back up, go into the appropriate "other menu," change the characteristic(s), and re-create the **.SCR** file.

Now, we will briefly review each of these "other menus:"

The C Menu

The C menu is the System Configuration Menu and it contains the definitions of all major QUICKCODE commands. Any of these can be changed, although we recommend extreme caution, as keyboard controls can be very tricky. We have initially set up the cursor controls to be the same as WordStar and dBASE-II use, but you are free to change them to suit your needs. There is one limitation in the current version of QUICKCODE: As it now stands, commands can only be defined as one ASCII (i.e. keyboard) character. This can include the ESC, RETURN, and TAB keys. On some computers /CRT's, this will also include the "arrow keys." In particular, Televideo and Vector Graphic arrow keys have been found compatible with QUICKCODE. However, many arrow keys or special keys are actually associated with sequences of 2 or more characters. These are currently not supported. We are studying the feasibility of supporting them and you will be notified if this happens. In the meantime,if you can't use your arrow keys, we suggest leaving the WordStar/dBASE setup in effect, as it is familiar to a lot of people. Also, many of the other commands were set up to be easy to use, so think twice before changing them.

To get to the C menu, all you need to do is enter **C** on the main menu.

The list of current settings will appear. To change a command, enter the number that appears before that command name. For example, to change the **CURSOR DOWN** command, enter **4**, then press **RETURN.** QUICKCODE will then ask you for the new command. This must be a number (a decimal number), taken from the ASCII chart in Appendix B of this manual. Enter this number and press **RETURN.** Your new command definition should appear on the list at the appropriate place. Appendix B provides a simple way to re-define commands. If you want to re-define a command, look up the command in the second column, then look in the first column to get the number you need to type.

Example:

Part of **Appendix B** looks like this:

4	**CTRL-D**
5	**CTRL-E**
6	**CTRL-F**

If you want to make a command be **CTRL-F** (that is, the control key held down while **F** is typed), look in column 1 and you will see that **CTRL-F** is number 6. Therefore, 6 is the number you will have to type into the menu for the new command.

Once you have changed a command, it will be in effect for as long as QUICKCODE is still running. But if you do not save it to the system configuration file, it will not be in effect once you have exited from QUICKCODE. To make it permanent, (at least until the next time you change your mind), while you are in the C menu, you should type **S** for save and it will be saved to the system configuration file.

One last thing to watch out for. On many computers, certain control characters have a special meaning. If you use any of the following as commands, be aware of their other use:

	Other Use
CTRL-M	RETURN
CTRL-J	Line Feed
CTRL-G	Rings bell
CTRL-H	Backspace
CTRL-I	TAB
CTRL-P	May activate printer, especially on Vector Graphic
CTRL-A	May switch between upper/lower case (e.g. on an Apple with 80 column card)

When you are done with the C menu, you can do one of two things: To go back to the main menu, enter **E.** To go back directly to QUICKSCREEN mode, enter **Q.**

THE QUICKCODE C MENU

```
          = QUICKSCREEN  SYSTEM  CONFIGURATION  =
SCREEN CONTROL      SETTING     SCREEN CONTROL      SETTING
-------------------------------------------------------------------------

(1) CURSOR RIGHT                    (18) CENTER TEXT
(2) CURSOR LEFT                     (19) LSHIFT
(3) CURSOR UP                       (20) RSHIFT
(4) CURSOR DOWN                     (21) GRID
(5) CURSOR MIDDLE
(6) ERASE SCREEN
(7) DRAW LINE
(8) DRAW COLUMN
(9) DELETE LINE
(10) DELETE COLUMN
(11) SAVE SCREEN
(12) EXIT
(13) HELP
(14) QUIT
(15) LMARGN
(16) RMARGN
(17) TAB
-------------------------------------------------------------------------
              ( S = SAVE,  E = EXIT,  Q = QUICKSCREEN MODE )
ENTER # TO CHANGE:
```

The S Menu

The S Menu is the Screen Characteristics Menu and it contains the definitions of many things about each screen. All of these definitions can be saved with each screen, as described earlier. To get to the S menu, all you need to do is enter S on the main menu.

The list of current settings will appear. To change a particular characteristic, enter the number that appears before the one you want and press **RETURN**. For example, to change the Automatic Pilot setting, type 13 and then **RETURN**. QUICKCODE will then ask you for the new value for that characteristic. What you should type depends on which characteristic you are changing. We will review them one by one:

(1) Start of Display Field	This is the character that will be used to indicate the start of a display-only field. We have set it to percent sign, but you can set it to anything. Whatever you use will then not be useful for doing titles, etc.
(2) Start of Database Field	This is the character that will be used to indicate the start of a database field. We set it to be semi-colon.
(3) End of Field	This is the character used to indicate the end of a database field. We set it to be >. It is best to leave it as a printable character other than "space."
(4) Horizontal Line Character	This is the character used to draw horizontal lines. We set it to be "dash."
(5) Vertical Column Character	This is the character used to draw vertical columns. We set it to be exclamation point.
(6) Line/Column Intersect	This is the character used where a line and a column intersect. We set it to be "plus sign."

To set new values for any of the above, you must type in the new value itself, not the decimal number that you might have used in the C menu. For example, if you want the end of field character to be) then type) not a decimal number.

(7) LEFT MARGIN

This indicates the screen column where the left margin will be set. The legal range is from 0-79. You may not define the Left Margin to be greater than or equal to the Right Margin.

(8) RIGHT MARGIN

Similar to Left Margin. It may not be less than or equal to the Left Margin.

(9) TOP MARGIN

This indicates the screen line where the Top Margin will be set. The legal range is from 0-23. You may not define the Top Margin to be greater than or equal to the Bottom Margin. Also, when Automatic Pilot is on, the Top Margin is automatically set to 1, to accommodate the monitors on line 0. **Note:** dBASE-II version 2.3 also restricts the use of line 0 (see the dBASE user manual).

(10) BOTTOM MARGIN

This indicates the screen line where the Bottom Margin will be set. You may not define the Bottom Margin to be less than or equal to the Top Margin. Also, when Automatic Pilot is on, the Bottom Margin is automatically set to 20, to accommodate the dialogue on lines 21-23.

(11) QUICKMENU CHARACTER

This indicates the character that is to be used in QUICKMENU to locate the "choice character." The QUICKMENU character must always appear immediately to the right of the "choice character" on a menu screen. To set a new QUICKMENU character, just type the new character itself, not a decimal number.

(12) DATABASE NAME

This indicates the name of the database that will be used by the programs QUICKCODE generates and also the first name of the **.DBF** file that will be created. It doesn't have to be the same as the screen name. Whenever a new screen name is entered via the main menu **N** command, the database name is set to be the same as the new screen name unless you choose to change it. The current database name can be seen in QUICKSCREEN mode next to **DBF**, if the line column monitor is turned on.

(13) AUTOMATIC PILOT

This is a Yes/No entry, which indicates whether Automatic Pilot is turned on. To turn it on, enter Y to turn it off, enter **N**. Whenever you turn Automatic Pilot on, the following will be automatically set:

- TOP MARGIN = 1
- BOTTOM MARGIN = 20
- Lines 1 and 20 will be set to special lines and titles

- Two output options will turned on:

(2) **MAIN (.CMD)**
and (13) **SCREEN DEFINITION (.SCR)**
(See X menu for details)

(14) LINE/COLUMN MONITOR

This is a Yes/No entry, which indicates whether the line/column and screen/database monitors should appear on line 0 in QUICKSCREEN mode. Enter **Y**,if you want them and **N** if you don't.

(15) dBASE-II VERSION 2.3

This is a Yes/No entry, which indicates whether you want your generated programs to be compatible with dBASE-II version 2.3. Enter **Y** to make them compatible, and **N** to make them compatible with only version 2.02. The difference is in the use of the **INDEX** command and the **TRIM** function, which differ between the two versions.

(16) TAB SIZE

This indicates the tab stop size to be used in QUICKSCREEN mode when you use the **TAB** command. It can be set at anything from 1-20. Tab stops will begin at column 0 and be set at intervals equal to the TAB SIZE. To set TAB SIZE, just type in the new value and press **RETURN**.

(17) TOP LINE NUMBER

This indicates the line number that will be used for the top line of your screen when QUICKCODE generates **@SAY** and **@GET** commands. Normally, you would want this to be zero. However, if you want to create a form for printing which is longer than 24 lines, all you have to do is create up to four screens, with the following top line

numbers:

Screen 1 - 0
Screen 2 - 24
Screen 3 - 48
Screen 4 - 72

QUICKCODE will adjust all line numbers in the .OUT programs that it generates so that if you "DO" screen 1, then screen 2, then screen 3, then screen 4, you can print a form up to 96 lines long! The line/column monitor will be adjusted whenever you are using a top line number other than 0.

To change a top line number, just enter the new number that you want. The legal range is 0-72.

Keep in mind that when you change any of these characteristics, the new characteristic will be saved with the screen in the **.SCR** file automatically. If, however, you wish to save any of these characteristics in the **system configuration**, thereby making it an automatic characteristic of **any new screen** you create, use the **S** command to save to the system file. This **S** command is found on the bottom of the S menu, but should not be confused with the main menu **S** command.

To exit from the S menu, use the **E** command to return to the main menu or the Q command to return directly to QUICKSCREEN mode.

THE QUICKCODE S MENU

```
                    QUICKSCREEN
              = SCREEN CHARACTERISTICS =
-------------------------------------------------------------------

(1) START OF DISPLAY FIELD              (18) ALT. OUT PGM
(2) START OF DATABASE FIELD             (19) ALT. LABEL
(3) END OF FIELD                        (20) LABEL SIZE
(4) HORIZONTAL LINE CHARACTER           (21) UNIQUE KEY
(5) VERTICAL COLUMN CHARACTER           (22) DEFAULT DRIVE
(6) LINE/COLUMN INTERSECT CHARACTER
(7) LEFT MARGIN    (MIN=0)
(8) RIGHT MARGIN   (MAX=79)
(9) TOP MARGIN     (MIN=0)
(10)BOTTOM MARGIN  (MAX=23)
(11)QUICKMENU CHARACTER
(12)DATABASE NAME
(13)AUTOMATIC PILOT
(14)LINE/COLUMN MONITOR
(15)dBASE-II VERSION 2.3
(16)TAB SIZE
(17)TOP LINE NUMBER
-------------------------------------------------------------------
                ( S = SAVE, E= EXIT, Q = QUICKSCREEN MODE )
ENTER # TO CHANGE:
```

The X Menu

The X menu is the "Programs Generated" menu, also known as the "Output Options" menu because it defines some options to output things other than programs.

The definitions of all generated programs is covered in great detail later in this manual. The menu listing is easy to understand by looking at it.

All you need to know about how to change an output option is to type the number of the option you wish to change and then enter **Y** or **N**, depending on whether you want that program/file to be created or not when program generation occurs.

As with the S menu, you can save the option settings that you see as your system configuration default for new screens simply by using the **S** command on the bottom of the X menu to save them.

As with the C and S menus, you can exit from the X menu by entering the **E** command to return to the main menu or the **Q** command to return directly to QUICKSCREEN mode.

Note: You should be **extremely careful** about turning off option (13), the screen definition, as it will cause you to lose your screen definitions and you will be unable to load up old screens to change or copy them. (The Automatic Pilot always causes this option to be turned on.)

THE QUICKCODE X MENU

```
                QUICKCODE PROGRAMS GENERATED

PROGRAM                              OUTPUT?
-------------------------------------------------------------------------
(1)ADD TO FILE (.ADD)
(2)MAIN (.CMD)
(3)DATABASE FILE (.DBF)
(4)EDIT FILE (.ED)
(5)SET DEFAULTS (.FAU)
(6)GET FROM FILE (.GET)
(7)SET UP FILE (.GO)
(8)I/O SCREEN (.IO)
(9)LABELS/FORMS (.LBL)
(10)OUTPUT SCREEN (.OUT)
(11)SCREEN IMAGE (.PRN)
(12)RUN REPORT (.RPT)
(13)SCREEN DEFINITION (.SCR)
(14)VALIDATE ENTRY (.VAL)
(15)WordStar (.WS)


-------------------------------------------------------------------------
                  ( S = SAVE, E = EXIT, Q = QUICKSCREEN MODE )
ENTER # TO CHANGE:
```

5. Data Fields

The use of data fields in QUICKCODE actually merits a complete section of its own, so that you can refer back to this section as you work with the data fields and need to know things about them. There are three things about data fields that you need to know:

a. Field Types
b. Data Types
c. Field Lengths

a. Field Types

As covered in other sections of this manual, field types are in two categories: **Display-only** and **database. Display-only** fields are a convenience but not used very much by QUICKCODE. By putting a display-only field on your screen, you can display useful information, but QUICKCODE will not do anything with it except you display it. On the other hand, **database** fields are used extensively: To input and change data in files, to search for data, and to display data to the printer, on labels and to go to WordStar.

To define a display-only field, put the start of display character just before the field name. To define a database field, put the start of entry character just before the field name.

Example:

%CO:NAME	**display-only**
;ADDRESS	**database**

Restrictions:

	Max Length of Name	Legal Field Names
Display-only	20	Anything
Database	9	Letters, Numbers, Colons only

The remainder of this section applies only to database fields.

b. Data Types

Database fields can be of several types. In QUICKSCREEN mode, you can only specify three of these, which are known as **primary types,** but you can change these primary types (within limits) to a number of other types by going into fields mode (see the next section).

Primary Types

The primary types you specify in QUICKSCREEN mode are **character, money, and integer.** The type is determined by whether there is a special character at the end of the field name:

Primary Type	Special Character
Character	**None**
Money	**$**
Integer	**#**

The special character does not count in the length of the field name.

All Data Types

In fields mode, the above primary types can be changed to other types. But the other types are not compatible with all primary types, so not all changes are allowed:

Fields Mode Code	Data Type	Required Primary Type from QUICKSCREEN	Maximum Length
N	Numeric (1 place)	Money	11
I	Integer	Integer	11
C	Character	Character	79
$	Money (2 places)	Money	11
D	Date (MM/DD/YY)	Character	8
T	Telephone	Character	13
S	Social Security	Character	11
L	Logical	Character	1

Data type lengths are used in determining defaults for the **.FAU** program. Also, the sum of all database field lengths for one database file may not exceed 1000 characters and the number of such fields may not exceed 32.

c. Field Lengths

Database field lengths are set in QUICKSCREEN mode by one of two methods: **Default** and **explicit.** Whichever method is used, the lengths can be easily changed in fields mode, provided the length does not:

a) Exceed the maximum length for the data type
b) Go past the end of line
c) Cause a screen collision

The **default** method, in which QUICKCODE automatically assigns the biggest length possible, is easier to use, but requires going to fields mode to "fine tune" field lengths.

The **explicit** method, in which an "end of field" character is used in QUICKSCREEN mode to set the field length, offers more control over field sizes and the convenience of seeing the field sizes on the screen.

6. Fields Mode

As described earlier, fields mode is one of the most powerful features of QUICKCODE. There are so many things that you can do in fields mode that a proper presentation requires that this section be subdivided into subsections as follows:

a. **Overview and general use of fields mode**
b. **Cursor Controls**
c. **Fields Mode: Column by Column**
d. **Fields Mode-QUICKSCREEN mode relationship**

The **Overview** describes how fields mode works in general, how to get in and out, etc. **Cursor Controls** describes how you use the cursor to control your fields. The next subsection goes through each column in fields mode and how you use it. The last subsection discusses the relationship between the things you set up in fields mode and the screen layout that you create in QUICKSCREEN mode.

a. Overview and General Use

Fields mode is actually a list of all your database fields. For each database field that you created in QUICKSCREEN mode, there will be a field on the fields mode list, for which you can specify a new data type, field length, file status, default value, and input validation method (i.e. error checking).

Because the fields mode list depends on the QUICKSCREEN screen layout, you must always go to QUICKSCREEN mode to get to fields mode. The way to get into fields mode from QUICKSCREEN mode is to use the "fields command" (initially set to **CTRL-B**). In a few seconds, your fields list will appear under the column headings.

The main activities within fields mode are described in the next few subsections. However, there are two commands which you can use for special situations. Both of these are the same as you find in QUICKSCREEN mode and they both work the same way:

- The HELP command **?** will exit from fields mode and redisplay the main menu.

