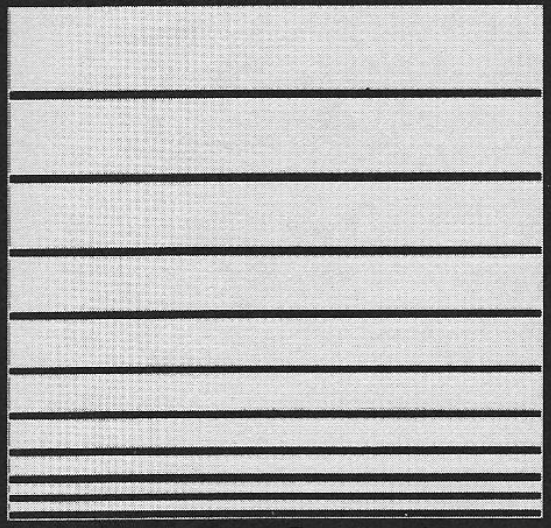
VIZA SOFTWARE



VIZASTAR
INFORMATION PROCESSOR

Tutorial Guide

SECTION 1

GETTING STARTED

Disk Errors

The Commodore disk drive produces its own error messages; VIZASTAR will show all error messages at the foot of the screen. The disk manual details the meaning of these messages and most are self explanatory. They begin with a two digit number followed by a comma and a description of the error. If you use a brand new disk it must first be formatted by the disk drive. If you place an un-formatted disk in the drive and attempt to use it, a disk error (READ ERROR) message will be displayed. The FILE TIDY FORMAT command is used to format a disk from VIZASTAR. This is explained later in this TUTORIAL and also in the REFERENCE GUIDE.

Disk Handling

When using a VIZASTAR database DO NOT CHANGE DISKS while the red disk light is on. Do not change disks and then carry on using the database ACCESS commands. VIZASTAR has no way of knowing that the disk has been replaced by another. To use a database on the new disk, issue the DATA USE DATABASE command.

When using just the worksheet, change disks only when in *READY* mode.

Backups

Always keep several copies of worksheets on different disks and use the STARBACK program on the supplied disk to backup your databases. This is absolutely VITAL, so always reserve time at the end of a session to make backups.

Always use high quality diskettes, poor quality diskettes will 'forget' your information.

Never touch the disk surface, and always place the disk back into its sleeve after use.

The Worksheet Screen

After VIZASTAR has loaded, your screen will show the following display:

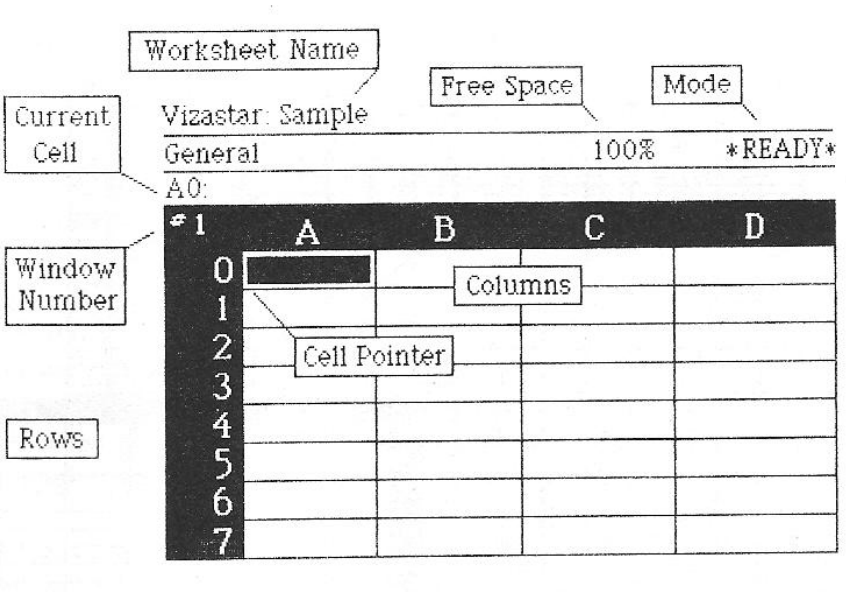


Figure 1.1-The Worksheet

What you see now is the VIZASTAR worksheet display. Notice the letter headings at the top of each column and the numbered rows, the cell pointer, window number, current cell, free space, worksheet title and mode. You will learn more about these as you progress through this tutorial.

Your screen displays only a small portion of the actual worksheet available to you. You can imagine the screen as a window onto your worksheet.

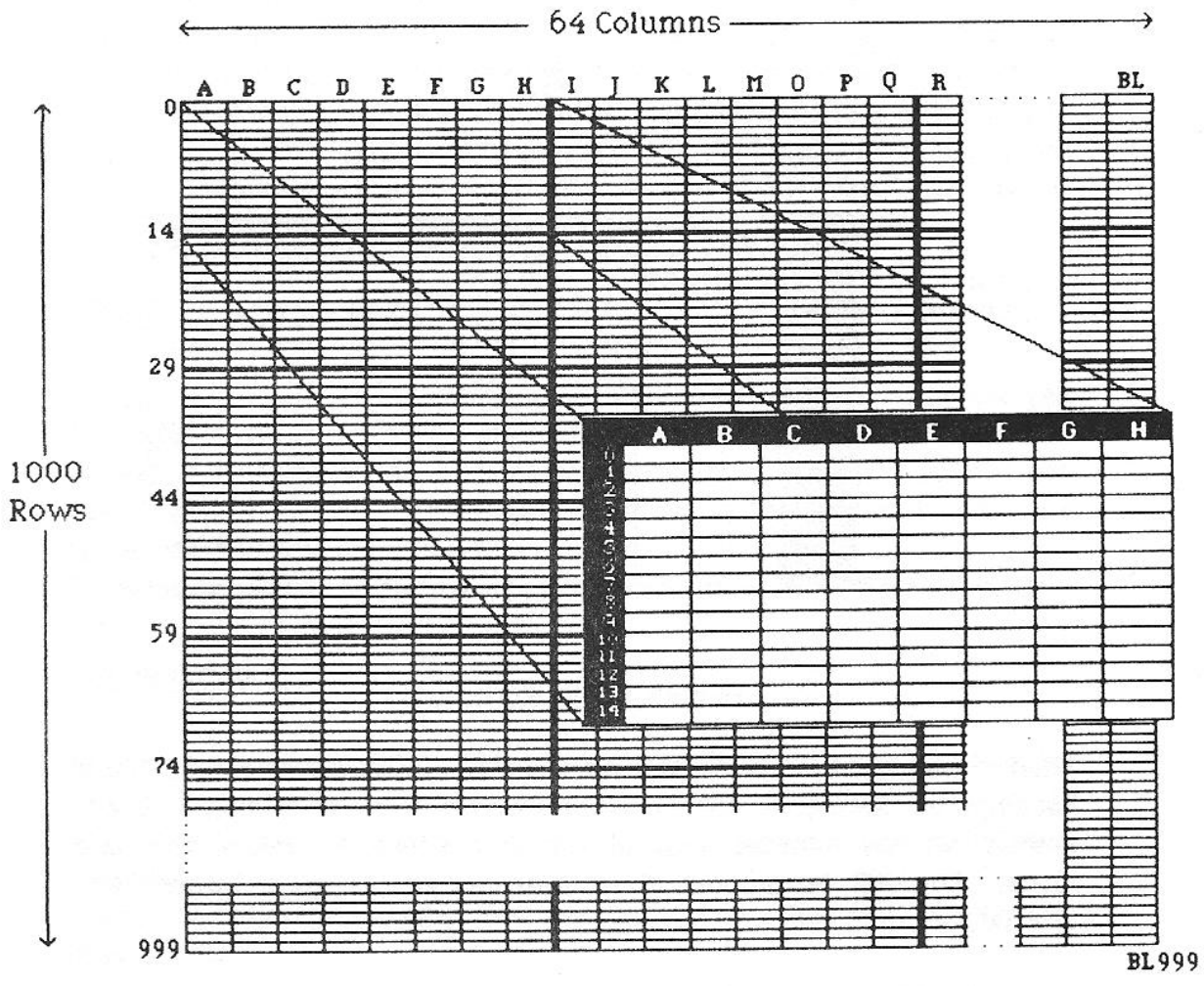


Figure 1.2-The Screen Displays A Part Of The Worksheet.

Columns have letter headings at the top of the screen. These headings range from' A' through to 'Z', then from' AA' through to 'AZ', and so on up to 'BL'. This gives you up to 64 columns across the worksheet.

Rows have number headings down the side of the screen. There are 1000 rows in your worksheet numbered from 0 to 999.

If you follow the lines from the column and row headings, at their intersection a 'box' is formed. Each of these boxes is called a 'cell'. Cells hold numbers or letters that you enter into the worksheet.

The cell that is available for immediate use, the current cell, is pointed to by the cell pointer. This is an arrow that is immediately below and to the left of the current cell.

In Figure 1.1 the cell pointer is at the top left of the worksheet display. The location of a cell is given by its column letter heading followed by the row number heading. So, the current cell in Figure 1.1 is cell A0.

Many commands need to operate on sections of the worksheet, these are called cell RANGES. Figure 1.2.1 shows the 'shapes' that a cell range can have. Notice that a range is identified by its top left and bottom right cell reference. A range can be just one cell, part of a row, column or a rectangle. It CANNOT have an irregular shape, it is always four sided.

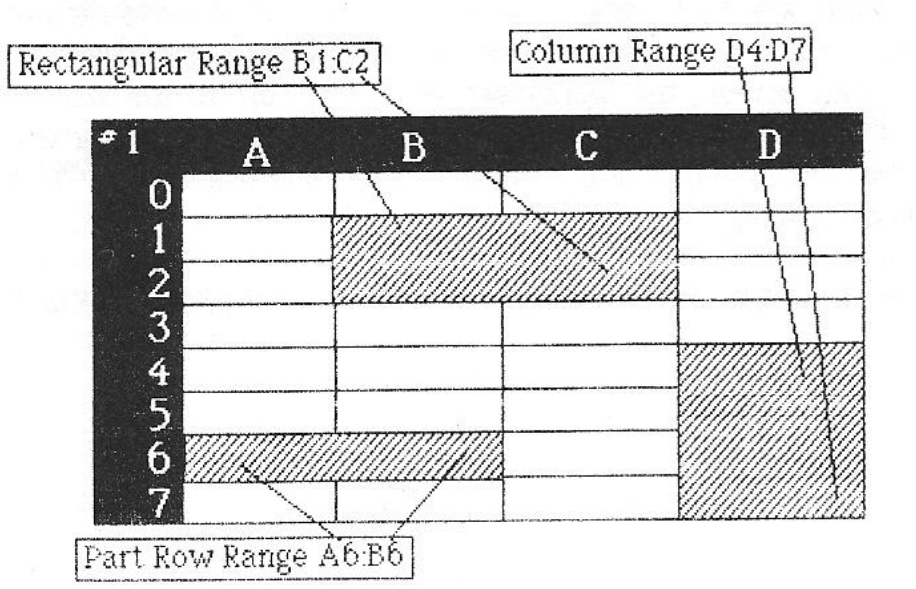


Figure 1.2.1- Worksheet Cell Ranges

Moving the Cell Pointer

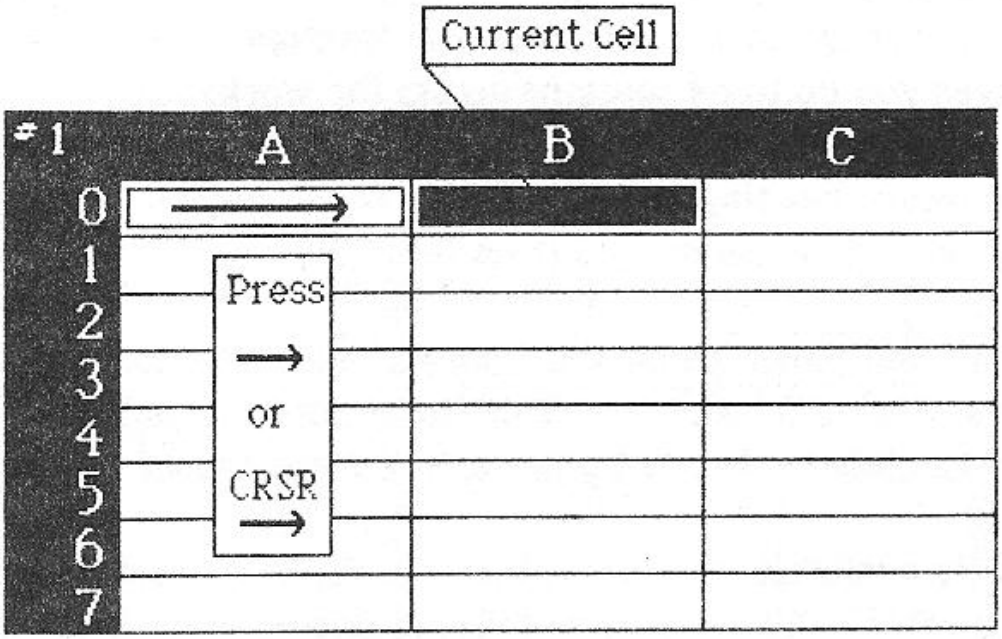


Figure 1.3 Moving the cell pointer

The cursor keys (the keys marked with an arrow on the right of the keyboard, or the duplicate set at the top of the keyboard to the left of the function keys) are used to move the cell pointer around the worksheet. Press the cursor right key once. Now look at the cell pointer. It is no longer pointing to cell A0 but has moved one column to the right, and is looking at cell B0.

Try the other CRSR keys. By holding down these keys you can move rapidly from cell to cell throughout the worksheet. As the cell pointer reaches the end of the current screen, the worksheet will 'jump' off to the side or downwards. If you continue to hold down a cursor key the cell pointer will remain still, but the columns and rows will move underneath it. This process is called 'scrolling',

To return back to the 'top' of the worksheet (cell A0) just press the HOME key twice.

The Screen Heading

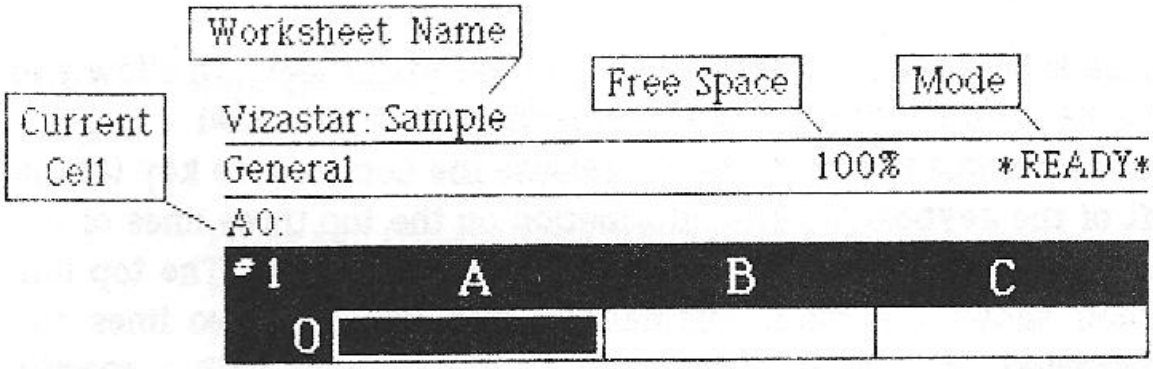


Figure 1.4-The screen headings

At the top of the screen you will see a number of headings. These hold important information about your worksheet. On the top left of the sheet you can see the word Vizastar followed by a colon. When you load a worksheet its name will be shown here.

On the second line of the screen you will see the word 'General'. This tells you the display format of the current cell and will be explained in detail later. As you look across the second line you will see a number and percent sign. This shows you how much memory you have left to use. If the heading reads 100% this means that all of the working memory is available. As you enter information this percentage will decrease according to the amount of worksheet you have used.

On the right of the second line of the screen you will see the word '*READY*'. This shows you the current mode of the worksheet. When '*READY*' is displayed the program is waiting for you to enter some information or do a calculation. As you start to use the worksheet more you will notice the mode change to reflect the operation in which you are currently engaged.

On the third line of the screen you will see a letter and number followed by a colon. This tells you the location of the current cell and what it contains. At the moment the cell is empty so the space after the 'cell reference' is blank. Try moving the cell pointer using the cursor keys. Notice as you do this the heading changes to reflect the new position of the cell pointer.

Issuing a Command

So far you have only seen the basic display of the worksheet to allow you to control VIZASTAR; there are many commands that can be used.

Now, to issue a command just press and release the Commodore key (at the bottom left of the keyboard). The information on the top three tines of the screen has been replaced by the VIZASTAR command menu. The top line of the screen shows the main commands, and the next two lines the options associated with them. Each main command deals with a specific area of VIZASTAR. For example, the 'DATA' command is used to set up and access a database.

Say, for instance you wish to change the color of the screen:

Press the Commodore key
Press the SPACE BAR until the word 'cell' is highlighted (- its colors are reversed)
Press RETURN
Press the SPACE BAR until the word Tone' is highlighted
Press RETURN
Select the required screen color combination by pressing the function keys (the separate row of keys on the right of the keyboard)

F1 - changes the text color
F3 - changes the background color

Press the STOP key when finished.

By pressing the F7 function key you can return to the normal screen colors.

When highlighting a command menu, you may press SHIFT and SPACE to highlight backwards. Notice that if you hold down the SPACE BAR the highlighting 'cycles' around the main command words.

VIZASTAR 'remembers' the command that you last used, when you call up the command menu again. Those same command words will still be highlighted. As you use VIZASTAR you will see how useful this feature becomes.

When you become more familiar with the commands of VIZASTAR you will probably find it quicker to select commands by this alternative method: Press and release the Commodore key and type the first letter of each required command word. For example, to issue the CELL TONE command again:

Press and release the Commodore key
Press C for (C)ell
Press T for (T)one

Select the required screen color combination by pressing the function keys in the normal way

Abandoning a Command

The STOP key can be used to abandon a command. Once the command has been accepted (usually by pressing RETURN) it is not possible to stop whatever action it may take.

Function Keys

Some of VIZASTAR's commands are issued by pressing a function key rather than selecting from the command menu. These tend to be the most often used commands.

Jumping Around the Worksheet

For example, if you wish to 'jump' directly to a particular location in the worksheet without using the cursor keys, press the F5 key. VIZASTAR will prompt with 'Go To:' Type in the reference of the cell that you wish to jump to (e.g. BL999 - which is right at the end of the worksheet), then press RETURN. You can return to the top of the sheet by pressing the F5 key again and typing 'A0', then RETURN, or by pressing HOME twice.

Jumping By Screen full’s

To make it easier for you to view the information in your worksheet the F3 function allows you to move the display on to the next whole screen of cells. Every time you press the F3 key the screen will 'scroll' fourteen lines downwards. Similarly, to display information on previous screens press the F4 function key (SHIFT F3) and the screen will scroll upwards by fourteen lines.

Summary

So far we have described:

What the information on the screen is and what it means.

Where the cursor keys (CRSR keys) are on the keyboard and what they do.

How to move the cell pointer using the cursor keys.

How to 'jump' to another cell quickly using the F5 key (the Goto Command).

How to issue a VIZASTAR command.

How to cancel a VIZASTAR command.

How to change the colors of the screen.

How to scroll the worksheet using the F3 and F4 keys.

SECTION 2

USING THE WORKSHEET

In the first section you learned about the basic structures of a worksheet, rows, columns, cells and ranges; the information on the top three lines of the VIZASTAR screen and how it relates to your worksheet.

You also learned how to move the cell pointer and issue a VIZASTAR command.

In this section you will see how to enter information into your worksheet and manipulate figures to produce a detailed worksheet report.

Entering Text

If you have just loaded VIZASTAR the worksheet will be empty. Make sure the cell pointer is pointing to cell A0 (move it using the cursor keys if necessary). Now type a word at the keyboard - your name will do.

Notice that as you type the first letter the mode indicator on the second line of the screen has changed to read '* EDIT *'. This shows that VIZASTAR is now expecting you to type in some text or figures. Notice that as you type each letter it appears in sequence on the third line of the screen next to the current cell reference, and the reversed block (the cursor) moves along the line as you type or use the cursor keys.