- The SAVE command (**CTRL-P**) will cause QUICKCODE to save your screen and field descriptions to a **.SCR** file and let you keep working afterward.

You can leave fields mode by going to the main menu via the help command (you would do this if you want to start program generation) or by going back to QUICKSCREEN mode via the fields command (**CTRL-B**).

b. Cursor Controls

When you first enter fields mode, you will find the cursor positioned at the first field on the screen and in the first column. Across the top of your screen are column headings, and down the left side are numbers in front of the field names. The screen is thus divided into lines and columns. Where each line meets each column is information describing the characteristics of each field. The cursor controls are designed to let you move from line to line and column to column easily, so that you can set up those things that you want to, while leaving other things alone.

The commands to move the cursor up, down, left, and right are the same as the corresponding commands in QUICKSCREEN mode. For example, if **CTRL-D** is the cursor right command, in QUICKSCREEN mode, it will also be the cursor right command in fields mode. The effect of the cursor control commands in fields mode are slightly different than in QUICKSCREEN mode. The up and down commands still cause the cursor to go up one line or down one line (to the previous or the next field), but the left and right commands move the cursor to the fields mode column on the left or right, rather than move one space left or right. Thus, when you move from a column like **DEFAULT** to the column on its right called **MINIMUM**, you will see the cursor jump the 15 or 20 spaces to the right that are needed to position it in the **MINIMUM** column. When the cursor reaches the rightmost column and you use the RIGHT command, it will simply appear at the leftmost column on that line. A similar effect takes place when you try to go past the leftmost column.

One additional convenience: We have set up fields mode so that the **RETURN** key will act as a cursor down command, in addition to whichever down command you have set up. This can make it easier to move around the screen freely.

If your screen has 22 fields or less, you will find that they all fit on one fields mode screen. However, if you have more fields than this, your fields can appear on a second or even a third fields screen. (The second screen will be numbered from 23-44 and the third screen from 45-64. QUICKCODE has a limit of 64 fields - including display-only - per screen.)

You can think of the second or third screens as extensions to the first, comprising a list of fields numbered from 1 to 64. However, since only 22 can be displayed at a time, you need a way to go to screen 2, then to screen 3, and perhaps back to screen 1. This can be done either of two ways:

- At any time, no matter where the cursor is positioned on a fields screen, you can go directly to the next screen of 22 items simply by entering **CTRL-V**. If you are already on the third screen, this will take you back to the first screen.

- You can go to the next screen from the screen you are on by going "down" to the last field and entering the cursor down command. If you are on the third screen, this will take you back to the first screen. You can go to the previous screen from the screen you are on by going "up" to the first field and entering the cursor up command. If you are already on the first screen, this will have no effect.

Through the use of these cursor movement commands, you can go to any of 64 fields and any of 8 characteristics per field, meaning that you can control up to 512 characteristics of your screen (and generated programs) via fields mode.

Entering Values

One other thing you need to know about moving the cursor. Normally, you can change any of the field characteristics on the fields screen by moving the cursor to the correct line and column and typing the new value over the old value.

The new value will take effect only if it is a legal value and if you either reach the maximum length for that column or press **RETURN** to enter it. Usually, QUICKCODE will indicate the successful entry of a new value by saying **OK** on the bottom of the screen or will tell you what is wrong if you do something illegal.

If, however, you have begun to type in a new value and you change your mind, you must start the value over by moving the cursor left, right, up or down and then moving it back to the place where you were making the change. You cannot use backspace or delete in the middle of making an entry - you must move the cursor off that location and move it back. When you do move the cursor off that location, you will find that the location has gone back to the old value that it had before you began changing it. Thus, if you decide to leave it as it was before, you don't need to do anything else.

c. Fields Mode: Column by Column

Each of the columns in fields mode has a special meaning. Most of the columns are for your use in setting up field characteristics, but there are three which give you information, but which you cannot change. If you try to move the cursor to any of these columns, you will find that it will move past them and stop on the next column which you can actually change.

It is important to know about these three columns, particularly the last of the three:

COLUMN 1: # - This column contains the number of each field in order of their appearance in QUICKSCREEN mode and ranging from 1 up to a maximum of 64, depending on how many fields you have defined. QUICKCODE does use this number in some error messages that can appear in fields mode.

COLUMN 2: Field Name - This column contains the field name from QUICKSCREEN mode, excluding the start of field character and any special ending characters. For display-only fields, the name may be only partially shown, because display-only fields names can be up to 20 characters long.

COLUMN 11: ER - This column contains an error status code for each field and is extremely important. You must look at the error status code for each field before you do program generation. Only fields which have an error status code of zero will be put into generated programs and database files. Also, these are the only fields that you will be able to work with in fields mode. (If you try to work with a field that has a non zero error code, you will get an error message on the bottom of the screen.)

Here are the error codes that can appear in column 11 and how you can fix them:

Code	Meaning	How to Fix
0	**No error**	
1	**Field name too long**	Go to QUICKSCREEN mode and shorten name.
2	**Illegal character**	Go to QUICKSCREEN mode and remove illegal character from name.
3	**Display-only field**	Not an error. Just means that you can't work with it in fields mode.
4	**Too many fields**	This field is more than the 32nd database field. Get the number down to 32 by removing fields in QUICKSCREEN mode.

Columns You Can Change

The other 8 columns you can change by typing new values into them. Here is how each one works:

COLUMN 3 - Data Type

This column indicates the data type of the field on that line. Data types are represented by one letter codes as follows:

N - Numeric
I - Integer
C - Character
$ - Money
D - Date
T - Telephone
S - Social Security
L - Logical

The details about these types are given in the previous section on data types. A data type can be changed by typing the new letter code for the new data type. However, if you change data types, there are some restrictions:

1. If you **change data types**, the columns entitled **DEFAULT**, **MINIMUM**, and **MAXIMUM** must all have a value of ***NONE***. This is to ensure that illegal values do not work their way into the generated programs. (For example, if you had set a default of **01/01/82** to a **date** field, this restriction will guarantee that this value does not get assigned to a **telephone** type field.) If you can't change the data type, a message on the bottom of the screen will tell you why. To fix it so you can change the data type, you will have to move the cursor to the column(s) which does not have ***NONE*** and set it to none (see directions for doing this in the description below for that column).

2. Here is a list of allowable changes to data types:

	New Data Type	Previous type may be:
	N	**N, $**
*	**I**	**I**
*	**C**	**C,D,T,S,L**
*	**$**	**N, $**
	D	**C,D,T,S,L**
	T	**C,D,T,S,L**
	S	**C,D,T,S,L**
	L	**C,D,T,S,L**

(* = "primary" type)

3. When you change data types, QUICKCODE will automatically adjust the field length if it is **larger** than the maximum allowed for the new data type or **too small** for the new data type (if the new data type is D,T, or S, which need to be exactly the right size). In some cases, the new length would cause a "collision" on the screen. If that is the case, QUICKCODE will tell you the maximum length that is allowed. If you still want to change to that data type, you will have to go to QUICKSCREEN mode and eliminate the collision (i.e. remove the title or field which restricts the field you are working with).

COLUMN 4 - Length

This column indicates the length of the field on that line. Lengths must be greater than zero and no more than the maximum allowed for each data type:

Type	Maximum
N	11
I	11
C	79
$	11
D	8
T	13
S	11
L	1

To change the length, you must type the new length where the old length appeared and press **RETURN.** If the length is accepted, QUICKCODE will say **OK** on the bottom of the screen. If it is not, there will be a message telling you why.

The only other reason why a length might not be accepted is that increasing the field length would cause a "collision" with something else on the same line in QUICKSCREEN mode. If this happens, QUICKCODE will say **MAXIMUM OF X ON SCREEN**, where X will be the largest length that does not cause a collision.

If you change the length of a field, you may cause some other things to change automatically. If the new length is smaller, any **DEFAULT**, **MINIMUM**, or **MAXIMUM** values that are too long will be shortened. If you were using **explicit** field lengths in QUICKSCREEN mode, the "end of field" character will be moved to reflect the new length and a message will be displayed: **SCREEN HAS BEEN ADJUSTED.**

COLUMN 5 - File Status

This column indicates the file status for each database field. This is something not described in detail in **INSTANT PROGRAMS** and is of more interest to programmers than non-programmers. However, if you need to set up a "keyed" database, please read this section.

Each database field in QUICKCODE can have one of three file status values. The file status values are entered by typing the appropriate one letter code into column 5:

Code	File Status
F	**File Field**
0-9	**Database key field**
space	**Non-file field**

Here is what each file status means when QUICKCODE generates programs:

File Fields

A file field will be assumed to be part of the database file that is generated. (It will only be omitted if the error code on the fields screen is not zero.) There can only be up to 32 file fields on a screen. When data entry is done in generated programs, QUICKCODE will automatically create a dBASE memory variable corresponding to each file field and use it to set up defaults, etc. Database fields are automatically file fields unless you change the file status.

Database Key Fields

Database key fields are file fields that have a special meaning. As with all file fields, key fields will be included in the database file that is generated, and will have memory variables used for data entry. In addition, these fields will be used in conjunction with the dBASE-II **INDEX** feature to create an index for your database file. You use an index to keep records in a database in some special order other than the order in which they are added, and to be able to find particular records quickly.

Example:

In a mailing list database, suppose we have the following fields:

LAST:NAME
FRST:NAME
CITY
AGE

Now, suppose we would like to list the people in the database in alphabetical order on the basis of last name. If we do not set up a database key, there is no simple way to do it, because if we enter SMITH on Monday, JONES on Tuesday and JOHNSON on Wednesday, when we list them they will not be in alphabetical order:

SMITH (first one entered)
JONES
JOHNSON (last one entered)

Suppose, however, we tell QUICKCODE that we want to keep them in alphabetical order. Then we could have them list as:

JOHNSON
JONES
SMITH

The way to do this in QUICKCODE is to enter **0** for the file status of **LAST:NAME**, thereby making that field a database key:

#	FIELD NAME	T	LEN	F
2	LAST:NAME	C	30	0

In the same way, we could have kept the records in order of city by making the **CITY** field a database key, or in order of age by making the **AGE** field a database key. However, for a particular screen, you can not have three independent database keys at once. (There are ways to do this using more than one screen and this is described later in this manual.)

Keep in mind that a database key is a file field and is subject to the same restrictions, i.e. the total number of file fields, including database keys, cannot exceed 32 for one database file.

Multiple Field Keys

Although you cannot have more than one database key per screen (i.e. the records can only be in one order!), the database key itself does not have to be restricted to one field. This means you can have a much more powerful database key.

Example:

Suppose you want to keep your mailing list names in order of city, but within each city you'd like them in alphabetical order by last name. You can't do this just by making **CITY** a database key, because the last names will be out of order. You can't do this just by making **LAST:NAME** a database key, because then the cities will be out of order.

The way to do this in QUICKCODE is to enter 0 for the file status of **CITY** and 1 for the file status of **LAST:NAME**. This will create what is called a multiple field key, which is a database key made up of more than one field:

#	FIELD NAME	T	LEN	F
1	CITY	C	20	0
2	LAST:NAME	C	30	1

Then, if you list the names in your database, you will find them in the right order:

ATLANTA	JONES	(By name within city)
ATLANTA	SMITH	
BOSTON	JOHNSON	
BOSTON	NEWSOME	
CHICAGO	AARON	

QUICKCODE actually allows you to define a database key containing as many as 10 fields! All you have to do is set their file status codes to the numbers 0 through 9, where 0 is for the field that is most important, 1 less important, down to 9 for the least important field. The fields do not have to be in any particular order on the fields screen or QUICKSCREEN mode, just as long as you know which fields are more important. However, the file status fields must begin with 0 and increase by 1, without skipping any numbers.

The following is a perfectly legal multiple field key:

#	FIELD NAME	T	LEN	F
1	CITY	C	20	0
2	LAST:NAME	C	30	1
3	AGE	I	3	3
4	FRST:NAME	C	20	2

In this case, **CITY** is most important and **AGE** least important. In computer terminology, this order is known as "sorting key order."

Note: To use a keyed database, you must request that QUICKCODE create a **.GO** program for that database and you must run that program once before you start to add records. This is covered in more detail in the program generation sections.

One other reason you use a database key is to speed up retrieval of particular records. If you are going to have a database of more than 100 records and you will need to find a particular name quickly, you should define the field (or fields) you are interested in as your database key.

This will have a big effect on the **.GET** program which QUICKCODE generates for you. If you do not set up a database key, the **.GET** program will be designed to ask you for the first database field on the screen and then to look through your database one record at a time to find the value you typed in. This can be unbearably slow, especially on a floppy disk.

If, however, you set up a database key, the **.GET** program will be designed to ask you for all the fields that make up the key and then get that record directly, which usually takes no more than 2 seconds. This is clearly the way to go for looking up names, part numbers, etc.

Non File Fields

Non file fields are fields which are not part of the database (these are generally memory variables in dBASE). If you define a field as a non file field, by entering a space for the file status, the field will not be subject to the restrictions of file fields:

- It will not be put into the .DBF file
- It will not count toward the limit of 32
- There will not be created any special memory variables for input. Default values will be stored directly into the field, rather than a QUICKCODE-generated memory variable.
- It cannot be part of a database key.

COLUMN 6 - Default

This column indicates the "default" value for the field on that line. A default value is one which will be automatically put into a field (and the database) if you don't make an entry of your own. Default values are usually displayed on the data entry screen where you would normally type your input. They are used when adding new records.

Since every field in a database must have something in it, if you don't set up default values yourself, QUICKCODE will set them up for you.

When you first enter fields mode, you will see that QUICKCODE has set up the value ***NONE*** as the default values for your fields. If you have no special defaults, leave this column alone. (The result will be defaults of zero for N, I, and $ fields).

To enter a default of your own, position the cursor to column 6 and the field of your choice. Now, enter the new default that you want to set up. Because of data type restrictions and field lengths, there are some limitations on what you can type:

- No default can be longer than 11 characters.
- You can't set up a default larger than the field length. QUICKCODE will stop when you reach the length.

Here is a list of the allowable characters which you can type for default values:

Data Type:	Allowable Characters:
Integer	**0 - 9**
Money	**0 - 9** and decimal point.
Date	**0- 9** Must be exactly 6 digits (e.g. **123182**). (QUICKCODE will insert slashes automatically)
Logical	**T** or **F**
Telephone	**0 - 9, dash,** and parentheses
Social Security	**0 - 9, dash**

As with other columns, to stop in the middle of making an entry, simply move the cursor to another line or column and the previous value will return.

Important:

To automatically set a default to be ***NONE***, all you have to do is enter **CTRL-N** at any time while you are making your entry.

COLUMN 7 - Minimum

This column indicates the minimum allowable value for the field on that line. (Depending on what you put into column 10-validation, this column may have a different meaning. See the description of column 10 for details.)

The minimum value would require that any data entered for **new** records would have to be greater than or equal to the minimum. For example, if the field were a **money** type field and the minimum were **9.98**, then an entry of **9.97** would not be accepted, but an entry of **9.98** or more would.

Usually, we think of "minimum" in terms of numeric fields, such as money or integer. This is the most likely use for this column - setting up a limit to the numeric amounts that can be entered. So, you will most likely use this column for money, integer, or numeric (one place) fields.

However, the idea of a minimum can also be applied to letters and punctuation symbols, although this requires a little more understanding of how computers handle these things.

For example, to the computer, the letter **A** comes before the letter **B** in much the same way that 1 comes before 2. As a result, **B** is considered to be "greater than" or "larger than" **A**. So, you can set up a minimum (and maximum) for a character type field:

Example:

FIELD NAME	T	LEN	MINIMUM	MAXIMUM
FUBAR	C	1	A	K
MOXIE	C	1	L	Z
ETTA	C	1	!	z

In this example, you could only enter letters between A and K for the field **FUBAR**, or else you'd get an error message. You could only enter letters between L and Z for the field **MOXIE**. The values set up for the field **ETTA** make use of the fact that to the computer, the exclamation point is greater than the space character, but less than A, and the lower case z happens to be the "greatest" letter. (See Appendix B of this manual for the order of characters.) The effect of this is that for the field **ETTA**, you must make an entry (i.e. you cannot leave it blank) and your entry can be any letter, number, or punctuation mark.