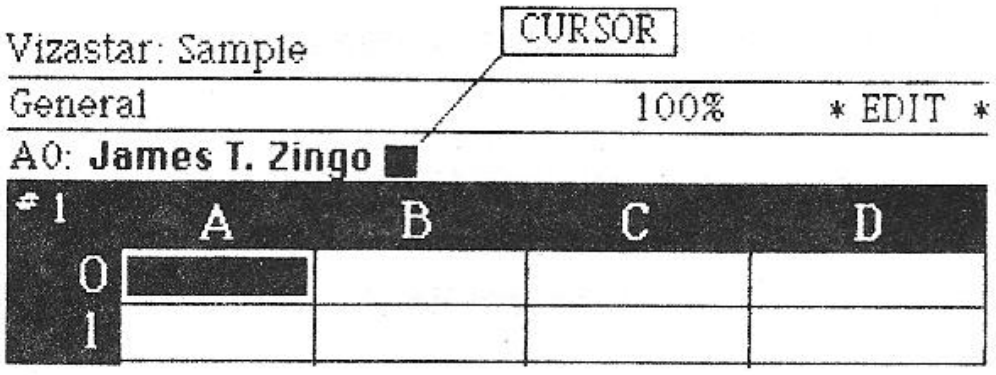


Figure 2.1 Entering text into a cell

Finish typing and press RETURN. The text has now appeared in cell A0 in your worksheet.

Now supposing you made a typing error: press the F1 key and you will go back into *EDIT* mode. Use the cursor keys to move along the text without changing it, and just type over any letters you wish to change. When you have finished press the RETURN key to change the text permanently. If you want to revert back to the original cell content, press the STOP key INSTEAD of pressing RETURN.

VIZASTAR uses the following keys to assist in typing your text or numbers:-

DEL key	Pressing this key in EDIT mode deletes the character to the left of the cursor and drags the remainder of the line back by one position.
INST key	(press SHIFT and DEL together) pressing this key in EDIT mode inserts a blank character into the text at the position of the cursor.
CLR key	(press SHIFT and HOME together) pressing this key in EDIT mode clears (erases) the rest of line.
STOP key	Pressing this key in EDIT mode ignores any changes you have made to the cell.

Entering Numbers

Now move the cell pointer down a row into cell A I. Entering a number into a cell is no different than entering text. This is because VIZASTAR checks your cell entry I and if it finds that it contains only numerals it treats it as a number. Now type 12345 and press RETURN. Notice that next to 'General' in the heading VIZASTAR has displayed the word 'VALUE'. This means that VIZASTAR has accepted this cell entry as a number. Now move the cell pointer up one row to cell A0. Notice that this cell was taken as TEXT. Later you will see how to enter formulas; in this case the word 'FORMULA' is displayed.

Throughout the remainder of this section you will have various aspects of VIZASTAR introduced to you. In order to understand the use of these you are presented with a fictitious problem.

A Practical Example

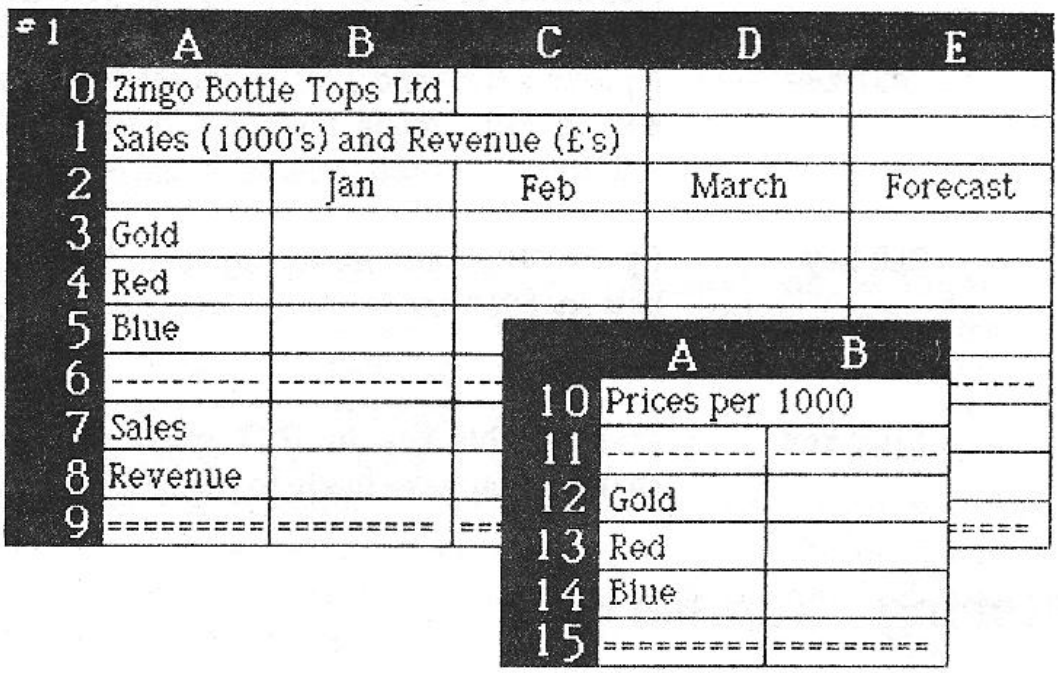


Figure 2.2 Example Sales Report

The imaginary company whose sales and revenue we are calculating is a small manufacturer called lingo Bottle Tops. They make three products: gold, red and blue bottle tops. Given the sales figures for each product in the first quarter they need to produce a summary of total sales and revenue for each month in the quarter. Also they must order raw materials well in advance and need to project their second quarter sales.

The first step in using the spreadsheet is to plan your worksheet layout and then type it in.

In this case the layout has already been given. Now you will begin to type in the information in the diagram. Get ready to follow the instructions and position the cell pointer in cell A0. If in any doubt, press HOME twice.

The SHEET ERASE Command

First, make sure the worksheet is empty. You can remove individual cells contents by moving to them with the cursor, pressing F1 to enter EDIT mode and typing CLR and RETURN. Normally to erase a range of cells, or the whole worksheet, you would use the SHEET ERASE command.

Now issue the SHEET ERASE command:

Press and release the Commodore key
Press the SPACE BAR until SHEET is highlighted
Press RETURN
Press the SPACE BAR until ERASE is highlighted
Press RETURN

You will now be prompted to enter a cell RANGE. VIZASTAR is asking you to type in the cell references of the cells at the top-left and bottom-right of the rectangle that you wish to delete. So, to clear all the cells you currently have displayed on the screen, type 'a0:h14' and RETURN. You can erase the whole sheet by typing 'all' and pressing RETURN to this prompt.

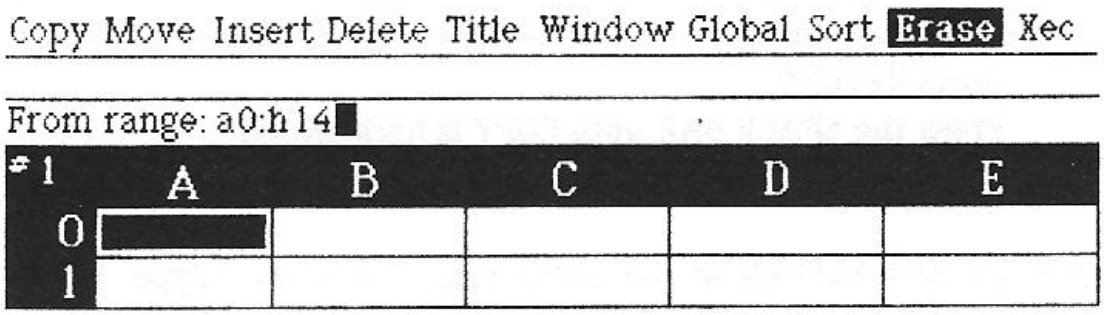


Figure 23 The SHEET ERASE command.

Now, starting from the top left cell A0, type in the information in rows 0 to 5 using the Zingo Bottle Tops example from figure 2.2.

In row 6 there are a series of hyphens in each cell. You could type these in as you did in the previous rows, but VIZASTAR has a special symbol that will repeat information throughout the contents of a cell. Move to cell A6 and type an ampersand (&) followed by a single hyphen (-) and press RETURN. Now the display of cell A6 will show as a line of hyphens from end to end of the cell. Just as any text prefixed by an '&' will be repeated, text prefixed by an exclamation mart, (!) will be centered within the cell. Thus, to get the titles of the month centered as in Figure 2.2, use: -!Jan-, -!Feb-, etc.

The SHEET COPY Command

Now you want to get the information in cell A6 into cells B6, C6, D6, and E6. You can do this by using the SHEET COPY command. This allows you to make a copy of one or a series of cells and place them in another part of the sheet. So:

Press and release the Commodore key
Press the SPACE BAR until SHEET is highlighted
Press RETURN
Press the SPACE BAR until COPY is highlighted
Press RETURN

Now type 'a6' and RETURN to the 'From range:' prompt Type b6:e6' and RETURN after the 'To:' prompt Cells B6, C6, D6 and E6 will now all contain the same text as cell A6.

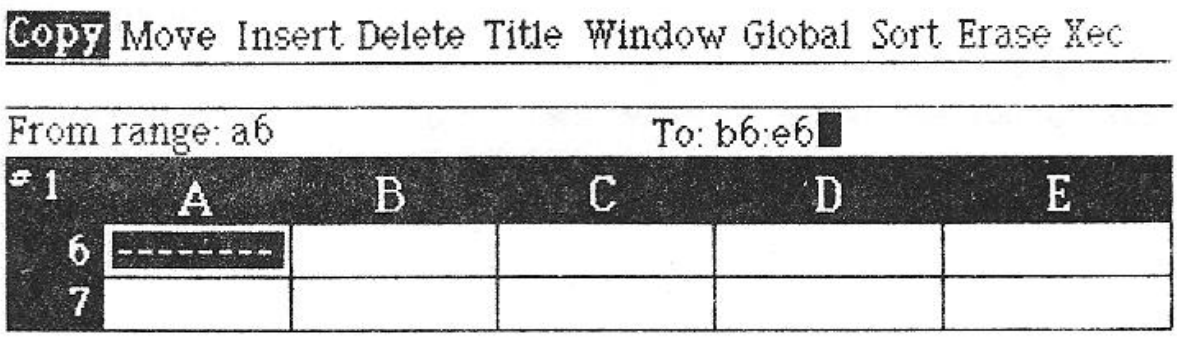


Figure 2.4 The SHEET COPY command.

Continue to type in the information in rows 7 to 9 of Figure 2.2. You can use an ampersand to cause the equals sign to repeat throughout cell A9 (type '&-' and RETURN). Use the SHEET COPY command to copy the contents of cell A9 into cells B9, C9, D9 and E9. Also, type in the information in cells A10 to B15.

At this point it would be a good idea to save your worksheet to the disk. Insert a blank data disk into the disk drive. VIZASTAR does not need the system disk to be present (except for printing GRAPH MULTIBAR and GRAPH PIE commands).

If you have not used this disk before it will need to be formatted. To format your disk, select FILE TIDY FORMAT from the VIZASTAR command menu. Type in the name that you wish to call the disk followed by a comma, then two letters and press RETURN. This process can take up to two minutes, depending on the disk drive connected. Take care not to use this command on a valuable disk; FORMAT completely erases the disk during the formatting process.

Now you are ready to save your worksheet. Select FILE SAVE from the VIZASTAR command menu, type in the name you wish to call your worksheet and press RETURN.

You can proceed to start entering figures into the worksheet cells.

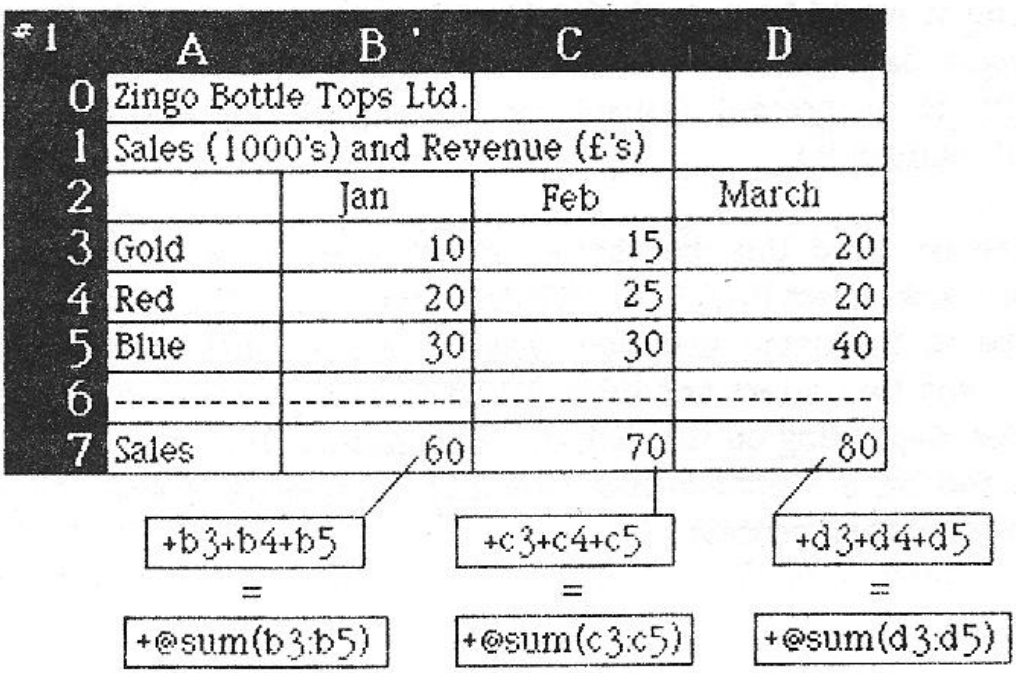


Figure 2.5 Typing numbers and formulas.

Type the numbers in rows 3, 4 and 5 of Figure 2.5 into the worksheet. Notice that numbers display to the right of a cell - do not type a SPACE before typing in a number, otherwise VIZASTAR will think it is text and display it on the left of the cell (this number could not then be included in any calculations).

Formulas and Functions

Now you want to add up the figures in rows 3, 4 and 5 of the worksheet to give totals for each column in row 7. This is done by using formulas. Formulas are extremely powerful as they perform a whole series of calculations all in one go. The result of the formula is always placed in the worksheet display. The formula is displayed at the top of the screen.

In Figure 2.5 you can see some boxes pointing to cells B7, C7 and D7. These contain formulas. Move to cell B7 and type the contents of the first 'box'. The '+' sign at the start tells VIZASTAR that you are about to type in a formula. Continue to type in the rest of the formula and press RETURN. Notice that the screen heading shows the formula you have typed, but the cell displays the result of the formula.

Although the formula you have used is correct, there are yet more powerful ways of performing calculations on other parts of the worksheet.

As well as allowing you to type in ordinary formulas, with addition (+), subtraction (-), multiplication (*), division (/) as we have just seen, VIZASTAR has many special formula functions which do more complex calculations. These are preceded by an '@' symbol to tell VIZASTAR that you are using a function. The most simple of these is the '@SUM' function which simply adds up a range of cells.

Now, go to cell B7, press the F1 key followed by CLR to erase the cell contents, and type '+@sum(b3:b5)' and RETURN. All the letters you type should be in lower case (small letters - NOT capitals). Notice the result in the cell is exactly the same as with the previous formula.

VIZASTAR allows you to copy formulas to other cells using the SHEET COPY command and will automatically adjust the cell references in your formula so they are correct for their new position. If you don't want a cell reference to change when you COPY it, put a dollar sign ($) in front of it (e.g. $a5). Now use the SHEET COPY command to copy cell B7 to cells C7 to D7,

Now before you type in the formulas in cells B8 to D8 you will need to fill out the information on the prices of each product in cells B 12 to B 14.

The CELL FORMAT Command

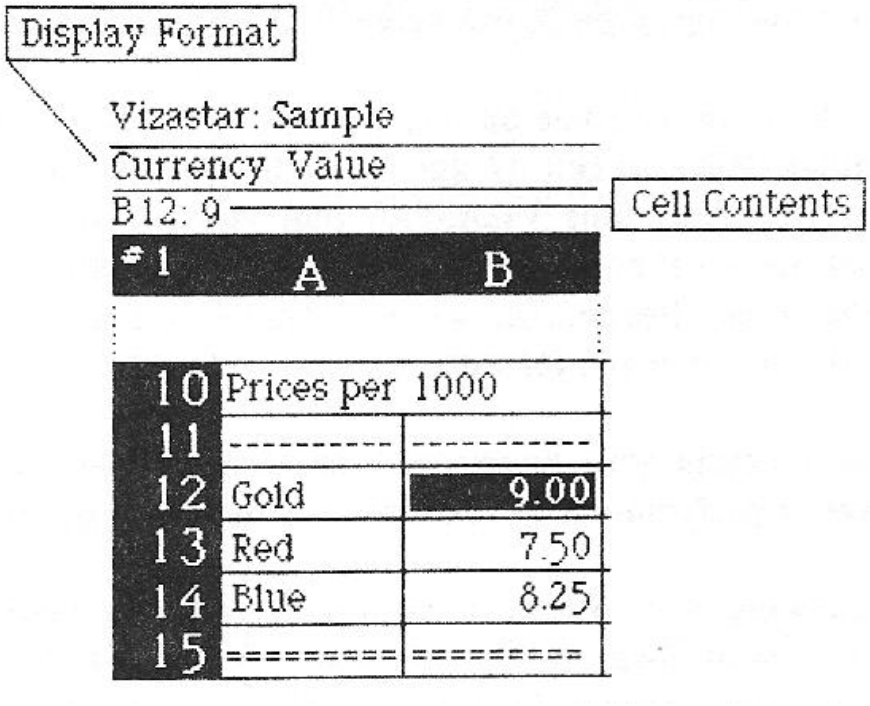


Figure 2.6 Cell formats.

Type '9' into cell B12, and then press return. Now look at cell B12 in the worksheet. Although the figure is nine pounds without any pence (or nine dollars and no cents) you want this cell to display with two figures after the decimal point to show that it contains a cash value. You can do this by using the CELL FORMAT command, which just changes the way the cells contents display.

When you first load VIZASTAR all the cells in the worksheet have the format 'General' (you can see this in the screen heading), but you can choose to change the formats to Integer (a whole number), Currency (with two figures after the decimal point), Date (in dd-mmm-yy format) or Scientific (as a decimal fraction with exponent e.g. 1.42 E8 =142000000).

To display this cell as currency just point to the cell with the cell pointer arrow and select CELL FORMAT CURRENCY from the command menu. Now the cell will display with two figures after the decimal point, although you can see from the screen heading that it actually contains '9' with no figures after the decimal point. Notice that the screen heading for this cell has changed from 'General' to 'Currency'. Use the SHEET COPY command to copy this cell's format to cells B13 and B14. Now type the other prices into cells B 13 and B 14.

Now you have all the information in the sheet to be able to calculate the revenue generated from the sale of the products. This involves multiplying the quantity of each product by its price, while totaling up to give the monthly revenue from all products.

So to get a revenue total for the month of January in cell B8 you calculate: 10 (quantity Gold) times 9.00 (price Gold) plus 20 (quantity Red) times 7.50 (price Red) plus 30 (quantity Blue) times 8.25 (price Blue).
.

To do this calculation in the worksheet you take exactly the same steps, except that when you type the information into a formula you use cell references instead of numbers. This means that if one of the figures changes you can ask VIZASTAR to recalculate the worksheet, and the formulas will automatically take into account any changes.

So, first set the format of the cell to currency, then, into cell B8 type:-

+b3*b12+b4*b13+b5*bI4 and press RETURN.

You should now see 487.50 displayed in cell B8 of the worksheet.

What If ?

Now suppose you want to see what effect an increased January sales figure would have. Change cell B3 to 12 and press RETURN. Now look at the total revenue in cell B8, it's still the same!! Now press the F7 function key, NOW look at cell B8. You've performed your first WHAT IF ? And you saw the effect by pressing the RECALCULATE key (F7).

There is also a command that will set VIZASTAR to AUTOMATICALLY recalculate the worksheet whenever a change is made. The command is CELL CALC AUTO. You may wish to issue this command now.

Before continuing, be sure to set cell B3 back to 10.

Absolute Cell References

Although the revenue formula in cell B8 is correct it would have been better if you had typed the formula as: +b3*$b12+b4*$b13+b5*$b14. This is because it allows us to easily COPY the formula into cells C8 and D8. The dollar sign prevents the cell references of the items in the price table from changing as you copy them, making them what are called absolute cell references.