The longest minimum value that you can type (as with the default and maximum columns) is 11 characters.

In general, the restrictions on which characters you can type depend on the data type and are the same as for the default column.

Important:

As with the default column, you can indicate that there is no minimum by putting the cursor in the minimum column and entering **CTRL-N**. The value ***NONE*** should then appear. The result is that data entry programs will not check for any minimum for that field.

COLUMN 8 - Maximum

This column indicates the maximum allowable value for the field on that line. (Depending on what you put into column 10-validation, this column may have a different meaning. See the description of column 10 for details.)

This column works exactly like the minimum column, except that the value you enter will become the maximum value allowed in data entry. For example, if you enter 9.98, then an entry of 9.99 would not be accepted, but an entry of 9.98 or less would.

COLUMN 9 - Error Message

This column indicates the error message that will be displayed by programs (during data entry) when entries less than minimum or more than maximum are made. (If other types of validation are in effect - see column 10-validation - then this message will be displayed if an entry is made that fails the validation test.)

Please note:

QUICKCODE **automatically** supplies a **standard error message** on the bottom of the screen for illegal data entries. This message will usually include helpful information so that the person typing will know what values are legal. This standard error message will be used any time there is any validation being done on a field and it will be displayed on the bottom of the screen whether or not you put an error message into column 9 in fields mode.

If you do put an error message into column 9, it will be displayed on the bottom of the screen **in front of** the standard message. The message you put in column 9 can be anything you can type (up to 14 characters).

If you do **not** want to have your own error message, but just want to have the QUICKCODE-generated message, then put the cursor in column 9 and enter **CTRL-N**. The value ***NONE*** should then appear.

COLUMN 10 - Validation

This column indicates the type of validation (i.e. error checking) that will be performed for the field on that line. Validation is performed in the **.VAL** program, which is used whenever you **add new** records or **edit existing** records.

The last few sections have been hinting at the possibility that there are a number of ways QUICKCODE can set up validation of database fields. There are currently 3 and each will be discussed separately:

Column 10	Validation Method
*	Minimum/Maximum
L or N	List Checking
F	File Checking

Before going into each, here is why you would want to use one as opposed to the others:

If you want to restrict values in your database to a certain range (like **20-45** or **A-Q**), then you should use minimum/maximum (otherwise known as range checking). The limitation is that you cannot eliminate any particular values inside the range, but must allow the entire range.

If you want to allow only certain distinct values (like **11, 14, 33** or **JR, SR, HN**), then you should use either list checking or file checking. Each of these methods will allow you to specify a list of legal values and then reject any entry that is not on the list. The difference between the two methods is that list checking is limited to a small number of simple values which are not going to change in the future, whereas file checking runs slower, but can accommodate a very large number of complicated values that may be easily changed in the future.

Guidelines:

- If you have more than about 20 legal values each of which are more than 1 character long, use file checking
- If your legal values are more than 2 or 3 characters long each, use file checking
- If your legal values are 1 or 2 characters long each and will never change, use list checking.

Minimum/Maximum

To specify minimum/maximum validation, put a * in column 10 (you can do this by entering **CTRL-N**). This is the method QUICKCODE will set up if you don't do anything else.

If column 7 contains ***NONE***, no minimum checking will be set up. If column 8 contains ***NONE***, no maximum checking will be set up. If any checking is set up, then column 9 will be examined. If it contains anything other than ***NONE***, the contents of column 9 will be used in the program error message.

List Checking

To specify list checking validation, put **L** or **N** in column 10. These are essentially the same, except that **L** will allow a legal value of spaces in the list, while **N** will not allow space.

If you are using list checking validation, you will need a way to tell QUICKCODE what your list of legal values is. This is where columns 7 and 8 come in. Normally, these columns would be used to indicate the minimum and maximum values for the field and the longest value you could type in these columns would be the length of the field (e.g. if the field length was 2, you could only type in values like **AX** or **ZO**, but not **AXE** or **ZOO**.)

When you use list checking, however, these 2 columns are used for telling QUICKCODE which values you want to be legal. As a result, the above restriction on how many characters you can type will not be in effect - you will be able to type the complete 11 characters for each of the 2 columns.

The way it works is this: Column 7 and Column 8 each contain 11 characters, into which you can type as many legal values as you can fit.

Example:

If your database field length is 1, then you can specify up to 22 legal values: 11 in Column 7 and 11 in Column 8.

FIELD NAME	LEN	MINIMUM	MAXIMUM	VAL
FUBAR	1	ABCDEFGHIJK	PQRSTUVWXYZ	L

In this case, you could enter any of these 22 characters, but nothing else.

Example:

If your database field length is 2, then you can specify up to 10 legal values: 5 in Column 7 and 5 in Column 8. (The extra character in each column is wasted.)

FIELD NAME	LEN	MINIMUM	MAXIMUM	VAL
STATE	2	NYNJMAPACN	CAORWAAZTX	L

This would allow only the following states to be entered: **NY, NJ, MA, PA, CN, CA, OR, WA, AZ, TX.** Nothing else would be allowed. (The reason spaces would not be allowed, even though we put L in Column 10, is that columns 7 and 8 were completely filled up with legal values. Spaces must be included among the legal values if you want them to be legal.)

Here is a summary of how many legal values you can specify in columns 7 and 8, depending on field size:

Field Size	Column 7	Column 8	Total
1	11	11	22
2	5	5	10
3	3	3	6
4	2	2	4
5	2	2	4
6-11	1	1	2

Note: For list checking, the error message in column 9 will be used in a way similar to minimum/maximum validation.

File Checking

To specify file checking, put **F** in column 10. If you do this, QUICKCODE will ignore columns 7 and 8, but use your column 9 error message (if any) in a similar way to minimum/maximum validation.

File checking means that you must put your list of legal values into a separate database file which the QUICKCODE-generated programs will read and use for validation. If a value you enter is found in this "validation file," then it will be accepted. If it is not in the validation file, it will be rejected and an error message displayed.

Before describing how you would set up this validation file, here's why it's often worth doing: You may have a long list of legal values for something like customer numbers or part numbers. These are the kind of lists that are always changing, so it would be nice if you could add to or remove from the list without having to change any programs. If you use file checking, you can add new legal values or remove old ones, and when you run your data entry program, the modified list will be in effect. And you will not have had to write a single line of code!

The other way to do this is to actually put the legal values in your program. This is called "hard coding" and it tends to make your life "hard!"

How to Do It

Here's how to set up a validation file. Let's suppose you want to enter customer orders into a database and you want to validate the customer number, but not have to change your programs as customer numbers come and go:

Step 1 - Create your main database in QUICKSCREEN mode.

```
- - - - - - - - %MQ:MODE - - - - - - - - - -SCR:MAIN   DBF:MAIN

              ;CUST:NO#
              ;QUANTITY#
              ;TYPE
```

This will set up three database fields, the first being the customer number. (Of course, you can have as many database fields as you like.)

Step 2 - Go into fields mode and specify file validation

#	FIELD NAME	T	LEN	F	...	VAL	ER
1	MQ:MODE	C	7	F		*	3
2	CUST:NO	I	11	F		F	0
3	QUANTITY	I	11	F		*	0
4	TYPE	C	65	F		*	0

Here we went to column 10 and set validation to **F**.

Step 3 - Generate programs for main database

We went to main menu, made sure that all the programs we needed would be generated and then used the **EXIT** command to generate programs.

Step 4 - Build a new screen for the validation file

At this point, you are going to create a new screen. Either exit from QUICKCODE and start up again or go to QUICKSCREEN mode and use the clear screen command, then go to the main menu and change the name via the **N** command. It is less risky to exit from QUICKCODE and start up, since the other way you might forget to rename your screen.

Note: The name of the new screen is critical. It must be the same as the name of the field which is being validated, since that is what your QUICKCODE-generated programs will look for! (In the example, it would be called **CUST:NO**.)

Your new screen should look like this:

```
        (AUTO PILOT ON)      SCR:CUST:NO     DBF:CUST:NO
- - - - - - - - - - - - - - %MQ:MODE - - - - - - - - - - - - - -
    ;CUST:NO#
    ;CUST:NAME
    ;CUST:ADDR
```

Notice that the database name and one database field are all the same as the original field being validated. (The screen name doesn't have to be the same, but it is safer to leave it the same.)

Step 5 - Go into fields mode and set up key

#	FIELD NAME	T	LEN	F	.....	VAL	ER
1	MQ:MODE	C	7	F		*	3
2	CUST:NO	I	11	0		*	0
3	CUST:NAME	C	60	F		*	0
4	CUST:ADDR	C	60	F		*	0

On this screen you must put a zero in the file status column for **CUST:NO** because the field being used for validation must be a **database key** field in order for the validation program to work. Normally, this is the only field to be a key field. (There are other possibilities if you're a more experienced user.)

Step 6 - Generate programs for validation file

You do this by going to the main menu and reviewing which programs will be generated. If any needed programs are missing, you can add them by going to the X menu. Here is a suggested list of which ones to include:

(1) ADD
(2) CMD
(3) DBF
(4) ED
(6) GET
(7) GO
(8) IO
(10) OUT
(13) SCR

The other output options should be included if you have a special need, such as printing labels or going to WordStar. Otherwise, they are not essential.

The above outputs are suggested because they will let you add customers, look at them, change them, and delete them. All of these will be needed to maintain your validation file properly.

Before using your main database (this is essential, because your main database programs will not work unless this is done), you must set up your validation file itself and put in some customers.

Step 7 - Set up validation file

To set up your validation file, you must run the **CUST:NO.GO** program, which sets up the file. Do this by typing **DBASE CUST:NO.GO** then **QUIT.**

Step 8 - Add validation records

This is the last step. Run the **CUST:NO** program to add validation records:

DBASE CUST:NO

and when the menu asks what you want to do, enter **A** to add records. After you have added a few, you can go back to your main database and test out the validation program by adding new orders for customers that are in the validation file and those that are not.

This concludes the section on fields mode: column by column.

d. Fields Mode—QUICKSCREEN Mode Relationship

When you work in QUICKCODE, you work mainly in two modes: QUICKSCREEN mode and fields mode. Both of these involve the same data fields and both can affect each other. Since you can go back and forth between the two, it is important to understand the effect they can have on each other.

Defining Fields

Fields (and screen layouts) are always defined first in QUICKSCREEN mode by putting them on the screen. You cannot go into fields mode without first going into QUICKSCREEN mode, although both modes allow you to go directly back to the main menu. (QUICKSCREEN mode also allows you to start program generation, but fields mode does not.)

QUICKSCREEN mode defines the following things about a field which **cannot** be changed in fields mode:

- name
- screen location (line, column)/field order
- primary data type
- display-only vs. database field

If you need to change any of these for a field, you must go to QUICKSCREEN mode to change it. You can only add new fields to your screen/database by putting them on the screen in QUICKSCREEN mode. If you do, you should change the name of your database file (DBF) if you intend to create one, or else you may wipe out all the existing records in your database file. (QUICKCODE will warn you before this happens and help you avoid such a disaster.)

Other things about your fields won't be defined until the first time you leave QUICKSCREEN mode. If you go to fields mode this time, you can see them (length, default, etc.). If you begin program generation before going to fields mode, these characteristics will still be defined, but you just will not have seen them on the screen.

Exiting QUICKSCREEN Mode the First Time

The first time you exit from QUICKSCREEN mode for a given screen, the following will be defined for each field:

- File status will be **F** for database fields
- Default will be zero or blanks
- Minimum, Maximum, Error Message will be ***NONE***
- Validation will be *
- Error status code will depend on conditions.

Working in Fields Mode

In fields mode, you can change the following characteristics for each field:

- data type
- length
- file status
- default
- minimum
- maximum
- error message
- validation method

Data Type

If you change the data type, you must stay within the "primary" type that was established in QUICKSCREEN mode, but within that primary type, you can change to any type:

Primary Type	Go to Data Types
Character	**C,D,T,S,L**
Money	**$,N**
Integer	**I**

New types will stay in effect as long as you don't change the primary category when you go back to QUICKSCREEN mode.

Length

You can change the length of a field, as long as you don't cause a "collision" in QUICKSCREEN mode. If you were using "explicit" lengths in QUICKSCREEN mode, the end of field character will be automatically moved if you change lengths in fields mode.

Other Characteristics

The other characteristics in fields mode can all be changed at will and will stay in effect as long as that field name is on the list, even if the order of fields is changed in QUICKSCREEN mode. Only if a field name is **deleted** or **changed** or if a primary type is **changed** will you lose something that you set up in fields mode.

Working in QUICKSCREEN Mode

Once you have made changes in fields mode, you must be careful when you go back to QUICKSCREEN mode. You can delete fields just by removing their names from the screen. You can add fields just by putting their names on the screen. You can change the order of fields by erasing their names and typing them somewhere else - and the characteristics you set up in fields mode will still be in effect.

However, if you change the primary type or you change the spelling of a name, you can expect to lose whatever you have set up for that field in fields mode.

7.PROGRAM GENERATION

Program generation is the purpose of all the activity that goes on in QUICKCODE. The program generator is started from either the main menu or QUICKSCREEN mode by entering the exit command, **ESC.** (It is usually better to start program generation from the main menu, because the main menu shows a list of all programs which will be generated.)

When program generation begins, the screen will clear and QUICKCODE will display **PROCESSING SCREEN.** The first thing that will be created is the screen description (**SCR**) file which contains your screen layout and all the field specifications you set up. QUICKCODE will display a message on the bottom of the screen telling you that it is about to create an **.SCR** file.

Note: Before creating anything, QUICKCODE lists on the screen all fields which still have an error in them and which will not be included in generated programs. If there are no errors, QUICKCODE will display **NO ERRORS ENCOUNTERED.**

Once the **.SCR** file is created, QUICKCODE will proceed to generate each program or file that you requested. You can generate any individual program or programs that you wish, just by changing the options in the X menu. Thus you can, at times, re-generate just a validation program or an .IO screen by itself. (However, if you have the Automatic Pilot turned on, you will be required to generate at least an **.SCR** and a **.CMD** file.)

After each program is generated, QUICKCODE will display the message **SUCCESSFULLY CREATED X**, where X is the name of the program it created. If there was an error creating a program, it will display the message **ERROR CREATING X.**

Errors

The most common source of errors when generating programs is due to running out of disk space. You can run out of disk space because you have put too much data on a disk or because you have tried to put too many file names into your directory. In either case, once you get an error because of this, all the rest of the program generation will give you the same error. **Don't be alarmed. As long as the .SCR file was written to disk OK, you will be able to re-generate the programs in minutes.**

Warning: Make sure the **.SCR** file was written to disk! If this is a brand new screen, try to read it via the O command in the main menu. Do not exit from QUICKCODE if the **.SCR** was not written out, because you still have a chance to save your work. If your .SCR file was not written to disk, you can write it to another disk by changing its name - but only if the other disk has been in its drive all along. (CP/M has a funny bug where the operating systems "crashes" when you change disks).

Example:
You are getting errors in program generation. There was an error writing the .SCR file. If your current screen name is **MAILLIST** and you are on drive **A:** try to change the name to **B:MAILLIST** via the N command in the main menu. Now, start program generation again. All the generated files and programs will be written to drive B: (or use any drive that is available on your particular system).

Suggestion: Before generating programs, make sure the disk has 30K to 40K bytes left and 15 file names left. Another major "error" that can occur during program generation is trying to write a database file when one with the same name already exists. If you do this, all data that you may have put into the old file will be destroyed. QUICKCODE will **not** automatically destroy an old database. Instead, it will tell you how many records are in the database and ask you if you want to destroy it. If you enter **N**, then no database file will be created. At this point, you should either change your database name or exit from QUICKCODE and rename your old **.DBF** file. Finally, you may find when generating programs that QUICKCODE will refuse to create a database file because the fields you set up are too large and the record size would exceed 1000 characters.

If this is the case, QUICKCODE will display a message and wait for you to press **RETURN**, after which it will return to the main menu and allow you to reduce the size of your fields. To generate programs, you will have to start program generation over again.

Program Names

The names of generated programs will be based on your current screen name. Each program will have the current screen name as its first name and a unique last name to indicate its function:

.ADD - program to add records
.CMD - main program
.ED - edit
.FAU - defaults
.GET - search,print,delete
.GO - set up database key
.IO - screen data entry
.LBL - labels/forms
.MEN - customized menu
.OUT - printed forms
.RPT - reports
.VAL - validation
.WS - WordStar

In addition, QUICKCODE can generate the following files to go with these programs:

.SCR - saved screen description
.PRN - screen image for printing

Finally, QUICKCODE can generate an empty database file to use with the programs. Normally, the name will be the same as the screen name, but you can override this and change the database name in the S menu. Thus, the file created will be the current database name, with a last name of **.DBF**.

8. LEAVING QUICKCODE

The normal way to leave QUICKCODE is via the main menu **E** command. QUICKCODE will ask **ARE YOU SURE**, as a safeguard against accidentally exiting without saving your screen.

The other way to leave QUICKCODE mode is via the **QUIT** command, which causes an instantaneous exit to CP/M with a loss of work. This method is not recommended, unless you have run QUICKCODE, made a quick "fix", saved it via the SAVE command, and want to get out fast.

C. YOUR QUICKCODE PROGRAMS

1.Overview

This section of the manual will provide an in-depth look at the programs generated by QUICKCODE: what they are, how they work, how to use them.

Throughout the discussion, it should be kept in mind that the programs are intended for two distinct groups of people: non-programmers and programmers. The Automatic Pilot is for the use of the non-programmer to generate completely runnable programs. With the Pilot off, a programmer can easily produce large amounts of code which can be pieced together and customized rapidly. But these two uses are quite different.

Therefore, although the Automatic Pilot will generate a collection of programs that work together in a very specific way, they have been designed to keep various program functions separate in a way that will make it easy for a programmer to rearrange them and use only the ones which are needed.

Here is a complete list of all programs generated by QUICKCODE and what each does (in dBASE-II terminology, these are called "command files," rather than programs):

Note: All these programs are run by first running the **.CMD** program produced by QUICKCODE and then choosing which program to run via the "master list." The **.CMD** program is run as follows:

Assuming your screen/program name is **MAILLIST:**

1) **DBASE MAILLIST**

or

2) **DBASE**
ENTER DATE (MM/DD/YY) (RETURN)
.DO MAILLIST

SUMMARY OF COMMAND FILES GENERATED BY QUICKCODE

TYPE	PURPOSE
CMD	This is the main command file which allows you to choose which function you want to perform. Choices include adding a new record, getting an existing record (to print, edit, or delete), running a report, creating a WordStar/MailMerge data file, or printing mailing labels/forms. Each of these choices is described in more detail below as the particular command file is described.
IO	This is an input/output screen display which allows you to display and enter data, as well as titles, lines, and boxes. It is used for adding new records and editing existing records. When Automatic Pilot is on, it will only include data from lines 1 through 19 of your screen layout, since Automatic Pilot uses lines 20-23 for dialogue with you.
OUT	This is an output display which allows you to display all your data fields and titles. It is used for displaying records on the screen or printing them. If Automatic Pilot is on, it will include only lines 1-19 of your screen layout, since Automatic Pilot uses lines 20-23.
ADD	This is a program which will add records to your database. In the process of adding records, it will set "default" (i.e. automatic) values to your input fields, display the **IO** screen described earlier, perform data validation, and add the record to your file. If you have specified that your file is keyed, it will automatically index your file on the key you selected.
RPT	This is a program to run reports which you have previously created with the dBASE-II report generator. It will allow you to direct your report to your printer, a disk file, or your screen. You may choose to run any report which you have previously set up, so long as it is compatible with the file you are using.
WS	This is a program which will create a WordStar/MailMerge data file using the data in your dBASE file. This WordStar file can be immediately used to print form letters in MailMerge (All character data will be trimmed so that trailing blanks do not appear in the form letter). Along with this data file, the program creates the beginning of your form letter in a **.DOC** file, containing all the MailMerge commands you need at the start of a form letter.
LBL	This is a program which will create mailing labels or forms for you, based on the data fields you specified

TYPE	PURPOSE
	on your screen. Since not all labels are the same size, it will ask you for the label size and **automatically** adjust for the difference between your printed data and the actual labels.
GET	This is a program which will allow you to find any particular record in your file and display it on your screen. You can search by moving sequentially forward or backward in the file and by specifying a particular field value which you wish to find. In addition, once you have found a particular record, this program will allow you to print, edit, or delete it.
ED	This is a program which will allow you to edit an existing record in your file (which you have retrieved using the **GET** program, if Automatic Pilot is on). It uses the **IO** screen display so that you can change any input values, and then performs the same data validation as the **ADD** program performs. If you have specified that your file is keyed, it will automatically index your file on the key selected. If Automatic Pilot is on, a dialogue will take place on lines 21-23 of your screen.
FAU	This is a program which sets "default" (i.e. automatic) values for all data fields on the screen, provided you set up a default for each when you built your screen in QUICKCODE. For database fields, special memory variables are created by taking the field names and putting an **M** in front.
VAL	This is a program which performs validation of each input field on the screen, based on the validation method you set up in QUICKCODE. For each field which is in error, a message is displayed on line 23 of the screen and the cursor is positioned to the field's location on the screen so that the field can be corrected.
GO	This is a program which sets up the index for a keyed database. It must be used (**DBASE xxx.GO**) once prior to putting records into the database and can be used thereafter to re-index the database.

There are a few conventions that have been followed in the dBASE programs which QUICKCODE generates:

1. No **RETURN** statements are used, to ensure compatibility with Fox & Geller's **dUTIL**™.

2. The memory variable MQ:MODE is used throughout to show on the screen what type of activity you are doing. If you are adding records, it will contain **ADD**, if editing it will contain

EDIT. This variable is generally released at the end of each program.

3. Each program (except the **.FAU**) releases all the memory variables which it creates, so that at the end of a program, the dBASE environment should be similar to what it was before running that program.

4. All memory variables created for the user by QUICKCODE (except for field variables) begin with the letters **MQ:** to avoid conflict with any names you might want to use.

5. The names of all **DO WHILE** loop variables which are used to continue a major activity (until you want to stop) are of the form:

   MQ:xMORE
   where x is the first letter of the MQ:MODE value.
   (e.g. MQ:AMORE for ADD mode, MQ:EMORE for EDIT mode)

Many of the programs generated call other programs. Here is a list of what calls what (If you are going to run one of these, you should make sure you have generated all the programs that it calls, or else you will get an error when you run it):

Program	Programs called
CMD	**ADD,GET,RPT,WS,LBL**
ADD	**FAU,IO,VAL**
GET	**ED,OUT**
ED	**IO,VAL**
RPT	**none**
WS	**none**
LBL	**none**
FAU,IO,OUT	**none**
VAL,GO	**none**
MEN	**user-defined**

2. Main Program (.CMD)

This is the main program which you use to call all the other programs. It was given the last name of **.CMD** because in dBASE-II, if a program has a last name of CMD, you can run it without having to use its last name. Thus, you can run **ABC.CMD** by entering the CP/M command **DBASE ABC** or you can go into dBASE and enter **.DO ABC**

This program is primarily for the non-programmer, as it displays the standard options and then calls one of the other programs. However, it is **important** to know that this program contains the instruction that opens the database (as a primary file) and, if you want to work without this program, you must open the file yourself one way or another.

The logic of the program itself is simply a **DO WHILE** loop which keeps displaying the choices on the screen until you either choose one or you choose to exit from the program.

If you want, you can build up a collection of programs like this and simplify the life of your user by using QUICKMENU to create nice-looking menus, which call all of your **.CMD** programs. Also, if you don't like the way the "master list" menu looks on the screen, you can use **QUICKMENU** to create a replacement for it, a **.MEN** program, that calls the other programs.

3. Adding Data (.ADD)

The program used to add new records to your database is the **.ADD** program. It is normally called from the main program. If you want to use this program independently of the **.CMD** program, you will have to open the database yourself, possibly with an index.

This program displays a data entry screen which you use to put new values into your database. This is done over and over until you tell it you are through.

Each time a data entry screen is displayed, any default values are put into the fields first, via the **.FAU** program. Next, you do your data entry for all fields via the **.IO** program. After you have entered all fields (you can skip over fields by using **CTRL-W** in dBASE), the program will call the **.VAL** program and perform error-checking on the data you entered.

For each error on input, you will be required to re-enter a legal value. Once all fields are corrected, the data is added to the database and the input screen is redisplayed.

To tell the program you are done adding records, you must enter a special value for the first input field. The value you need to enter for this depends on the data type of the first field. The most common case is where the first input field is a character type field. In this case, all you need to do is enter blanks for this field and then enter **CTRL-W** (or skip all remaining fields). Validation of the remaining fields will not be performed.

We recommend making your first field a character type field and having the default value for that field be blanks. This will simplify data entry, so long as you choose a field for which you never actually want to enter blanks as data!

Here are the special values (that will cause an exit from adding) for the other data types:

Type	Special Value
I	0
$	0.00
N	0.0
S	000-00-0000
D	00/00/00
T	( )000-0000
L	do not use as first field

Note: If your database has a database key, the field used to check for the special value will be the first field of your key, rather than the first input field on the screen.

The logic of the **.ADD** program is quite simple. There is a **DO WHILE** loop which keeps displaying the data entry screen. The default values are set before displaying the screen. The special

value is checked right after reading the screen. If the user does not want to exit, a blank record is appended to the database, after which all database fields are replaced by the screen entries, which are then released.

4. Getting Records (.GET)

This program allows you to do most of the maintenance that you need to do with records that are already in the database.

It makes heavy use of the Automatic Pilot dialogue on the last 3 lines of the screen to help you do what you want to do. If the Pilot is turned off when you generate the **.GET** program, most of the logic will still be there, but there will be no dialogue built in.

The basic concept of the **.GET** program is that at any moment you are looking at one record in your database. You can think of this as a **window** into your database. This record is called your **current record** and it is displayed on the screen (using the **.OUT** program).

You can move **forward** in the database, making each successive record your current record, so that it will be displayed on your screen window. Or you can move **backward.** Or you can name a particular record and it will be automatically found.

What you do with each record is up to you. You may only want to look at it to find some information. Or you may want to print it on paper to have a permanent copy. Or you may want to change something in it or get rid of it altogether.

The **.GET** program allows you to do **all** these things. Once you have a current record, you can **print, edit, or delete** it. The following sections describe how each of these activities works.

a.Finding Records

As mentioned above, at any moment the screen window will be displaying the "current record" in your database. When you first start the **.GET** program, this will simply be the first record in your database.

Most likely, you will want to look at some other record (for example you may want to look up a particular customer or an invoice).

If you did not use Automatic Pilot, you will have to do some programming to help the user do this.

But if you used Automatic Pilot, you should be able to find the record you want in seconds. On the bottom of the screen you should see the following message:

ENTER N FOR NEXT, P FOR PREVIOUS
S FOR SEARCH, M FOR MORE
PRESS RETURN WHEN DONE

This shows you how to find the record you want. If you know the exact record, you should enter **S** for search.

This is where it becomes important whether you have set up a database key or not. If you have not, you will only be able to use the first input field on the screen to find records and it will become very slow as the size of your file gets bigger. (In fact, if you take this approach and you selected a poor field as your first, you may have to regenerate your programs over again). Also, if you do not have a database key, your records will be in the order in which you entered them, making it difficult to zero in on one by browsing. These are all powerful arguments in favor of using a key. The only argument against is that a key takes up quite a bit of disk space. However, if you have 8" floppies or a hard disk, you should certainly use a database key for files where you need to search for things a lot.

If you enter **S** for search, here is what will happen. The screen will be erased and re-displayed with the following message:

PLEASE ENTER VALUES TO SEARCH FOR

There will be input fields on the screen into which you can type the values you want to find. **If your database field is not keyed, there will only be your first database field to enter. If your database is keyed, there will be all the database key fields to enter** in the exact same locations that they appear when you do data entry. To find an exact match on them, you must enter them all.

When you have entered all the fields to search for, the program will either find the record you want or else tell you that it couldn't find it. If it found it, then that record will become your **current record.** It will be displayed in the window. If your search fails, then the record which was previously your current record will be your current record.

You can perform this search procedure as much as you like. Each record found will become your current record.

You may find, in a keyed database, that you need to **browse** through the file forward or backward to find the particular record you want. This will happen when you have two records with the same database key. (Doing a search will always find the first one only).

Fortunately, in a keyed database, the records are in the order of their **keys.** So, if you have records with the **same key** and the program finds the first of them, all you have to do is enter **N** for next, once or twice, and you will find the record you want. This aspect of a keyed database also makes it possible to browse through a database in alphabetical or number order, if the right fields are set up as keys.

In any case, using the **N** and **P** commands is very simple. If you enter **N**, you will move to the next record in the database. If you enter **P**, you will move to the previous record.

Once you find the record you want, you can do a lot more with it. To do this, enter **M** for **MORE**. When you are done looking at records, you can exit from the **.GET** program by pressing **RETURN**.

b. Editing Records (.ED)

The next few sections will assume that you have found a particular record in your database, made it your current record, and now wish to do more with it.

Once you enter **M** for more, the screen will now display:

ENTER E TO EDIT
D TO DELETE
P TO PRINT, PRESS RETURN WHEN DONE

This is a list of the things you can do with the current record. If you want to edit (ie. change) the current record, enter **E**.

Editing a record will cause the **.GET** program to call the **.ED** program. (If you have generated a .GET but not an .ED, you will have a problem).

The edit program will display the current record over and over, allowing you to change any of the fields, and asking you **ANY MORE CHANGES (Y/N)?**

Each time you enter data (via the **.IO** program), all fields that require validation will be validated by calling the **.VAL** program, just as was done when adding new records.

Once you indicate that there are no more changes, the program will return to the **.GET** program and your changes will be put into the database.

c.Deleting Records

To delete the current record from the database, enter **D** for delete. As a precaution, the program will ask **ARE YOU SURE (Y/N)**. Enter **Y** or **N**.

Because of the way dBASE-1I deletes records, the records you delete this way will only be "tagged" or "marked" for deletion but will stay in the database until you exit from **MORE** by pressing **RETURN**. At this time, you will be asked,

WANT TO PERMANENTLY DELETE RECORDS(Y/N).

If you enter **Y**, all the records you deleted will now be completely removed from the database. If you enter **N**, all of

these records will be restored to the way they were before you deleted them.

The reason for deleting records in groups this way is that the deletion process in dBASE can be slow and it is more efficient if records are actually removed in groups.

d.Printing Records

To print the current record on a printer, enter **P** for **PRINT.** (If you enter **RETURN**, you will go back to the **.GET** program and be able to get other records in the database).

The print feature is very handy for producing a document, such as an invoice or a product description.

When you enter **P**, the program will say,

PLEASE SET UP PRINTER.

At this point, you should make sure your printer is set up so that the record will print where you want it to. When you are ready, press any keyboard key (e.g. **RETURN**) and the current record will be printed.

The record will be printed exactly as it appeared on the screen, except for the dialogue which appeared on the bottom.(The **.OUT** program is used for printing.)

This concludes the discussion of the things you can do with your current record. The following sections describe the remaining programs which are generated by QUICKCODE and used by the above programs.

e.Default Values (.FAU)

The default program stores default values to those fields for which you specified defaults in QUICKCODE. For each field, if it is a **database field**, there will be created a memory variable with same name, but an **M** in front. If it is a **display-only** field, then the default will be stored to the field name itself.

The **.FAU** program is extremely easy to use with a variety of programs or replace it with a different default program of your choosing.

f.Validation

The validation program performs a validation procedure for each field which you selected for validation in QUICKCODE.

The validation procedure consists of a **DO WHILE** loop which keeps reading a user-input value until it satisfies the validation test. If it fails the test, an error message is displayed and the cursor is positioned at the same location as the original value was entered in the **.IO** program.

WARNING- The correct use of the validation program requires that the screen locations in the **.VAL** program be the same as in the **.IO** program. In general, if you are working with an existing program and you are changing anything on the screen in QUICKSCREEN mode, you should make sure that you re-generate both the **.IO** and the **.VAL** programs together, so that they remain coordinated with each other.

g.Input/Output (.IO)

This program is the program used for doing data entry when adding or editing records.

It contains the screen layout that you created in QUICKSCREEN mode, including titles and all fields. All database fields are defined as input fields.