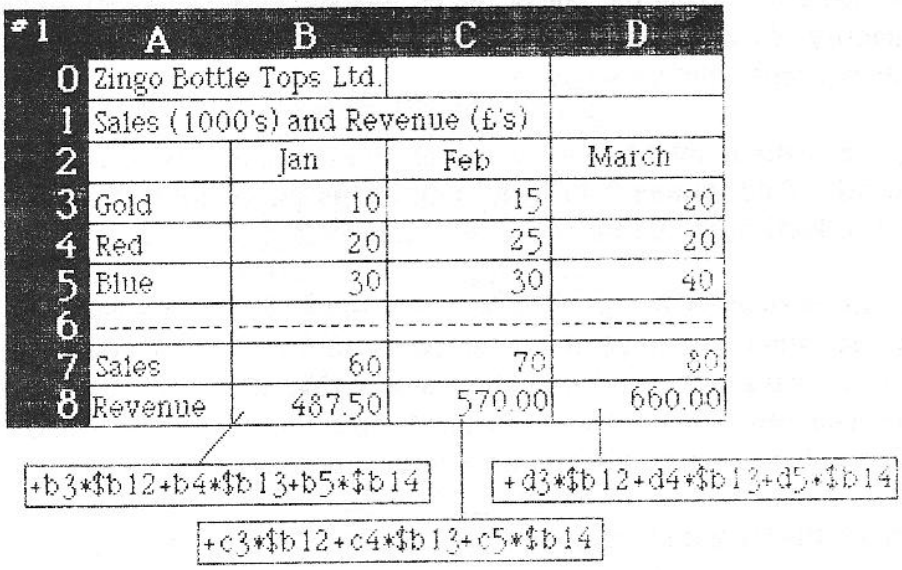


Figure 2.7 Absolute Cell References

Go to cell B8, press the F1 key to enter EDIT mode and use the INST key to put the dollar signs shown above into the formula. Now use the SHEET COPY command to copy the contents of cell B8 into cells C8 and D8.

Now your worksheet should look exactly like the worksheet in Figure 2.7.

So far you have just used simple addition and multiplication in your formulas. Suppose you wished to include a projection of sales for April. The method you could use is to calculate the average increase each month (difference between the sales each month divided by the number of months) and add this figure to the last month's sales.

PROJECTED SALES=AVERAGE RISE IN SALES + CURRENT SALES

So, the formula to project the April sales of Gold Tops would be:

+((c3-b3) + (d3-c3)) / 2+ d3

However, to make formulas easier to write, VIZASTAR has a ' built-in' averaging function. This is @AVG and it will accept a list of numbers, cell references, cell ranges and calculations. This function will arrive at the average value and include it in the rest of the formula. So you could write the above formula, more simply, by saying:

+@avg(c3-b3,d3-c3) + d3

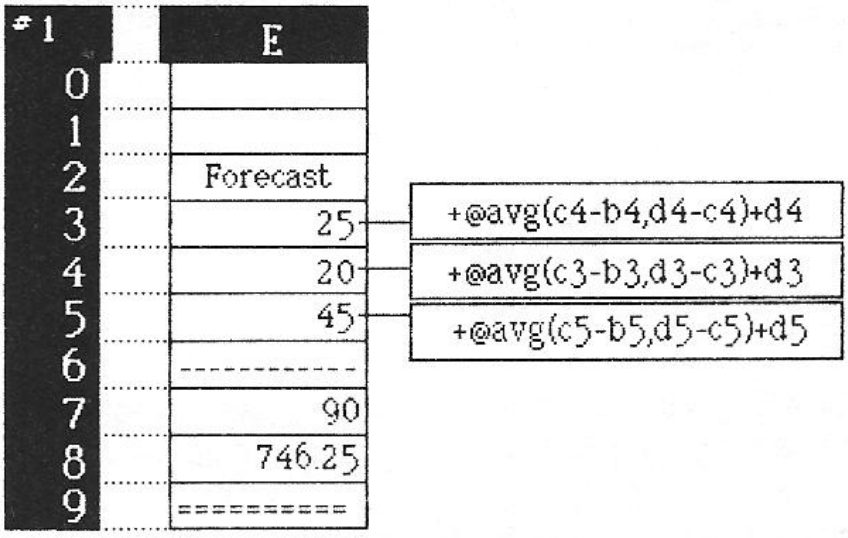


Figure 2.8 Forecast Formulas

To continue with the projection for April:

Move to cell E3 and type '+@avg(c3-b3,d3-c3)+d3' and press RETURN. Now use the SHEET COPY command to copy the contents of cell E3 into cells E4 and E5. Again use the SHEET COPY command to copy the formula in cells D7 to D8 into cells E7 to E8. Notice that the formula is adjusted by the COPY command to be 'right' in the new cells.

The screen should now look like this:

*1	A	B	C	D	E
0	Zingo Bottle Tops Ltd.				
1	Sales (1000's) and Revenue (£'s)				
2		Jan	Feb	March	Forecast
3	Gold	10	15	20	25
4	Red	20	25	20	20
5	Blue	30	30	40	45
6	----------	----------	----------	----------	----------
7	Sales	60	70	80	90
8	Revenue	487.50	570.00	660.00	746.25
9	==========	==========	==========	==========	==========

Figure 2.9 Finished example.

Drawing a Bar Graph

You can see- the upward trend in the figures, but it could be far more illuminating if you drew a graph to show the rate- of increase in growth.

When drawing a graph it is best to open a new window onto the screen, as this will allow you to see- both the figures and the graph at the same time. To do this we use the SHEET WINDOW OPEN-WINDOW command. First place the cell pointer at the position where you want the top-left corner of the new window to be; in this case we'll use cell A3. Then select SHEET WINDOW OPEN - WINDOW from the command menu.

The new window has now opened and the cell pointer is within it. Use the CRSR keys to scroll the worksheet and notice that while the contents of this window alter, the original window remains undisturbed. You can only move the cell pointer out of this window by using the GOTO command (the F5 key). Just press F5, type the number of the original window (in the top-left corner of the window) and press RETURN. Now jump back to window 2 ready to draw a graph.

Make sure the display of window 2 is looking at an area of the worksheet with nothing typed into it. Select GRAPH BAR from the VIZASTAR command menu. Type ‘b3:e5' to the 'From range:' prompt (the figures you want drawn), and '5' to the 'Scale:' prompt (how much you want each row of the worksheet to represent). Your graph should look similar to the one below. VIZASTAR not only draws the graph but also superimposes any cell contents on top. So to add descriptions, just enter them into the cells 'underneath '. Use a single quote at the start of a cell entry that needs to have leading spaces. For example A21: ‘ ZINGO'S FIRST QUARTER SALHS. To turn the graph off, issue the GRAPH OFF command.

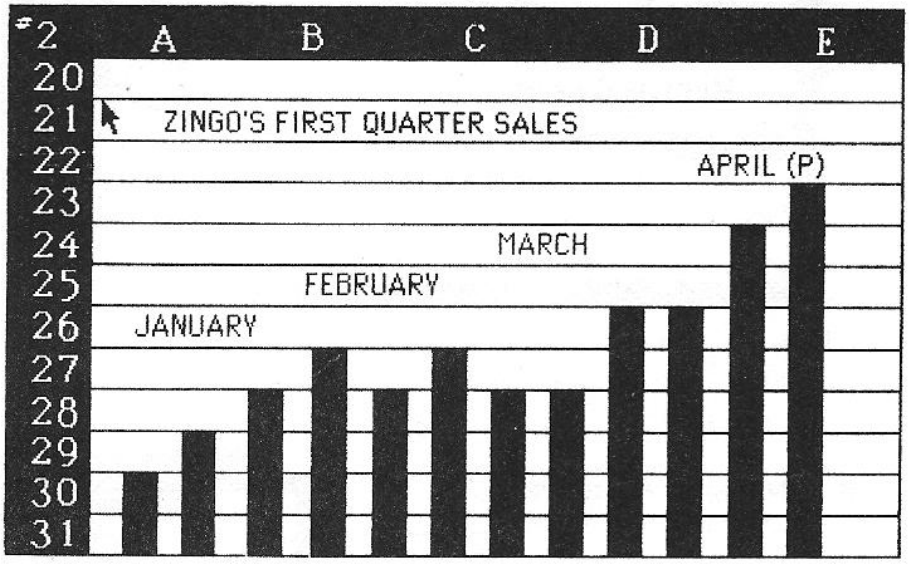


Figure 2.10 Drawing a bar graph.

Summary

You have learned in this section how to:

Enter text and numbers into the worksheet.
Change the contents of a cell in the worksheet.
Use the SHEET ERASE command.
Use 121e SHEET COPY command.
Enter formulas in the worksheet.
Use the spreadsheet '@' functions.
Use the CELL FORMAT command.
Use absolute cell references.
Open a worksheet window.
Draw a bar graph.

SECTION 3

USING THE DATABASE

The Components
Setting Up A Database
Laying Out A Record
Defining Fields And Formats
Entering Information
Accessing Information
Using Numeric Keyfields
Setting Criteria
Multiple Criteria

So far you have only learned about the spreadsheet part of VIZASTAR. In this section you will learn how to use the database: a powerful disk filing system that is used in conjunction with the spreadsheet.