If the Automatic Pilot was on when QUICKCODE was used, the fields and titles will appear for all lines except lines 21-23, which are reserved for the dialogue.

h.Output Only (.OUT)

This is the program used for printing records and displaying the current record.

It contains the screen layout that you created in QUICKSCREEN mode, including titles and all fields. It is exactly like the **.IO** program except for the following: for all fields, the **.OUT** program only contains code to display the fields. Both database and display-only are set up for output. There are no input fields.

Since the **.OUT** program is one way you can print forms on your printer, it is useful to look at how you could print forms of almost any size using more than one **.OUT** program.

Since the Automatic Pilot puts headings and titles into your **.OUT** program which you may not want to use on a form, to create large forms you will have to turn **off** the Automatic Pilot. This means you need to be careful.

Example:

Suppose you have a billing database called INVOICE, complete with **ADD,GET,**etc. programs. Now, you want to print a 96 line invoice on your printer. You can't use the **P** for print, because it has titles on top and is only 24 lines high.

Step 1-Call up your existing **.SCR** file via the **O** for old command in the main menu.

Step 2-Rename it by using the N command in the main menu and making up a new name like **BIGBILL1.**

Step 3-Go to the output options(**X**) menu and set everything to **N**, except the **.OUT** option (number 10) and the **.SCR** option (number 13).

Step 4-Go to QUICKSCREEN mode and make the screen look like you want the first 24 lines of your invoice to look.

Step 5-Go to the main menu and use the program generation command. QUICKCODE will generate **BIGBILL1.SCR** and **BIGBILL1.OUT.**

The following 3 steps should be repeated for each additional 24 lines you want to add to your bill size.(The limit is a total size of 96 lines)

Step 6-Rename your screen in the main menu by adding 1 to the last digit of the first name (BIGBILL2, next time BIGBILL3,etc.)

Step 7-Go to the **S** menu and put a new value into entry number 17, the **TOP LINE NUMBER** of your form. (The second part of your invoice would have a value of 24, then the next one 48, then 72 for the fourth part.)

Step 8-Now, go to QUICKSCREEN mode, build the next part of your form, and generate **BIGBILL2.SCR** and **BIGBILL2.OUT**, etc.

When you are done, you should have up to 4 programs: **BIGBILL1.OUT, BIGBILL2.OUT, BIGBILL3.OUT, BIGBILL4.OUT.** These can be used to print your invoice. You will have to insert some code into the **.GET** program to print the entire invoice.

Here is how: Go into your .GET program with an editor and find the location of the statements

PLEASE SET UP PRINTER
SET FORMAT TO PRINT

The next line should be : **DO INVOICE.OUT**
This should be deleted and replaced by:

DO BIGBILL1.OUT
DO BIGBILL2.OUT
DO BIGBILL3.OUT
DO BIGBILL4.OUT

(for as many programs as you created)

The result will be that when you press **P** in the **.GET** program, the full 96 line invoice will print.

WARNING: If you do this, you must not re-generate your **.GET** program or your change will be wiped out. If you do

regenerate, then you should perform the same deletion and replacement on the new program as you did above.

5. Running dBASE Reports (.RPT)

The **.RPT** program provides a convenient way to run or to create reports using the dBASE report generator. In future versions of QUICKCODE, this function will be expanded to help you create more powerful and useful reports.

To run reports, you should have the "master list" of choices on the screen. Enter **R** You will now be asked **WANT REPORT SENT TO PRINTER?** If you enter **Y**, your report will be directed to your printer (this could cause a problem for you if your printer is missing or turned off).

If you enter **N**, you still have the choice of whether you want the report to be sent to your screen or to be output to a disk file for future use. The program will ask,

WANT REPORT SENT TO A FILE?

If you want it sent to a file, enter **Y** The program will say **ENTER FILE NAME.** This should be the name of the file you want the report output to. (If you are using dBASE version 2.02, you must enter a full 8 character name.)

No matter where you are having your report come out, the next thing the program will say is **ENTER REPORT NAME.**

If you want to run an **existing** report, enter the name of a report you have already created. If you want to create a new report, enter a name that does not yet exist.

If you create a **new** report, you will go directly into the dBASE report generator, which is documented in the dBASE manual.

If you run a new report, the program will tell you to set up your printer if the report is to be printed. Then it will output your program to either the printer, your CRT, or a disk file.

6.Mailing Labels and Forms (.LBL)

The **.LBL** program provides you with a capability to print mailing labels or almost any kind of report form. To run this program, you should have the "master list" of choices on the screen. Enter **L** for labels/forms.

The main thing you need to be concerned about with labels or forms is how many lines per label you need to print and how many lines long your physical labels are. The difference must be compensated for by the program for each label printed, so that the printing will come out at the same spot on each label.

(For simplicity sake, the word **label** will be used to mean **label or form** for the remainder of this section.)

The way QUICKCODE determines how many lines you are printing per label is as follows: The **first non-blank line** in QUICKSCREEN mode (excluding lines 0 and 1 if Automatic Pilot is on) is considered the starting line for the label. The **last non-blank line** in QUICKSCREEN mode is the end of the label. If the start of the label is on line 6 and the end is on line 10, then the number of printing lines is 5.

This way, even if you have a short label, you can create it in the middle of the screen, rather than at the top, for your convenience.

When you are running labels, the program will ask you:

HOW MANY LINES PER LABEL/FORM?
(ENTER 0 TO GET PAGE EJECTS)
PLEASE COUNT THE SPACE BETWEEN LABELS

This is where you specify how long your actual labels are. You can determine this by counting the number of lines from the top of one label to the exact same point on the following label. Usually, there are 6 lines per inch.

Enter this number or, if you want the program to cause your printer to "page eject" (form feed) after each label, enter **0**.

The program will tell you to set up your printer and then will go through your database one record at a time, printing your data on each label.

Suggestion: You can run labels or forms in any order you like by creating different screens and programs that use the same database, but have different database keys. For example, you could print customer mailing labels in zip code order and a customer list in alphabetical order. (See the following section on keyed databases for details).

7.The WordStar Connection (.WS)

This program is used to get data from your database and output it to a file that can be used by WordStar/MailMerge. To run it, you must have the "master list" on your screen. Enter **W** for WordStar.

The program will produce two files. One is a **.DOC** which is a file that can be turned into a form letter just by calling it up in WordStar and putting your letter into it. It already contains all the commands needed by WordStar to read the dBASE data.

The other file is the **.DAT** file, which contains all data that you want to read into WordStar. It is a nicely formatted sequential file, with all fields in quotes and separated by commas. It would also be useful for reading dBASE data into BASIC, COBOL, etc.,since this type of file is standard input to those languages.

The program only asks you one guestion:

NAME OF DATA FILE FOR WordStar

Enter the name you want to use. Make sure this name does not already exist on the disk. In particular, make sure you do not have a letter typed into a **.DOC** file by the same name or your letter will get wiped out.
(If you are using dBASE version 2.02, you must type a full 8 character name for your file).

The program will now create your **.DOC** and **.DAT** and tell you what it is doing. When it is done, you can put your form letter in as follows:

WS UP.DOC

The usual question that is asked about the above command is **"What's up.doc?"** The answer, of course, is "your form letter!"

The **.DOC** file will contain the name of the data file for WordStar to read, and a list of field names to read. If a field name contained a colon, it will be changed to a dash in the **.DOC** file for compatibility with WordStar.

It is best to read the WordStar documentation when using these files with WordStar.

8.Keyed Databases (.GO)

The concept of a database key, and the costs and benefits of using one, have been covered in detail in other sections of this manual. This section will describe how keys are used by the programs QUICKCODE generates. It is strongly suggested that anyone thinking of using a database key read this section carefully.

Definition

The programs generated by QUICKCODE use one primary file per program. This file is the database file (.DBF) that is usually created when the programs are generated. Each family of programs you generate use only one database file and may have only one database key for that file. (A database key may **itself** be made up of as many as ten database fields from the database - i.e. fields that appear in QUICKSCREEN mode).

This permits any one program to store and retrieve records in a sorted order - where the order can involve as many as ten fields.

File Creation

When you create a database file that has a database key, you cannot start to use it as soon as QUICKCODE finishes creating it, because the database key has not been completely set up. If you try to add records before setting up the database key, your records will be in the file but not in key order.

Setting up the key consists of running the .GO program, which you must create when you are using a database key with your program. The purpose of this .GO program is to set up the dBASE index feature so that your key will work.

While it is best to run the .GO program before adding any records, there will be no harm if you run it after you have added records. It has the ability to set up an index **with** or **without** data in the file.

In fact, you could turn a non-keyed database into a keyed database just by generating a .GO program and running it. (You had better know what you are doing, though!)

Here is how you run a .GO program:

```
DBASE STOPN.GO    or    DBASE
                        ENTER DATE (MM/DD/YY) (RETURN)
                        .DO STOPN.GO
```

The .GO program is also useful if your index files ever become damaged. Just re-run the .GO program and you will get a shiny, new index file.

Multiple Keys

There is a valuable technique whereby you can set up more than one key for the same database. This takes advantage of the fact that you can create many screens all of which use the same database. As a result, you can have 25 different label programs, each printing labels from the same file in a different order. Here's how to do this:

The main requirements of having different screens share the same database are as follows:

1) One screen must be the master screen, which contains all database fields that will be used by any screen. This screen must have the **.DBF** output option set to **Y** to create the full database file once.

2) All other screens must have different names from the master screen and from each other. Each must have the **.DBF** output option set to **N**. Any fields used by these screens must be spelled exactly the same as those fields on the master screen. Not all fields need to be on any one screen.

3) All screens, master or otherwise, must have the same name set for the **database name** on the S menu.

Thus, the master screen is used to create the database and add/edit records. However, the reports, forms, and WordStar programs can be used for any of the screens to produce a variety of output from the same database.

The Catch

There has to be a catch. How can you have all of these database keys- name, zip code, city, state- coming from the same database. Here's the catch: for each screen other than the master, before running reports, you must run the corresponding .GO file to set up the index file, unless no records have been added, changed, or removed since the last time you used that screen.

The reason for this is that an index is kept up to date when the database is being changed. But since the database is only being changed via the **master screen**, only the index for that screen is being kept up to date.

Example:

Prior to running a collection of reports, you might enter dBASE and type:

```
.DO NAME.GO
.DO ZIPCODE.GO
.DO CITY.GO
```

Then you could go into the programs and run the reports or labels you need, which would print in name, zipcode, or city order.

(If you are ambitious, you might figure a way to put the above **.DO** commands right into the programs that run the reports, to save yourself some typing).

9.QUICKMENU (.MEN)

The QUICKMENU feature itself was described earlier in this manual. Here is a brief description of how to use the **.MEN** program it creates.

The **.MEN** program can be used for two purposes. In a non-programming environment (i.e. Automatic Pilot), it can produce substitute menus for the ones built into the system by QUICKCODE (i.e. the **CMD** program).

In this case, all you need do is build your own menu, the way you like to see it, and set up your field names to be the programs you need to run.

Example:
Replace MAILLIST.CMD with MAILLIST.MEN where MAILLIST.MEN looks like this:

ABC COMPANY

SELECT ONE PLEASE

1) NEW CUSTOMERS	**;MAILLIST.ADD**
2) OLD CUSTOMERS	**;MAILLIST.GET**
3) PRINT LABELS	**;MAILLIST.LBL**
4) FORM LETTERS	**;MAILLIST.WS**

(To run this entire system, all you need to do is run **MAILLIST.MEN**).

In a programming environment, QUICKMENU will help you quickly set up a collection of menus (a "tree") which can be pieced together to form an information system:

this:	calls these:	which call these:
HELLO.MEN		
	CUSTOMER.MEN	**CUSTOMER.ADD**
		CUSTOMER.GET
	ITEM.MEN	**ITEM.ADD**
		ITEM.WS

A "tree" of these three menus can be the nucleus of a large information system, calling dozens of programs.

10.Printing Screens (.PRN)

One of the output options of QUICKCODE is to produce screen image files (**.PRN** files). These are files which contain the screen image you built in QUICKSCREEN mode, so that you can create documentation or instructions for your programs.

The screen image will have all lines and titles where they belong. However, where the field names appear on the screen, the screen image file will have colons separated by a space equal to the length of the field and resembling the input screen as it actually appears when you are running the **.ADD** program.

.PRN files can be produced for regular screens and for QUICKMENU screens.

To print these files, all you need to do is use the CP/M PIP program (**PIP LST:=x.PRN**).

D. OTHER ISSUES

This section covers other aspects of QUICKCODE that have not been covered in the previous sections.

1.New Feature Summary

This is a list of the new features found in QUICKCODE™ which were not in QUICKSCREEN.

a.Startup

QUICKCODE can be started by typing any of the following:

i) QC newnam
ii) QC oldnam
iii) QC oldnam.TXT

i) This will set the new screen name to newnam.
ii) This will read in oldnam.SCR and go directly to QUICKSCREEN mode.
iii) This will read in oldnam.TXT, which contains a screen layout created by a text editor (like ED or WordStar).

b.MAIN MENU

This now contains several new commands:

M= will set "QUICKMENU" on, for generating MENU programs.
T=will load a text file created by an external text editor.
E=will exit to CP/M,after asking "ARE YOU SURE?"
ESC=will cause program generation to take place,after which the main menu will reappear.

In addition, the main menu shows the new QUICKSCREEN mode commands (described below), and the following information:

-Whether or not QUICKMENU is on
-Whether or not Automatic Pilot is on
-The names of all programs to be generated

c.QUICKSCREEN Mode

There are a number of new features in QUICKSCREEN mode:

a) **Fields mode**-At any time,you can go into fields mode (described below), in order to specify various things about your data fields.From fields mode, you can return to QUICKSCREEN mode to do more work on your screen.
b) **Line/Column Monitor**-This will show you what line and column the cursor is positioned on, as well as the names of your screen and database.
c) **Auto Pilot Monitor**-This will show you whether Automatic Pilot is on.
d) **Left Margin/Right Margin**-These will position the cursor at the left or right margin.
e) **Center**- This will take any text on a line and center it.

f) **Shift Left/Right**-These will shift the text on a line left or right.
g) **Column Insert/Delete**-These will insert a blank column or delete a blank column,shifting the screen contents appropriately.
h) **Grid**- This will cover the screen with a grid so that all blank spaces will be filled in. The grid can be added or removed at will.
i) **Tab**- This will move the cursor to the next tab stop.

d.FIELDS Mode

This is the most important new feature in QUICKCODE. It will allow you to specify a variety of things about your data fields for program generation. Fields mode must be entered from QUIKSCREEN mode and there must be at least one data field on the screen. In fields mode,the following commands exist:

a)HELP- This is the same as the help command in QUICKSCREEN mode. It will return to the main menu.
b)SAVE- This is the same as the save command in QUICKSCREEN mode.It will save your screen specifications to disk.
c)CURSOR MOVEMENT- These are the same as in QUICKSCREEN mode.

The fields screen allows you to set the following characteristics for your input data fields:
a)data type (see below)
b)field length
c)file status (file,nonfile,database key)
d)default value
e)minimum value for data entry
f)maximum value for data entry
g)error message for data entry
h)validation method (see below)

Data Types

N=Numeric (1 decimal place)
I=Integer
C=Character
$=Dollars (2 decimal places)
D=date
T=Telephone
S=Social Security
L=Logical

Validation Methods

*=Minium/Maximum range checking
L/N=List checking (N=no blanks)
F=Validation via an indexed file

e.CONFIGURATION MENU

The "C" menu now includes all of the new QUICKSCREEN mode commands.

f.SCREEN CHARACTERS MENU

The "S" menu now allows you to set the following:

a) database name
b) automatic pilot
c) Line/column monitor
d) dBASE version (2.02 vs. 2.3)
e) tab size (for tab stops)
f) line number for top of screen

g.OUTPUT OPTIONS

The following output options now exist (can be turned on or off):

a) .ADD program to add records to database
b) .CMD program to call other programs
c) .DBF file for dBASE
e) .FAU program to set default values
f) .GET program to get records
g) .GO program to create index files
h) .IO program to do screen-oriented input/output
i) .LBL program to print labels or forms
j) .MEN program to provide a customized menu
k) .OUT program to do output to screen or printer
l) .PRN file to show screen image
m) .RPT file to generate reports
n) .SCR file to save screen descriptions
o) .VAL to validate data entry
p) .WS to put data into WordStar format

h.Automatic Pilot

This is used when you do not want to do any programming. It will create a user friendly dialog in the generated programs,and generally act to guarantee that the programs you generate make sense.

2. Old QUICKSCREEN Screens

Here are some guidelines in using screens which were created with the original **QUICKSCREEN** screen builder:

The screens you built with QUICKSCREEN are compatible with QUICKCODE, although they don't take advantage of all the new features. It is unlikely that you will want to load an old screen into QUICKCODE and immediately generate programs because:

a) The field names will all be considered type character, and their lengths will default to the maximum allowed. This is because there were no special characters in QUICKSCREEN.

b) The S, and X menus will be missing many entries, which did not exist in QUICKSCREEN. Just fill them in on your new menu.

However, it may still be worthwhile to re-use your old screens because the screen design and layout took time to develop and can be re-used. All you have to do to re-use a screen is to fix up the data types and some output options.

If you want numeric type data (money,integer), you must add the special characters $ and # to the end of your field names. If you need other data types, you will have to go to fields mode to set them.

Warning: When using QUICKCODE you should use the QUICK.CFG and MENU.MNU files that come on the disk. Do not use the old QUICK.CFG and MENU.MNU files that you had from QUICKSCREEN.

The other change that occurs in going to QUICKCODE is the name of the programs generated. The old **.CMD** program is now replaced by the **.IO** program. It is best to discard the old programs, since they cannot be easily used with the new system.

Note: See the previous section for a complete list of the new features found in QUICKCODE.

3. Using QUICKCODE with dUTIL

This section describes how QUICKCODE can be used with Fox & Geller's dUTIL dBASE-II utility. dUTIL is a program which can make your generated programs run faster, can allow you to modify and customize them more easily, and can help you debug and maintain your programs. (dUTIL is available from the same people who sell QUICKCODE or directly from Fox & Geller.)

The major aspect of your QUICKCODE-generated programs which makes them easy to use with dUTIL is that there are no **RETURN** statements in them. This means that you can perform **DO** processing on them and have your programs combined into bigger programs that run faster because they require less disk reading.

Thus, using dUTIL, you can combine the **GET** program with the **ED**, **IO** and **VAL** programs to make a more efficient program. (We do not recommend combining the CMD program or any menu with the programs it calls, because it tends to be slow and inefficient.)

Another way that dUTIL can help you with your programs is this: Normally, if you want to customize (i.e. change) the QUICKCODE-generated programs, the major problem is that if you want to re-generate the programs, your changes would get wiped out. With dUTIL, you can take the code that you'd like to insert in a program and put it into a separate **INCLUDE** file. Then, you can put one **INCLUDE** statement into your QUICKCODE-generated program and process with dUTIL. If you have to re-generate your programs, all you have to do to customize the new programs is put the INCLUDE statement(s) back into the program - saving you a lot of editing.

Finally, although every attempt was made to produce documented and readable code from QUICKCODE, dUTIL can do a lot to improve the readability of the generated programs with its caps and tab controls and commenting of **IF** and **DO WHILE** statements.

The dUTIL manual is very useful in explaining how dUTIL can save you work and improve your programs.

4. Using Existing Databases

There are two kinds of existing databases you may want to use with QUICKCODE:

1. A database which you created yourself prior to using QUICKCODE.

2. A database which you created with QUICKCODE, but which you now need to change for some reason.

Non-QUICKCODE Databases

It is not necessarily a simple matter to use QUICKCODE with a database that was created without QUICKCODE. The major problem is matching up the database fields in QUICKCODE with the fields in the existing database file.

Almost every kind of field can be matched to QUICKCODE, except character type fields greater than 79 characters long. If you have these, you will have to convert them to smaller fields (involving some programming) or you can treat them as 79 characters long, with some slight inconveniences.

In any case, you must create a screen whose fields match the fields in the database. The safest way to work is to create a new database with a new name and then convert your old file using the instructions given below on changing QUICKCODE databases.

Here is a guide for matching fields, based on the dBASE field definitions:

Field in dBASE DBF description	Matching Field in QUICKCODE Type	Length
C,25	C	25
N,5,2	$	5
N,5,0	I	5
N,5,1	N	5
N,5,3	No way to match	
L,1	L	1

dBASE does not have date, telephone, and social security fields. These all correspond to type character fields with lengths of 8, 13, and 11 respectively.

Changing QUICKCODE Databases

QUICKCODE provides a convenient alternative to the dBASE "modify structure" command. If you have a database called **OLDX** and you want to change it by adding a couple of new fields and perhaps changing the size of a field or two, here's how to do it:

a) Load the old screen into QUICKCODE and rename it to **NEWX** by using the **N** command in the main menu. Change the database name in the S menu to **NEWX** also.

b) Go into QUICKSCREEN mode or fields mode and change your field names and/or sizes.

c) Re-generate your programs, to ensure compatibility with the new database. Watch out for programs which you have customized!

d) When doing re-generation, make sure that you set the **.DBF** output option (number 3 on the X menu) to **Y**, so that an empty database file will be created.

e) After exiting QUICKCODE, go into dBASE and type the following:

.USE NEWX

.APPEND FROM OLDX

This will copy all your old records into your new database file. You should **not** delete your old file until you have **absolutely satisfied** yourself that all data has been copied over correctly.

Remember: If field sizes have changed, some data from OLDX may get lost. If field names have been changed, you will certainly lose information. If data types have been changed, you will probably lose information. It is best to experiment with test files until you understand how it works before you try it for real.

Appendix A: Problems

This section will describe many of the problems that can occur while using QUICKCODE, some of which will be due to user errors and some of which will be due to "bugs" or unusual circumstances. We want to hear about any aspects of the program which behave strangely or cause problems, so that they can be improved. The problems are broken down according to when they can happen:

- Startup
- Quickscreen mode
- Help menus
- Program generation
- Fields mode

Startup

Problem	Description/remedy
Disk won't boot	QUICKCODE disk does not come with CP/M on it. You must copy CP/M on to it.
Program won't start	All required files must be on QUICKCODE disk. See section II for list of files. Files may be damaged. Try copying backups from your backup disk.
Strange characters at start of program	Perform installation before anything else.
Error message: CANNOT READ CONFIGURATION FILE	QUICK.CFG is missing, damaged, or disk may be full. Check disk and copy backup of QUICK.CFG if necessary.

QUICKSCREEN Mode

Problem	Description/remedy
Cursor controls don't work	Configuration may be wrong. Get help via main menu and verify definitions. You may not have made your installation permanent.
Line/Column intersect isn't right	The intersection character is used only when a line character will be written over a column character or vice versa. An intersect character will not be written if there's already an intersect character in that location.
Text entered is not displayed on screen	Non-printing characters, such as control characters, are rejected as text.
Missing character at lower right hand corner of screen	The character at the lower right hand corner is often not displayed due to CRT handling problems. Any characters in that location will appear in all output files.

Help Menus

Problem	Description/remedy
Error message: CANNOT READ MENU	MENU.MNU may be missing or damaged or disk may be full. Restore from backup and try again.
Error message: CANNOT OPEN xxxx	Screen you are looking for is not there. Make sure the **.SCR** file is on your disk. Or else, use filename with disk name in it, such as **A:ABC**. Screen names should never include a period (.) or extension.
Error message: ERROR -- TRY AGAIN	You have entered an illegal command or number. No control-characters are allowed. Single character answers cannot be followed by **RETURN**. Numbers **must** be followed by **RETURN**.
Error message: ERROR -- CANNOT SAVE QUICK	QUICKSCREEN cannot save QUICK.CFG to disk. Disk may be full or files damaged. Restore from backup.

Program Generation

Problem	Description/remedy
Error message: ERROR TYPE # n FOR FIELD * YYYYY * AT LINE, COL = i, j	There is some ambiguity in your screen. YYYYY is the screen data causing the problem. i is the line number, j is the column number. Error types are: 1. Variable name is too long (see the maximum legal name size for your language). 2. Illegal name. Variable name contains character(s) which are not allowed.
Fields or data missing from programs, but not from Screen Description or Screen Image	QUICKCODE has certain limits on the number and size of screen data. Any fields which exceed this are not put in programs. These limits are as follows: Titles and headings are broken into pieces of no more than 20 characters each. The maximum number of such pieces on one screen is 140. The number of fields on one screen may not exceed 64. The total numbe of fields and titles on any one line may not exceed 20.
Error message: ERROR CREATING xxxx GIVE NEW NAME OR TRY ANOTHER DISK	One or more output files can't be output. Disk may be full or file name bad. For **.SCR** only, QUICKCODE will let you change the name or the disk.
Error message: ALREADY EXISTS. WANT TO DESTROY?	You are trying to create a **.DBF** that already exists. Answer **Y** to destroy the old one or **N** to leave it intact.
Error message: DBF TOO BIG. PRESS RETURN TO CONTINUE.	Your database fields total more than 1000 characters. Go to QUICKSCREEN or fields mode and reduce them.

Fields Mode

Problem	Description/remedy
Error messasge: ILLEGAL DATA TYPE	You have tried to enter a data type that is not allowed. Re-enter a legal data type.
Error message: DEFAULT, MIN, & MAX MUST BE = * NONE *	You cannot change data type unless those three all say * NONE *
Error message: ILLEGAL -- NOT NUMERIC (0-9)	You can only enter a number for this column.
Error message: CANNOT BE ZERO	Field length must be greater than zero.
Error message: FIELD NOT ON SCREEN	An internal QUICKCODE error has occurred. Please notify Fox & Geller.
Error message: SCREEN HAS BEEN ADJUSTED	You have changed the length of a field and an end of field character may have been moved on the screen.
Error message: TOO MANY FIELDS IN DATABASE	You have defined more than 32 database fields. You must remove some in QUICKSCREEN mode.
Error message: ILLEGAL FILE STATUS	In this column, you can only enter F, a digit, or a blank.
Error message: ILLEGAL CHARACTER	For some data types, only certain characters are legal for default, min, max.
Error message: PREVIOUS TYPE MUST BE C,D,T, OR S	You cannot change to the data type you want. Go to QUICKSCREEN mode and make primary type be character.
Error message: MUST BE F, L/N, or *	The only legal validation codes are F, L, N, or *
Error message: ERROR CODE IS NOT ZERO	You can only work with fields that have error code of 0. Go to QUICKSCREEN mode and fix this field

Appendix B: ASCII Characters and Decimal Values

The following table lists all computer definable characters according to their "decimal" value. In QUICKCODE command definitions, you will need to enter the decimal value for the character you want to use. Control characters (CTRL-) are treated as one character, even though they require pressing two keys.

Decimal	Char.	Decimal	Char.	Decimal	Char.
0	CTRL-@	44	,	88	X
1	CTRL-A	45	-	89	Y
2	CTRL-B	46	.	90	Z
3	CTRL-C	47	/	91	LEFT BRACKET
4	CTRL-D	48	0	92	BACKSLASH
5	CTRL-E	49	1	93	RIGHT BRACKET
6	CTRL-F	50	2	94	UP ARROW
7	CTRL-G	51	3	95	UNDERLINE
8	CTRL-H	52	4	96	GRAVE
9	TAB/CTRL-I	53	5	97	a
10	CTRL-J	54	6	98	b
11	CTRL-K	55	7	99	c
12	CTRL-L	56	8	100	d
13	RETURN	57	9	101	e
14	CTRL-N	58	:	102	f
15	CTRL-O	59	;	103	g
16	CTRL-P	60	LESS THAN	104	h
17	CTRL-Q	61	=	105	i
18	CTRL-R	62	GREATER THAN	106	j
19	CTRL-S	63	?	107	k
20	CTRL-T	64	@	108	l
21	CTRL-U	65	A	109	m
22	CTRL-V	66	B	110	n
23	CTRL-W	67	C	111	o
24	CTRL-X	68	D	112	p
25	CTRL-Y	69	E	113	q
26	CTRL-Z	70	F	114	r
27	ESC	71	G	115	s
28	FS	72	H	116	t
29	GS	73	I	117	u
30	RS	74	J	118	v
31	US	75	K	119	w
32	SPACE	76	L	120	x
33	!	77	M	121	y
34	"	78	N	122	z
35	#	79	O	123	LEFT BRACE
36	$	80	P	124	VERTICAL LINE
37	%	81	Q	125	RIGHT BRACE
38	&	82	R	126	TILDA
39	'	83	S	127	DEL/RUBOUT
40	(	84	T		
41	)	85	U		
42	*	86	V		
43	+	87	W		

The standard printing characters fall between 32 and 126. Control characters fall between 0 and 31.

Appendix C:
QUICKCODE™ Version 2.1 New Features

NOTE: If you are using QUICKCODE for the first time, please read the main user manual and learn to operate the program **before** reading about these new features. Some of the new features are now listed on the QUICKCODE menus, even though you won't see them in the main user manual. To see how the latest menus look, run the QUICKCODE program itself.

The following are the major new features of QUICKCODE Version 2.1 which are described below:

1. 132 Columns
2. Four Up Mailing Labels
3. dSCAN™
4. Unique Database Keys
5. Alternate Labels and Forms
6. Individual Program Generation
7. Automatic Indexing
8. Default Drive

Other Changes in Version 2.1

1. The maximum size for display-only fields has been reduced to 10 characters.

2. In QUICKSCREEN mode, when you move the cursor past the top or bottom margin, it will no longer move to the next or previous column.

3. In QUICKMENU, you can now "nest" menus by using the RETURN command in your menus. These can be used with Fox & Geller's dUTIL™, since the latest version has the option to suppress RETURN statements.

4. Bug fixes since version 2.0A:
   - Error in .RPT program using variable MQ:RDSK
   - In QUICKSCREEN mode, database fields can now be lower case.
   - In the .LBL program, commands using ?? are now spaced correctly.
   - In the .RPT program, questions about where to send your reports can now be answered in lower case.
   - Problems with CRT wraparound that occurred with some CRT's will no longer occur.
   - 10 character DBF names (including drive name) are now allowed

Appendix C: VERSION 2.1 Features

1. 132 Columns

QUICKCODE version 2.1 has the ability to create screens, forms, and labels with a width of up to 132 characters. Screens of anything from 5 or 10 characters up to 132 characters can be used. It is suggested that, unless you are fortunate enough to have a CRT that can display 132 characters per line, you only use screens wider than 80 characters to produce **.LBL** and **.OUT** programs. If you create a **.IO** program wider than 80 characters, you will have a problem when you try to use the ADD or GET options in your generated programs. (Note: You can also produce **.PRN** and **.SCR** files for these wide screens without any problems.)

How to Create Wide Screens

When you receive QUICKCODE, it is set up so that you can create screens and forms 80 characters wide. Anytime you want to create a wider screen, you must follow these steps:

- Go from the main menu to the "S" menu in QUICKCODE.
- Change item **(8) RIGHT MARGIN** to the width of the screen that you want. If you want 132 characters, then change the margin to be 131.
- If you want to make this margin your "permanent" right margin (i.e. the margin that will be used for all new screens), enter **S** to SAVE it.
- Enter **Q** to go back to QUICKSCREEN mode to create your screen.

In QUICKSCREEN Mode

When you go into QUICKSCREEN mode, you will see columns 0 thru 79 displayed, just as you would for a screen 80 characters wide. In fact, you will never be able to see more than 80 columns at a time, because your CRT is limited to 80 characters. However, your entire screen will still be there - even the part you can't see!

Since your screen is now too wide to display on the CRT all at once, it has been divided into two parts - the left and right parts. You can look at the left part or the right part, but not **both** parts at the same time. If you are looking at columns 0 thru 79, then you are looking at the left part. To look at the right part, enter the "toggle" command, which we have set to CTRL-Z. This command will cause the right part of your screen to be displayed on the CRT. (Note: If CTRL-Z is not a convenient control for your system, you can change it to some other code by going to the "C" menu.)

If you have typed the "toggle" command, you will now be looking at columns 52-131. The right part of your screen will always begin at column 52 and end with your right margin. Please notice that some of the screen is on both the left and right parts of the screen: columns 52-79. This is done so that if you're putting fields and titles on both parts of the screen, it will be easier to work with the two parts.