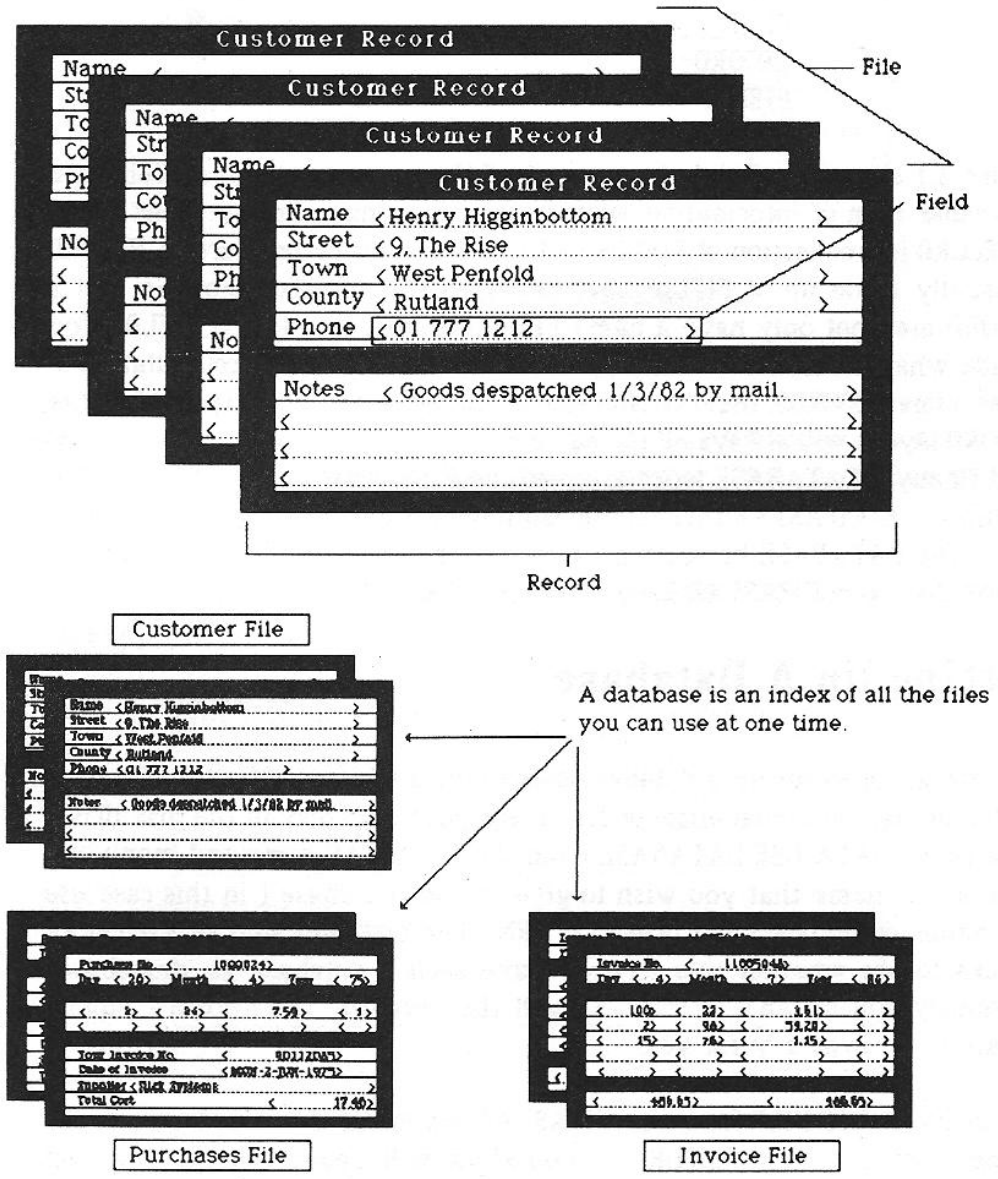


Figure 3.1 The Database Components

First of all we must explain some terminology, this is not 'jargon', nor is it peculiar to VIZASTAR. You must fully grasp the following terms before proceeding. The magic words are:-

DATABASE
FILE
RECORD
FIELD

Figure 3.1 shows the link between each of these components. A FIELD is a particular item of information, such as someone's name or a product price. A RECORD is a collection of FIELDS just like a regular record card. A RECORD is usually made up of FIELDS that have something in common. So that a RECORD may not only have a name FIELD but also an address FIELD. You decide what fields are to make up a record. A FILE is an accumulation of those same RECORDS, the contents of each RECORD may be different but the RECORD layout will always be the same.

And finally a DATABASE looks after all the FILES that are set up and used within it. A VIZASTAR DATABASE can have up to 15 files grouped in this way. The DATABASE knows where each of the possible 15 files are stored on the disk, and VIZASTAR keeps them in order.

Setting Up A Database

You are going to set up a database containing a file to hold a list of names and addresses in alphabetical order. Place your data disk in the disk drive. Now select DATA USE DATABASE from the VIZASTAR command menu and type in the name that you wish to give to your database (in this case use the name 'demobase') and press RETURN. The disk will spin as VIZASTAR checks to see whether you already have such a database as 'demobase'. Obviously you haven't, VIZASTAR will then prompt 'Not Known - Shall I Create It ?'. Type a 'y' for yes.

Select DATA USE FILE from the VIZASTAR command menu and type in the name 'customer' and RETURN. VIZASTAR will again prompt you 'Not Known - Shall I Create It ?'. Type a 'y'. You are now in *‘SETUP* mode, which is where you design or amend the 'layout' of your database RECORD. (*SETUP* mode can also be reached by issuing the DATA SETUP command). This is where you specify what FIELDS are to appear in the RECORD and the way you want the information to appear on the screen.

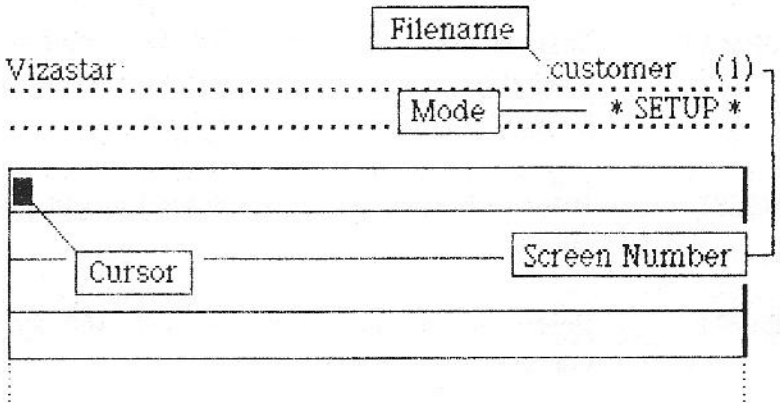


Figure 3.2 The Data Setup screen.

Notice the information displayed in the top-right comer of the screen. You have a mode indicator to show that you are in *SETUP* mode, the name of the file you just typed; the current screen number. You can define up to nine screens of information for each record.

Most of the screen will be blank. Press the Commodore key and a new menu appears.

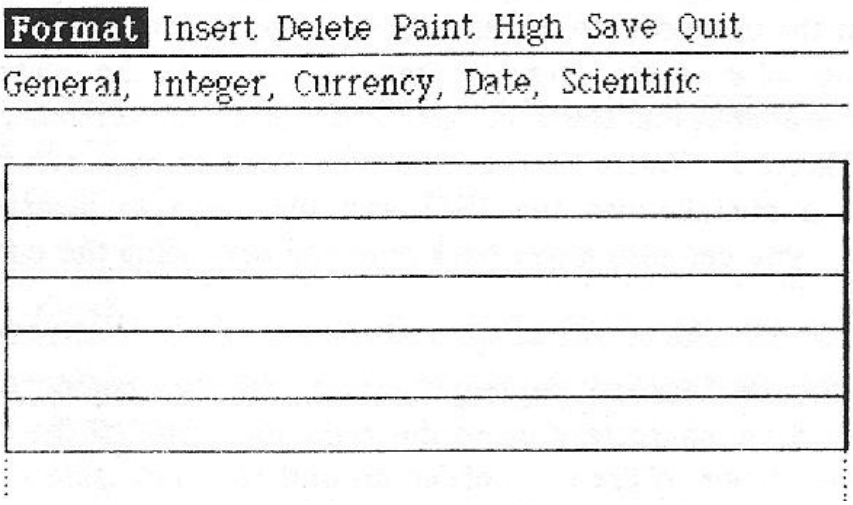


Figure 3.3 The Data Setup Menu.

These menu options are:

FORMAT	This is like the CELL FORMAT command in the worksheet, and allows you to define the display format of your fields in the database.
INSERT	Insert a blank row on the screen at the position of the cursor.
DELETE	Delete a row from the screen at the position of the cursor.
PAINT	Draw lines and borders with a character of your choice on the screen.
HIGH	Draw reversed characters on the screen.
SAVE	Save your file layout to the disk.
QUIT	Return back to the worksheet.

Make sure the cursor is at the top-left of the screen. Select HIGH (for highlight) from the command menu. Now press the cursor right key. Notice that the character to the left of the cursor has remained reversed (it is the same color as the cursor). Continue to press the cursor right key until you are about a third of the way across the screen. Now type 'Customer Record'. Notice that, as you type, each character is reversed. If you make a mistake use the INST and DEL keys to insert and delete characters - you can also move back over the text using the cursor left and right keys.

When you have finished typing the text, use the cursor right key to continue to draw characters up to the right-hand end of the screen. Now press cursor down to draw a border around the right side of the screen, and continue across the bottom row and up the left side of the screen. Now you should have a border around the whole of the part of the screen which you can use.

Press STOP to turn off the Highlight command.

Laying Out A Record

Move the cursor onto the second line of the screen and one character in form the border. Type a space and 'Name' followed by two more spaces. Now we can define our first field, or 'information slot'. Type a ‘less than' symbol '<’, 30 spaces and a 'greater than’. symbol ‘>’. Move the cursor back between the ‘<’ and ‘>’ markers and you will see the characters 'A:' displayed on the third line of the screen. This is the **field letter code** (which we will explain later) and it shows that VIZASTAR has identified your new field.

You can use the PAINT command to draw field start and end symbols (the < and > characters) on the screen: just select PAINT from the command menu, type a '<’ symbol and press RETURN. Press cursor down and VIZASTAR will draw a series of field start symbols. Press STOP to turn off the PAINT command.

Now use the PAINT and HIGH commands to draw the screen in Figure 3.4. If you make any mistakes in Highlighting you can erase them by pressing the SPACE BAR as you move over them. Press CLR (SHIFTed HOME) to erase the whole screen and start again from scratch.