To switch back to the left part, use the "toggle" command, CTRL-Z. You should now be looking at columns 0-79. Now you can see what the "toggle" command does: it allows you to switch or "toggle" between the two parts of your screen: the left part and the right part. Toggling back and forth has no effect whatsoever on the contents of your screen, your database, or your generated programs. It is simply a way to display and create screens wider than 80 characters.

There is one other phrase we would like to clarify in talking about screens wider than 80 characters. This is your screen "window." Your screen "window" can be thought of as the part of your screen which you can see on your CRT at any moment - that is, the 80 character section that can fit. At times, there will be columns to the left of the "window" and columns to the right of the "window." But the window is still 80 columns itself. It is also possible to move the window to the left or right. For example, if the window is showing columns 0-79 it is possible to move it to the right 10 columns, so that it will be showing columns 10-89. This is not done with the toggle command. The techniques for doing this will be described in detail below.

Working Within the Window

When you are working in QUICKSCREEN mode with a wide screen, you will always be working within the 80 character window. Whether this window is columns 0-79 or columns 42-121, you are still working within a window of 80 columns. This section will describe the commands you can use within the window to create, move, or delete fields and text.

When working within the window, keep in mind that the line/column monitor at the upper left of the screen will always tell you exactly what line and column the cursor is at, so that you can always "get your bearings." Also, keep in mind that there may be parts of the screen to the left or right of the window that may be affected by what you do within the window. It is good practice to occasionally toggle to the other part of the screen to make sure of what is there.

Cursor Movement Within the Window

You can move the cursor around within the window using the cursor left, right, up, and down commands in the same way as you would with normal 80 column screens. But you should be careful when you approach the left or right edge of the window. If you are positioned at the right edge (i.e. rightmost column) of the window and you use the "cursor right" command, you will cause the window to shift to the right one column. Similarly, if you are at the left edge of the window and you use the "cursor left" command, you will cause the window to shift to the left one column. This shifting of the window is called "horizontal scrolling."

Example:

The window is currently displaying columns 0-79, and the cursor is positioned at line 5, column 79.

The line/column counter indicates column 79.

If you enter the "cursor right" command, everything in the window will shift to the left and you will see the window displaying columns 1-80. The cursor itself will **not** move. The line/column counter will now read column 80. You will have just performed horizontal scrolling, having scrolled the window one column to the right.

You can move the cursor to the left edge, the middle, or the right edge of the window in the same way that you do with normal 80 column screens by using the **Left Margin, Middle, and Right Margin** commands.

The **TAB** command will work the same as it does on normal 80 column screens. The cursor will move to the next tab stop, based on the tab size that is in effect (see p.67 of the main user manual). However, if the cursor is near the right edge of the window, using the **TAB** command will cause horizontal scrolling, so that the window will move to the right (just enough so that the next tab stop is reached). This should leave the cursor positioned at the right edge of the window, with the line/column monitor indicating that the column is set at the next tab stop. This is a fast way to perform horizontal scrolling.

Line Drawing/Deleting

The **LINE, COLUMN, DEL LIN,** and **DEL COL** commands work the same as they do on normal 80 column screens (see p.56-57 of the main manual). However, when you are working in a window for wide screens, these commands will affect the part of the screen that is not in the window. That is, these commands operate on your entire screen, regardless of where the window is, even though you may not see their effects.

Example:

The screen window is displaying columns 0-79, for a screen whose right margin is 131. The cursor is at line 5, column 50. You enter the LINE command and press "-" to draw a horizontal line of dashes. In the window, you will see a line of dashes drawn on line 5 from column 50 to column 79. However, there will also be a line of dashes drawn in columns 80-131, although you don't see it on the screen now. If you toggle to the right part of the screen, you will see a line of dashes which goes on line 5 from column 52 to column 131. Similarly, if you delete a line by using the **DEL LIN** command, the line will be deleted all the way to column 131, And, if you delete a column which was already blank, **all**

columns to the right of it (all the way to column 131) will be shifted to the left one column, even though they may not currently be seen in the window.

Centering Text

The **CENTER** command will operate on your entire screen, from the left margin to the right margin, regardless of where the window happens to be. Text and fields not displayed in the window will be centered, too. If centering these fields causes them to be put into the window, you will see them appear in the window.

Shifting and Erasing Text

The **LSHIFT, RSHIFT,** and **ERASE** commands work similarly to line drawing and centering commands, That is, they operate on the entire screen, regardless of where the window happens to be. Thus, they can be used to shift or erase text that is not currently being displayed in the window.

Grid Command

The **GRID** command will operate as described on p.57 of the main manual, drawing a "grid" of dots in all the white space on the screen to help you in designing screens. The grid will only be drawn in the window being displayed, but will continue to be drawn until you turn off the grid by entering the GRID command again. If a margin is set so that part of your CRT display is outside of a margin, using the grid command will show you what part of the CRT display is actually part of your screen. (this is helpful when creating screens that are greater than 80 but less than 132 characters wide.)

Toggle Command

As described above, the **TOGGLE** command will let you switch or "toggle" between the two parts of your screen by shifting the window to either columns 0-79 or columns 52-132. (If your right margin is less than 132, it will still display the right part beginning at column 52).

Using Data Fields on Wide Screens

The main effect on data fields of using wide screens is that **character** type fields can now be as long as 131 characters. If you use the **default** method of setting the field size, as described on p.74 of the main manual, the size of a character type field will be limited by the right margin setting (if the rest of the line is blank). For example, a character type field which begins at column 3 (for a right margin set at 131) will be assigned a default length of 129.

Additional Notes on Wide Screens

You can type text past the right edge of the window anytime you wish and it will automatically cause the window to shift right one column, similar to the CURSOR RIGHT command. However, the screen will be redisplayed very slowly. If you want to shift the window to the right 10 or 20 columns, use the TAB command as described below.

Anytime you have shifted the window by using cursor movement commands or by entering text, if you leave QUICKSCREEN Mode and then return to it, the window will remain where it was when you left QUICKSCREEN Mode.

Each screen or form you create can have its own left and right margin settings independent of other screens you have built. These margins will be in effect anytime in the future when you call up the screen for modifications.

If you want to shift the window (scroll horizontally) by 20 or 30 columns without using the toggle command, the best way is to position the cursor at the right edge of the window and use several TAB commands.

The limits on screen contents described on p.135 of the main manual have been increased to accommodate 132 column screens. Titles and headings are still broken into pieces of no more than 20 characters each, but there are now a maximum of 230 such pieces per screen. The maximum number of fields per screen is still 64, but the maximum number of fields and titles on one line is now 33.

2. Four Up Mailing Labels

Before describing this feature in detail, it is important to clarify the meaning of the terms **label** and **form.** In this manual, we have been using them interchangeably, but with the introduction of QUICKCODE version 2.1, it is now important to distinguish between them.

In QUICKCODE, the difference between labels and forms has nothing to do with the paper you are going to print on. You can print your output on anything you like. The difference has to do with how QUICKCODE and dBASE-II will handle your database in **.LBL** and **.OUT** programs.

Screen Printing Width: A Definition

In QUICKCODE, the difference between a label and a form is based on the **screen printing width** of the screen you build in QUICKSCREEN mode, defined as follows: the **screen printing width** is simply how many columns, starting at the left margin, you need to print your data or titles. You can calculate the screen printing width of a screen (if your left margin is at zero) by first finding the rightmost column in which anything might have to be printed, such as a data field, heading, or horizontal line. When you find the rightmost column in which anything might be printed, add 1 to it and that is your **screen printing width.**

Example:

```
column #:  0123456789
             ****
             ;ABC    )
             ****
```

In this example, the rightmost column of field ABC is column 9. Therefore, the screen printing width is 10. Note that the calculation must include columns 0 and 1, even though there is nothing printed in those columns, because the left margin is at column 0.

It is recommended that the left margin be set to zero when creating forms and labels, unless there is an important reason why it should not.

Labels vs. Forms

Once you know the screen print width of your screen, you can determine whether QUICKCODE will consider this to be a label or a form. If the screen print width is less than 32 characters, it is a label. If it is 32 characters of more, it is a form. QUICKCODE will treat these differently in generating **.LBL** programs.

Both labels and forms are printed by **.LBL** programs. However, if you have defined a label, QUICKCODE will build into your **.LBL** program the logic to print labels "four up." If you have defined a form, it will create a **.LBL** program that can print your form

"one up."

"Four up" means that labels will be printed four across on the same line. Some gummed labels can be purchased in this format to save printing time and to simplify handling. Gummed labels can also be purchased "one up," which means that the labels are not **next** to each other, but **follow** one another.

If you want to print labels four up, you do not have to decide this while you are running QUICKCODE. The generated **.LBL** program will ask you whether you want four up or one up **each time** it is run. But if you are printing forms, the generated program will always print one up, and will not ask you about this option.

Setting Up a Label or Form

A label or form is set up by going into QUICKSCREEN mode and putting on the screen the database fields you want to see printed on your label or form, as well as any titles, lines, etc. For label printing, it is suggested that the database fields begin in column 1, unless you happen to be using very wide labels.

So long as your screen printing width is 32 or more, and you do not want to use the four up feature, there is no other restriction on the contents of any form you create.

If, however, you want to print four up or your screen printing width is less than 32, you should follow these guidelines:

- Put all your database fields, titles, etc. on the screen as far left as you can place them and within columns 0-30 of the screen. You do **not** need to put them on the screen more than once. If they are to be printed four up, QUICKCODE will automatically print three more times per line.

- You **must** limit the number of fields on your label to no more than 15, because of the limited number of dBASE-II "memory variables" that can be created.

Running Label/Form Programs

All labels or forms are printed by **.LBL** programs. These programs are run the same for labels as for forms, except for the following: If you are runnning a **.LBL** program to print labels less than 32 characters wide, you will be asked the following question:

HOW MANY LABELS PER ROW (1 OR 4)

Answering 1 will print your labels one up, and 4 will print them four up. For additional instructions running **.LBL** programs, see p.118 of the main manual.

Label Size

Because labels come in different sizes, QUICKCODE allows you to specify the size of your labels when printing four up. This size is not used when printing one up or when printing forms. Please note that this size is in no way connected to your "screen print width," except that it must be larger than the screen print width. It simply represents the physical size of the labels you print on.

The size of a physical label is measured in characters and is determined by measuring the distance from the left edge of a label to the left edge of the label next to it. (If you measure this in inches, you will usually find that there are 10 characters per inch or sometimes 12 per inch).

Once you have determined your label size, you will need to set the label size in QUICKCODE. If, however, your label size is 35 characters, you will not need to set the size, because QUICKCODE is already set for 35 characters.

To set the label size in QUICKCODE, you must go from the main menu to the "S" menu. There, you must change item **(20) LABEL SIZE** to be the size of your own labels. If you want to make this your standard label size for the future, you must enter **S** to save this to your configuration file.(Remember, though, that this action will also save **all** the characteristics of your current screen to the configuration file, so be careful.)

Alternate Labels/Forms

Because you may want to print both mailing labels and forms from the same database, QUICKCODE version 2.1 contains a feature to print "alternate" labels and forms. This means that two different **.LBL** programs may be run from the same **.CMD**, allowing you a much wider range of options in your generated programs. This is described in more detail in the section on alternate labels and forms.

3. dSCAN™

One of the most useful things about relational database systems like dBASE-II is the ability to select data from your database according to your own requirements. For example, although you may have thousands of customers in your database, you may only be interested in those whose unpaid balance is over $5000. Next week, you may want to take a look at all your customers from Utah.

Without the ability to select automatically, you would need to look at **all** your customers and determine by yourself which ones are of interest. What a time-consuming job!

In QUICKCODE version 2.1, we are proud to introduce a feature which does this for your automatically - **dSCAN.**

You can think of dSCAN as a "filter" which you can use to weed out only those database records that you need to look at now. You can look at a completely different group of records next week or next year.

Further, you can use dSCAN to automatically weed out records for a number of purposes: WordStar™ form letters, mailing labels, forms, editing, printing, deleting, or general database investigations. In fact, you can use dSCAN to help you browse through your database, editing, printing, or deleting records as you go along, but only those you are interested in. You can think of dSCAN as a "supersonic file clerk" at your command.

Although there are slight differences in using dSCAN for WordStar™, labels, forms, and investigations (these differences will be described below), the basic dSCAN itself works the same in all cases. Here is how it works:

When running your generated programs with dBASE-II, any time that you might want to use dSCAN, you will be asked:

DO YOU WISH TO dSCAN?

If you wish to use dSCAN, enter **Y**. If not, enter **N**.

If you entered **Y**, the program will then display:

PLEASE ENTER SELECTION CRITERIA
DO NOT PRESS RETURN

This is where you must enter the qualifications you are interested in. It is important to type them carefully, and most important not to press **RETURN** without typing something. If you have changed your mind and do not want to use dSCAN (or you want to see all records), you must enter upper case **T** or the word **TRUE** in upper case.

Qualifications should be typed very carefully or record selection

will not work correctly. This is because the qualification you type in must be in the same form as the dBASE-II command language described in your dBASE-II user manual. Also, any database fields that you use in your qualification must be spelled exactly as they were in QUICKSCREEN mode, in fields mode, and as they appear in the .DBF file (i.e. without any special ending characters and a maximum of 9 characters per field name).

Examples:
Suppose we have a database with the following fields:

Field Name	Field Type
NAME	Character
STATE	Character
ZIPCODE	Character
AGE	Integer
DATE	Date
BALANCE	Money

Here are some qualifications you might enter in dSCAN:

Qualification	What it does
NAME = 'SMITH'	Selects only those whose name is SMITH.
STATE = 'TX' .OR. STATE = 'OH'	Selects only those from Texas or Ohio
ZIPCODE '89999' .AND. ZIPCODE '91000'	Selects only zip codes starting with digits '90'
AGE 24 .OR. AGE 35	Selects only those less than 24 or over 35
DATE = '79/03/01' .AND. DATE = '80/05/28'	Selects only those between March 1, 1979 and May 28, 1980.
BALANCE > 5000.00	Selects only those whose balance exceeds $5000.00

Of course, even more complex selections can be performed, limited only by your imagination and the size of the selection criteria area on the screen:

```
(DATE = '79/03/01' .AND. DATE = '80/05/28') .AND.
        (BALANCE > 5000.00)
```

This would select only those which fell between March 1, 1979 and May 5, 1980 and whose balance exceeded $5000.00.

This concludes the section on how to tell dSCAN your requirements. The following sections explain how to actually use dSCAN in generated programs.

dSCAN: The Generated Programs

The dSCAN feature can be used in the following programs: **.GET**, **.LBL**, and **.WS**

dSCAN - .GET

In the **.GET** program, QUICKCODE version 2.1 has an additional option available when you enter **M for MORE COMMANDS.**

This option is: **C to dSCAN**

As long as you're not using dSCAN, you can view, edit, print, or delete any record in your database. However, once dSCAN is "turned on," you will see only the records you are interested in until you turn dSCAN off.

To turn dSCAN on, enter **C** to dSCAN. You should see two asterisks (**) at the lower left of your screen. These indicate that dSCAN is turned on. As long as they remain at the lower left, dSCAN is still on. When they disappear, it means that dSCAN is turned off and you will have to enter **C** if you want to use dSCAN again.

With dSCAN on, you can use the following commands and you will be working only with the records you specified:

E to EDIT	This will allow you edit only the records you are interested in.
D to DELETE	This will allow you to delete only the records you are interested in.
P to PRINT	This will allow you to print only the records you are interested in.
N for NEXT	This will find the next record you are interested in, skipping over all records you are not interested in.
S for SEARCH	This will search for a particular record based on the first database field or the first key field if the database is keyed. But it will find it only if it satisfies your qualification.

The typical way to use dSCAN in a **.GET** program would be to start at the first record in the database, turn dSCAN on, and "browse" through the database using the **N** command to display each record you are interested in. As you find each record, you would then use the **E**, **D**, or **P** commands to edit, delete, or print each record that you found. In this way, you could quickly delete all inactive customers, edit all your automobile components, or print all invoices for March and April.

Turning dSCAN off

If dSCAN is on, you will want to turn it off when you are done using it. This can be done in several ways:

- Use the **P for PREVIOUS** command. The asterisks should immediately disappear from the lower left corner of the screen. You will then be able to see all records in your database.

- When you reach the end of your database and there are no more records that meet your qualification, dSCAN will turn off automatically. The asterisks will disappear from the lower left corner.

- The last way to turn off dSCAN is to exit from the **.GET** program back to the main menu.

dSCAN - .LBL

When you are running a **.LBL** program to print labels or forms, you will be asked:

DO YOU WISH TO dSCAN?

If you want to use dSCAN, enter **Y**. If not, enter **N**. If you entered **Y**, the program will display:

PLEASE ENTER SELECTION CRITERIA

At this time, enter the qualification you want to use for printing labels or forms, as described above (e.g. STATE = 'OH'). Then, as the program continues, it will print labels or forms only for the records you selected.

dSCAN - .WS

When you are running the WordStar™ program, you will be asked:

DO YOU WISH TO dSCAN

If you want to use dSCAN, enter **Y**. If not, enter **N**. If you entered **Y**, the program will display:

PLEASE ENTER SELECTION CRITERIA

At this time, enter your selection criteria for transferring data to WordStar™.(e.g. BALANCE 5000.00) Then, as the program continues, it will transfer to WordStar only the records you are interested in.

4.Unique Database Keys

Another new feature in QUICKCODE version 2.1 is the ability to control whether your database key is unique. This feature applies only to those databases that are "keyed" by using the database key values 0 - 9 in the file status column in fields mode (see p.83 of the main manual).

A database key can be made up of anywhere from one to ten database fields, depending upon what you specify in fields mode. Each record in your database has a "database key value" which is simply the combination of the values in all the key fields for that record.

Example:

A database has the following key fields:
ORDER:ID 0
DATE 1

If a particular record has these values:
ORDER:ID = '00012'
DATE = '82/08/23'

Then the database key value for this record is:
'00012','82/08/23'

Here is how the unique key feature would work in the above case:

Suppose your company uses new ORDER:ID values each day and you want to ensure that no two records for the same date will also have the same ORDER:ID.

All you need to do when you are running QUICKCODE is go to the "S" menu and enter **Y** for item **(21) UNIQUE KEY.** If you return to QUICKSCREEN mode and generate your programs, the programs will guarantee that no two database key values will be the same in the database.

This will be enforced in both the **.ADD** and the **.ED** programs. If you attempt to add a second record whose ORDER:ID='00012' and whose DATE='82/08/23', you will see this message:

KEY FIELD MUST BE UNIQUE

You would then have to re-enter your screen data with a different key value before it can be added to the database.

Similarly, if you attempt to edit an existing record and change its ORDER:ID field and/or its DATE field so that it will have a database key value of '00012','82/08/23', you will not be allowed to do so. The same error message will be displayed as for adding records.

5. Alternate Labels and Forms

QUICKCODE has always generated a wide variety of programs to print labels and forms. With the addition of the 132 column capability and four up mailing labels, there is now an even wider variety of programs available.

To accommodate this, QUICKCODE version 2.1 allows you to use **two LBL** programs for each database (if you want to use more, you can create your own menus using the QUICKMENU feature or you can make a minor editing change to your .CMD files.)

Also, since you may want to print individual database records using a 132 column format, while still using an 80 column data entry screen, QUICKCODE version 2.1 now allows you to use **two OUT** programs for each database.

To make best use of these new features, it is important to understand a little about how they work. They are easy to use.

.LBL Programs

Since there are now two **.LBL** programs per database, you need a way to run each of these programs. They are run from the main menu of your generated programs, by selecting one of the following menu entries:

L to Print Mailing Labels
F to Print Alternate Labels/Forms

The **L** entry is used to run your primary **.LBL** program and the **F** entry to run your alternate **.LBL** program.

Primary .LBL Programs

Any primary **.LBL** program you generate will have the same name as your main **.CMD** program (For example, if you are creating a screen called **MAILLIST** and the main program is called **MAILLIST.CMD**, then your primary **.LBL** program will be called **MAILLIST.LBL**... if you have the **.LBL** entry set to **Y** on your "X" menu).

The main limitation about your primary **.LBL** program is that the database fields, titles, headings, etc. must all be based on the data entry screen (i.e. the **.IO** program) which you create in QUICKSCREEN mode. This is fine if you don't mind having a data entry screen that is arranged like a mailing label or you can live with a mailing label that has **all** of your database fields on it.

But if you want to have a data entry screen that **doesn't** look like a label or if you want to print labels using **some** but **not all** of your database fields, or if you want to print forms that are 132 columns wide (while your data entry screen is only 80 columns wide), then you need to use an alternate **.LBL** program.

Alternate .LBL Programs

The previous section described the main reason for using an alternate **.LBL** program: wanting to print labels or forms that are very different than your main data entry screen.

Here is how to go about creating one:

When you create your main screen in QUICKCODE, **before** you do program generation, go to the main menu and then to the "S" menu. On the "S" menu, change entry **(19) ALT .LBL PGM NAME** to the name that you want for your alternate label program (a maximum of 10 characters, including the disk drive prefix). Now, go back to the QUICKCODE main menu and do your program generation (i.e. generate all programs).

The **.CMD** program which is generated will include the option to run your alternate **.LBL** program using the name you entered on the "S" menu, as long as this name is different from your main screen.

At this point, you have a main program which runs your alternate **.LBL** program, but you do not yet have the alternate program itself. The last step in this process is to generate the alternate **.LBL** program itself. This is done by creating a completely new screen in QUICKSCREEN mode with the screen name set to the alternate name you used on the "S" menu earlier.

For example, if you selected the alternate **.LBL** program name **NEWFORM**, then you could create **NEWFORM** in either of the following ways:

- Exit from QUICKCODE. Then start up QUICKCODE by entering:
  QC NEWFORM
  Now, go to QUICKSCREEN mode to create your label or form.

- While already in QUICKCODE, use the **N for NEW** command in the main menu and enter **NEWFORM** for the new name. Then go to QUICKSCREEN Mode and enter the **ERASE** command. This will completely clear your previous screen. (the ERASE command is shown on the main menu and can be changed via the "C" menu).

Of these two methods, the first is simpler, since it gives you a completely "clean slate" in creating your alternate **.LBL** program. However, if you use this method, you will have to make sure that any database fields that you use which were in your main screen have the exact same name, data type, and size on this screen. If you use the second method, you may be able to "recycle" your field definitions from the main screen, if you do not erase the entire screen, but just remove the fields and titles you don't want.

Whichever method you use, you should find yourself in QUICKSCREEN mode, with the screen name **NEWFORM** displayed at the top of your

CRT.

At this point, you can design your label or form any way you please. It can be as wide as 132 columns (you'll have to set the right margin in the "S" menu to do this). If you want four up labels, though, then you must follow the directions given in the section on four up labels (e.g. no more than 15 database fields on a label).

KEEP IN MIND: You can use **any** database fields that you set up in your main program, but you do **not** have to use them all and not necessarily in the same order.

However you design your label or form on the screen is how it will look when it is printed out.

When you have finished your label or form design, go back to the QUICKCODE main menu. At this time, you do not need to generate **all** possible kinds of programs. You only need to generate two or three at most.

To do this, you should use the new main menu **G** command, which generates inidividual programs (this is described in section 6 of this document). First generate an **SCR** file, which will save your label or form layout for future use. Then generate a **LBL** program to use for printing labels or forms. If you'd like to see a printout of your design, generate a **PRN** file to send to the system printer.

Exit from QUICKCODE and you can now run your alternate **.LBL** program by running your main program. Here is the sequence of actions that creates and then runs an alternate **.LBL** program:

```
(Start QUICKCODE)
Main Program:   MAILLIST
Generated:      MAILLIST.CMD,MAILLIST.IO,etc.
Database fields:
                NAME, AGE, ADDRESS
Alternate .LBL name:
                NEWFORM

(Start QUICKCODE over again)
Program Name:   NEWFORM
Generated:      NEWFORM.SCR, NEWFORM.LBL, NEWFORM.PRN
Database fields:
                NAME, ADDRESS
```

To run the programs:

```
DBASE MAILLIST

(Main menu appears)
F for alternate Labels/Forms.

(Labels or forms are printed, including NAME and ADDRESS,
 but not AGE for each person).
```

.OUT Programs

The **.OUT** programs in QUICKCODE are used to display or print individual records when you are running the **.GET** program.

The primary **.OUT** program is simply used to display each record on the CRT as it is found by the **N for NEXT, P for PREVIOUS,** or **S for SEARCH** commands. The alternate **.OUT** program is used to print each record when you use the **P to PRINT** command. If you do not specify an alternate **.OUT** program, then the primary **.OUT** program will be used for printing (this is how earlier versions of QUICKCODE printed all records).

Primary .OUT Programs

Any primary **.OUT** program will have the same name as your main program. It will be generated whenever you have the **.OUT** entry set to **Y** in the "X" menu.

The main limitation about a primary **.OUT** program is that it must be exactly the same as your data entry screen (i.e. **.IO** program), including all database fields, titles, etc. Normally, this is what you want, since it is only being displayed on the CRT as your data entry screen was.

If, however, you want to be able to print individual records in a different way than you did data entry, you need to use an alternate **.OUT** program.

Alternate .OUT Programs

Creating alternate **.OUT** programs is similar to creating alternate **.LBL** programs. First, you must create your main screen and database (e.g. MAILLIST).

However, before you do program generation, go to the main menu, then to the "S" menu. On the "S" menu, change entry **(18) ALT .OUT PGM NAME** to the name you want (10 characters maximum, including any disk drive name). Now, exit to the main menu and do program generation. The programs generated will have the option to print records using the alternate **.OUT** program that you specified.

At this point, all you need to do is generate the alternate **.OUT** program itself. This is done by creating a completely new screen (as described in the section on creating alternate **.LBL** programs).

For example, you could create your new screen by starting QUICKCODE over as follows:

QC INVOICE

Go to QUICKSCREEN Mode and design your new screen, making sure that all database fields which you use have the same size, data type, and name as they did on your main screen. Remember that you

do **not** have to use all of the fields and they do not have to be in the same order as on your main screen. Also, you can define expressions using **display-only** fields (e.g. **&A+B**). Note that in QUICKCODE version 2.1, display-only fields have been limited to 10 characters maximum.

When your screen design is complete, go back to the main menu. You should now generate **.SCR** and **.OUT** programs and, perhaps, a **.PRN** file. You can do this with the new main menu **G** command to generate individual programs and files.

Exit from QUICKCODE and you can now use your alternate **.OUT** program. Here is a typical sequence showing how an alternate **.OUT** program could be created and used:

```
(Start QUICKCODE)
Main Program Name:  MAILLIST
Generated:          MAILLIST.CMD, MAILLIST.IO, etc.
Database fields:    NAME, ADDRESS, AGE, AMOUNT
Alternate .OUT Name:INVOICE

(Start QUICKCODE over again)
Alternate Pgm.Name: INVOICE
Generated:      INVOICE.SCR, INVOICE.OUT
Database fields:    NAME, ADDRESS, AMOUNT
```

To print an invoice (which will print NAME, ADDRESS, and AMOUNT, but not AGE), enter:

DBASE MAILLIST

Your generated programs will begin to run and you will see the main menu. To use your alternate **.OUT** program, you must enter **G** for **GET**. Then, using **N** for **NEXT**, **P** for **PREVIOUS**, or **S** for **SEARCH**, you can call up a record you are interested in (also, you can use dSCAN to select the ones you want, for example **AMOUNT > 5000.00**)

Once you have the record you want displayed on the screen, enter **M** for **MORE COMMANDS** and then **P** to **PRINT**. You should now see your invoice printed on your printer.

Using this technique, you can go through your database and print invoices for just those customers that you are interested in.

6. Individual Program Generation

QUICKCODE has the ability to generate at least 12 different kinds of programs, as well as database files and screen display printouts.

When generating complete database applications, it is common to generate most or all of these at once, because they all fit together in an integrated way. The QUICKCODE "X" menu was designed to allow you to control which of these programs you want to generate and which you do not.

However, in many situations, it is easier to generate just one or two of these programs without having to go to the "X" menu to turn various entries on and off. One such case is the creation of an alternate **.LBL** or **.OUT** program.

To make this easier, QUICKCODE version 2.1 has a new command on the main menu, the **G** command to generate individual programs.

To use this command, simply enter **G.** QUICKCODE will display:

PROGRAM TO GENERATE

Enter the three character code for the program you want (e.g. **ADD, DBF, VAL, SCR,** etc.) and QUICKCODE will generate just that program, after which it will return to the main menu.

You can generate any individual program or file that you want. In each case, QUICKCODE will use the screen that is displayed in QUICKSCREEN Mode as the basis for the generated program or file.

7. Automatic Indexing

When you use database keys, dBASE II uses a technique called indexing to keep track of keys and to retrieve records.

In earlier versions of QUICKCODE, if you set up a database key, you had to run a special program called the **.GO** program to index your database before adding records for the first time (see p. 120 of the main manual).

In QUICKCODE version 2.1, this is no longer necessary. If you create a database with a key, the first time you run your generated programs, you will see this message:

FILE IS NOW BEING INDEXED

This means that the database key index is being automatically created.

It is important, however, that you still have QUICKCODE generate the **.GO** program, because the **.GO** program is used to automatically index your database. (The **.GO** program will be generated only if you set the **.GO** entry to **Y** on the "X" menu).

Once you have indexed your database, you should not have to index it again under normal conditions. Should you want to index it again, you can use the **I to INDEX DATABASE** option in the main menu of your generated programs.

The main reason for wanting to re-index a database is when you want to use multiple database keys, as described on p.121 of the main manual.

8. Default Drive

Sometimes you may want to set up a database and programs on different disk drives. QUICKCODE provides an option whereby you can have your main **.CMD** program on one drive, but all your other programs and your database on a different drive.

To use this option, when you are in QUICKCODE, you must go to the "S" menu and set entry **(22) DEFAULT DRIVE** to the name of the drive which you want your programs and database to be on (e.g. **A:**). If you don't want a specific default drive, then leave this entry set to ******.

Example:

You want to run your main **.CMD** program from drive A:, but you want to put your other programs and database on drive E:, which happens to be a high capacity hard disk.

Set entry (22) on the "S" menu as follows:

(22) DEFAULT DRIVE E:

Now, when you run the generated programs, they will look on drive E: for the database (and all programs except **.CMD**).

Summary of Version 2.1 Features

The new capabilities described in this document greatly expand the power of QUICKCODE and dBASE II. With these features, you can produce fairly sophisticated systems, including the ability to work with any group of records within your database based on your own criteria, printing these in any of three different formats on forms that can be as large as 96 lines by 132 columns.

The full power of these features can not be described here. You must get some experience using them before you can take full advantage of them.

One technique that can be used to expand these capabilities is to create your own menus using QUICKMENU. In that case, you will be able to use a virtually **unlimited** number of alternate **.OUT** and **.LBL** programs.

Future versions of QUICKCODE will continue to build upon these features and provide new features that will let you do even more with dBASE II.

Additional Notes on Version 2.1

1. To avoid confusion between QUICKCODE itself and the programs that it generates, remember that once you exit from QUICKCODE and you are running the programs, you are using dBASE-II. Many of the things that you set up in QUICKCODE (e.g. the cursor controls) are no longer set up, becuase dBASE-II has its own set of controls. Thus, if you want to use certain cursor controls in your generated programs, you must set them up in dBASE-II independently of QUICKCODE.

2. When using screens created with QUICKCODE versions 2.0 or 2.0A, keep in mind that earlier versions of QUICKCODE did not use alternate **.OUT** and alternate **.LBL** programs. As a result, when you call up these screens in version 2.1, you will find that these have been set to the value **NONAME**. This will affect the running of your generated programs, so you should go to the **S** menu and change these to the values that you actually want.

3. When creating mailing labels and forms, you should not begin these on line 0 or line 1, because these lines are not used for labels. You may begin your labels on lines 2-20.

4. The Televideo 950 CRT has different installation codes than the 910 or 925, which has not yet been put into the install program. If you are installing for a 950, you must use the **CUSTOM INSTALLATION**. This will be corrected shortly.

5. Another major use of the **.LBL** program, which was not emphasized in the documentation, is as a limited report generator. This is done by using **display-only** fields. By placing these fields on your screen and generating a **.LBL** program, you can use this program to display your database records in a report like format.