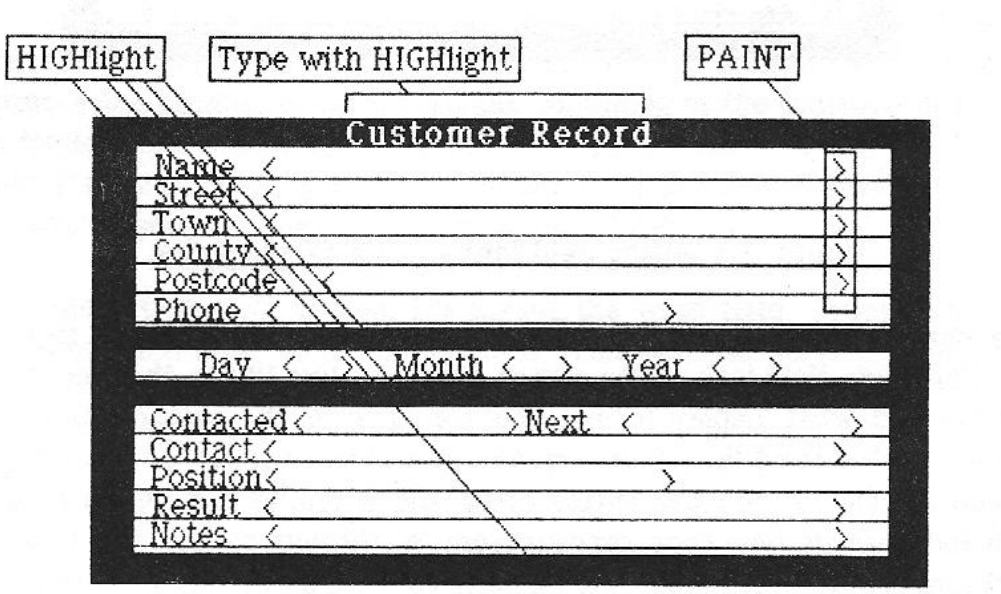


Figure 3.4 Drawing your file layout.

Select SAVE from the command menu to save your layout to the disk. VIZASTAR will ask if you want to 'Allow duplicate Keys ?'. This means 'do you want be able to type in more than one record with the same information in the key field' ? (more than one customer with the same name). Type a 'y'.

Defining Fields and Formals

Now you can use the FORMAT command to set the way you want your information to be displayed in the database file.

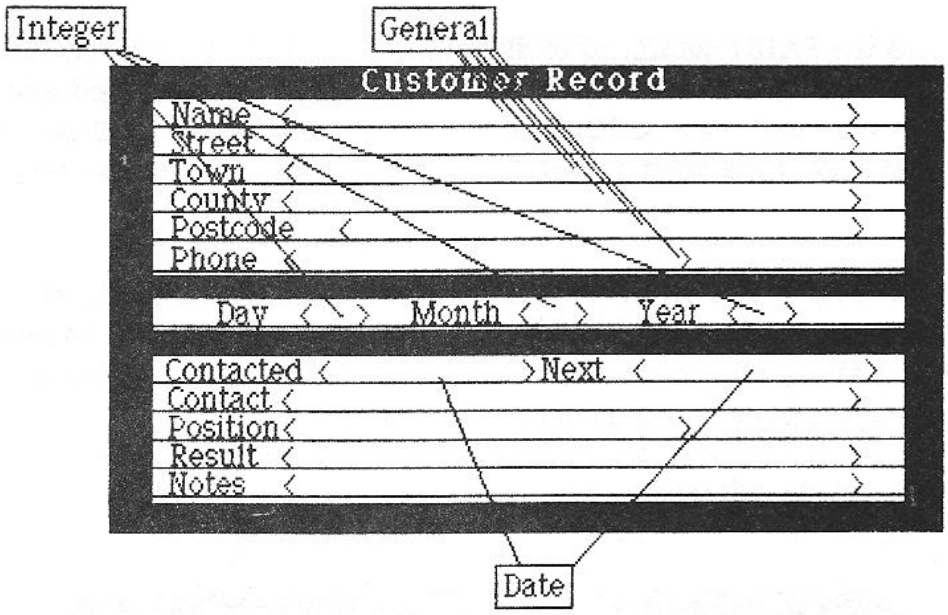


Figure 3.5 Setting field formats in a database file.

Now move the cursor until it is positioned between the '<' and '>' signs in the first field. Now look at the screen heading. Just like in the worksheet you are told what display format you are using on the second line of the screen. On the third line of the screen you will see a letter 'A' followed by a colon (:). This is the **field letter code**, and is similar to a cell reference. Each field has its own code ranging from 'A' through to 'BL', just like the worksheet column headings. This means you can define up to 64 fields in your database. You can specify your own letter codes by typing it in the first space of the field (immediately after the '<' sign). If you don't do this, however, VIZASTAR will just allocate it automatically. If you decide to use more than one screen in your layout, YOU MUST type your own letter codes.

Field 'A' is always the key field; the field which holds the name your record is known by. This will normally be the name of a person or company (as in the case of a customer file) or a number (as with an invoice or purchases file). You will usually want this to be the first field in your record, but it can be in any part of the layout, just type a letter 'A' at the first position of the field.

Move the cursor to each of the fields in turn and set the display format, using the FORMAT command. Most of the fields should be set to 'General' format (which is the default, or assumed setting), because you will be typing text into them, so you won't need to change them. Set the formats as shown in figure 3.5 and SAVE your layout to the disk.

Just like in the worksheet cells, you can define formulas in database fields. You are now going to use one of VIZASTAR's formula functions that help in processing dates.

VIZASTAR stores its dates internally as the number of days since January 1st 1900. This enables you to easily calculate with dates. So, if you want to type a date into the database you have to convert the day, month and year into a figure which represents the number of days.

Move the cursor into field ‘J’ of your file, the 'Contacted' field. Now press F1 to define a formula. Type '+@date(g,h,i)' and RETURN. This adds up the number of days in field 'G', months in field ‘H' and years in field 'I' to give a count of the number of days since the beginning of the century in field ‘J’. So for example if you had 10 in field 'G', 12 in field ‘H' and 84 in field ‘I', field ‘J’ would contain 31024. But, because you have set the display format to ‘Date' it would display on the screen as '10-DEC-84'.

Now, move to field 'K' of your file layout; the 'Next' field. Press F1 to enter a formula, and type '+j+ 30' and RETURN. This will add 30 to the number of days in field ‘J’ to give you the date when you next want to get in touch with a customer.

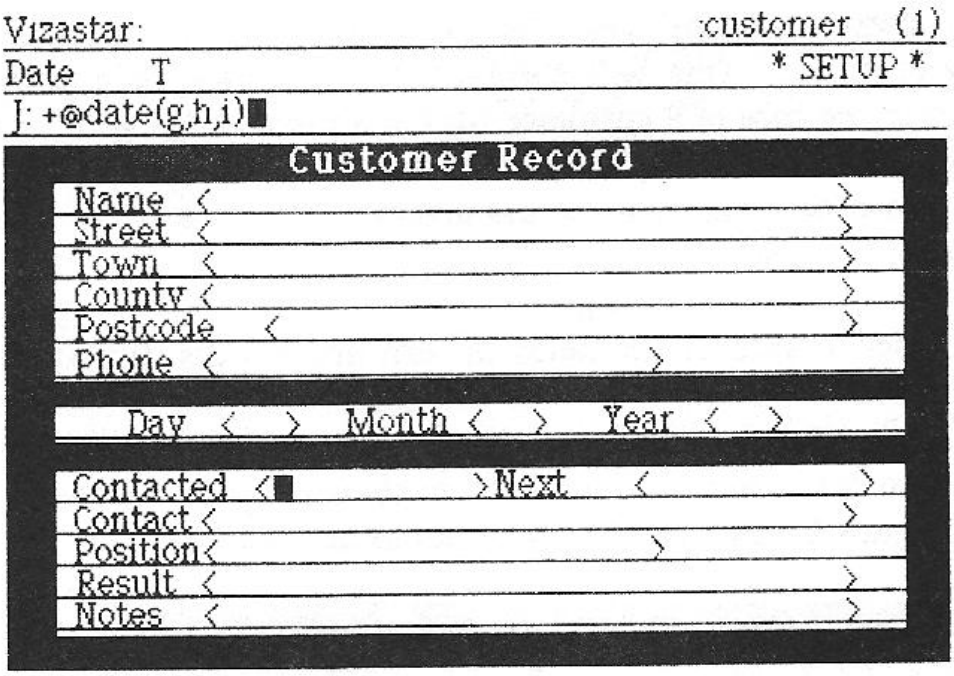


Figure 3.6 Typing a formula into a database field.

Select SAVE from the command menu. Now you are ready to start entering information into your file. Select QUIT from the command menu and you will RETURN to the worksheet. When a file is first created, the disk will spin as an entry is placed in the VIZASTAR database.

Entering Information Into A File

To enter information into your currently USE'd database file, the DATA ACCESS command must first be issued. Select DATA ACCESS from the VIZASTAR command menu. You will now see the record layout that you have just designed with a command menu permanently displayed above it.

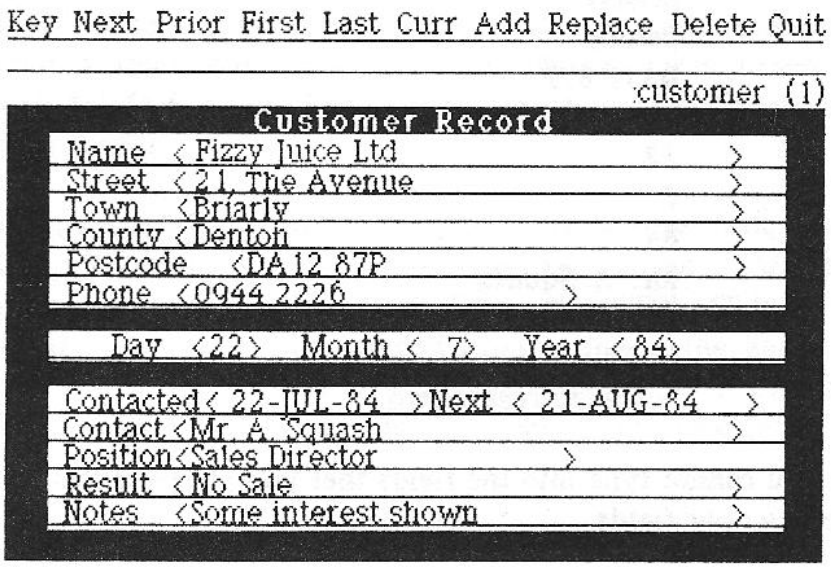


Figure 3.7 The Data Access Command.

The options in the menu are:

KEY	Find a record by its name
NEXT	Find the next record in the file
PRIOR	Find the previous record in the file
FIRST	Find the first record in the file
LAST	Find the last record in the file
CURR	Select the current record
ADD	Add a new record to the file
REPLACE	Change the information in the current record
DELETE	Remove a record from the file
QUIT	Return to the worksheet

At the moment there are no records in your file, so the first thing you will do is to add a record. Press the SPACE BAR until ADD is highlighted and press RETURN. Now, type the following, and press Rh1'URN at the end of each tine:

Fizzy juice Ltd.
21, The Avenue
Briarly
Denton
DAI287P
09442226
22
7
84
Mr. A. Squash
Sales Director
No Sale
Some interest shown

Notice that you cannot type into the fields that you put formulas in, these become 'display only' fields.

When you have finished typing in this information, press F1 to store the record on the disk.

Type in a few more records making up the information as you go along or using some of your own customers or colleagues. When you issue the ADD command, the display will still show the information in the last record you looked at. Press F2 (SHIFTed F1) to empty your record layout to type in fresh information. Press the CLR key to empty a single field. Or just type over each entry.

Accessing Information

You can access any of the records added by using the KEY command. This is one of the most powerful and useful features of the VIZASTAR database. It will find the record you request in a couple of seconds in even the largest file. Select KEY from the command menu, type 'Fizzy' and press F1 (you don't have to type the whole key; just enough to discriminate between the requested record and any other records with similar key fields). If you don't type in the whole key, VIZASTAR will display the message "Record Not Found" at the foot of the screen (although the required record will still be accessed). This is to tell you that a record with that exact key is not present in the file

You can now change the information in our record by using the REPLACE command. This allows you to type over any of the information in an existing record except the key field. First, select REPLACE from the menu. Use the cursor down key to move down to the start of the 'Result' field and press DEL three times. This field now reads 'Sale'. Change any other information you feel like and press F1 to store your changed record back onto the disk

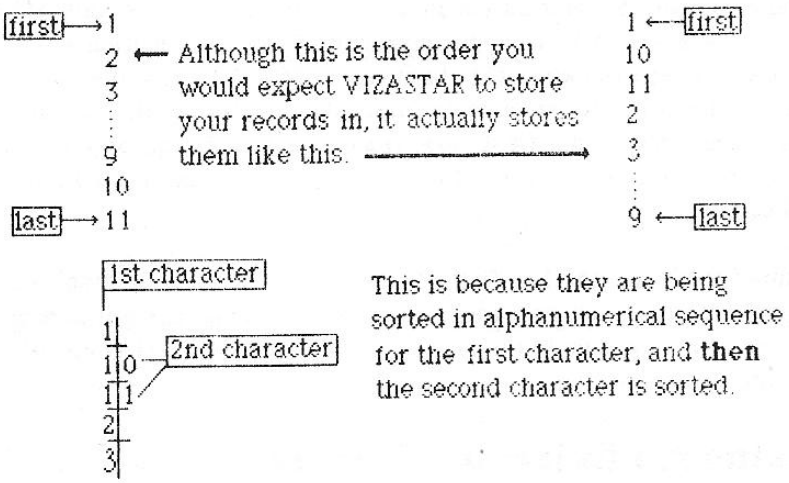
If you wanted to change the key field of your record, select ADD from the menu, type over the existing name and press F1. This will put a new record on the disk; you should then go back and use the DELETE command to remove the old record.

Accessing an Existing Database

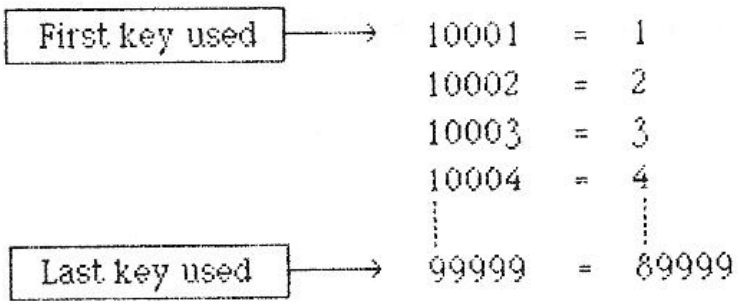
After loading VIZASTAR; to load a database that you have already created, issue the DATA USE DATABASE command and type in the database name; issue the DATA USE FILE command and type in the filename; select DATA ACCESS to get to the information in your files; select DATA SETUP to change the layout of your database.

Using Numeric Keyfields

Go to the first record on the file (with the DATA ACCESS FIRST command) and progress through the file using the NEXT command. Use the PRIOR command to step back a record. You will see that VIZASTAR has stored all of your records in alphabetical order of their key field contents. The same would apply if you had used numbers for your key field; they would be stored in an ascending sequence. However, because a key field is always thought of as text it is necessary to pad out numeric keyfields" This padding must ensure that all keys in the file have the same number of digits. So instead of '1' type '10001', instead of '2' type '10002'. This is why:-



So, where you wish to have a numeric keyfield, use a system like this:



Setting Criteria

There are times when you may wish to select a record, or several records, based on certain conditions. If you want to DATA ACCESS only the people who live in a particular town, or all the people who haven't paid their subscription, you must first enter the conditions into a worksheet range. The range is then identified using the DATA USE CRITERIA command. From then on, the DATA ACCESS commands such as FIRST, NEXT, KEY will only access records that meet this criterion. Think of this command as a further 'filter' between you and your database information. This subject is covered in great detail in the USER REFERENCE GUIDE, so we will move straight onto an example of its use.

Remember that when you were setting up your database file each field had a letter code? Just type your criteria into one or more EMPTY rows of the worksheet, with the match data for field ‘A' in column 'A', field 'B' in column 'B', and so on. In this example, the criterion is entered into row 2. If you still have the ‘Zingo' worksheet in memory, issue a SHEET ERASE and reply with 'all’.

For instance, if you wanted to find all the companies in the customers file who lived in the town 'Briarly'. The Town field was lettered as 'C' so you must type 'Briarly' into cell C2 of the worksheet. Select DATA USE CRITERIA from the VIZASTAR command menu and type 'a2:c2' and RETURN to the 'From range:' prompt.

Now select DATA ACCESS FIRST from the command menu. VIZASTAR will find the first record in the file with 'Briarly' in field 'C'. Select NEXT to find the next record that matches this criteria, or PRIOR to find the previous one.

Multiple Criteria

Earlier you were told that criteria can be entered into more than one row. This allows access based on different criteria for the same or inter-dependent fields. VIZASTAR will access records that meet ALL the criteria in ANY ONE of the rows in the criteria range. It sounds complicated, but it isn't. For instance, row 3 in Figure 3.8 would find all the records with 'Smith' in their keyfields AND more than 500 in field 'D', Row 4 would find all records with 'Ltd' in their keyfields (all the companies with limited liability on the file). If you typed a range of 'a3:d4' you would be able to DATA ACCESS records with 'Smith' OR 'Ltd' in their keyfield, but only a 'Smith' with more than 500 in field D.

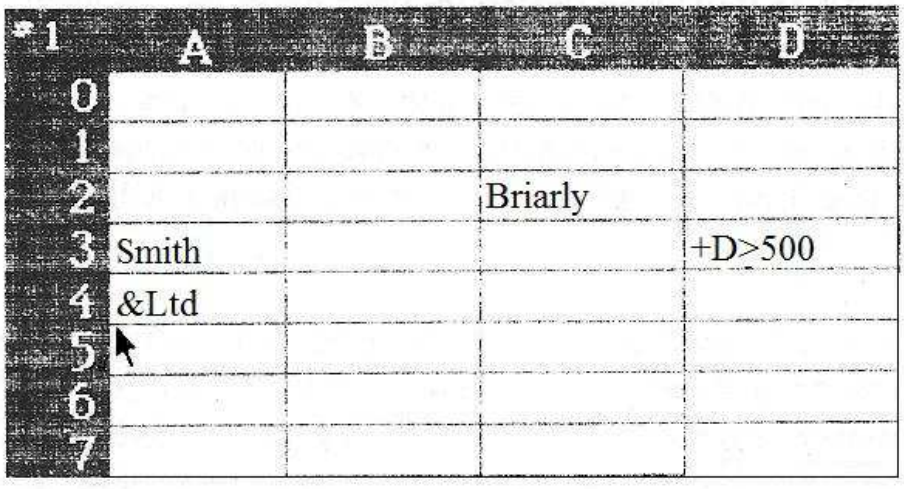


Figure 3.8 Using Database Criteria

Summary

You have learned in this section how to:

Create a database
Create a file
Define the layout of a file
Enter Information into a File
Access Information
Selectively Access Information

SECTION 4
PRINTING

Printing From The Worksheet

Printing From The Database

Now you should have a fairly good knowledge of how to use both the database and the spreadsheet. This next section explains how to print out both the worksheet and from the database.

Printing from the Worksheet

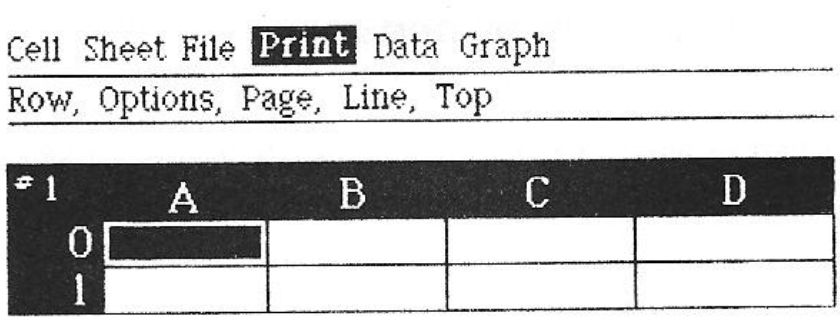


Figure 4.1 The Print Command.

To print from your worksheet you use the PRINT command. The options are:

ROW	Print from the cell pointer to the end of the current row up to the RIGHT MARGIN.
OPTIONS	Sets the printer type and format of your page and print.
PAGE	Advances the paper to the top of the next page.
LINE	Advances the paper by one line.
TOP	This tells VIZASTAR that you have positioned the paper to be at the top of a page. You must issue this command every time you manually re-position the paper or a 'gap' may be left in the middle of the printed page.

Before you print anything you must set the printer type in the print options screen. The default (automatic) setting is for a Commodore printer.

Remember that VIZASTAR keeps track of where you are on the printed page, so be sure to set up the paper and issue the PRINT TOP command whenever you want to start a fresh report.

Select PRINT OPTIONS from the VIZASTAR command menu.

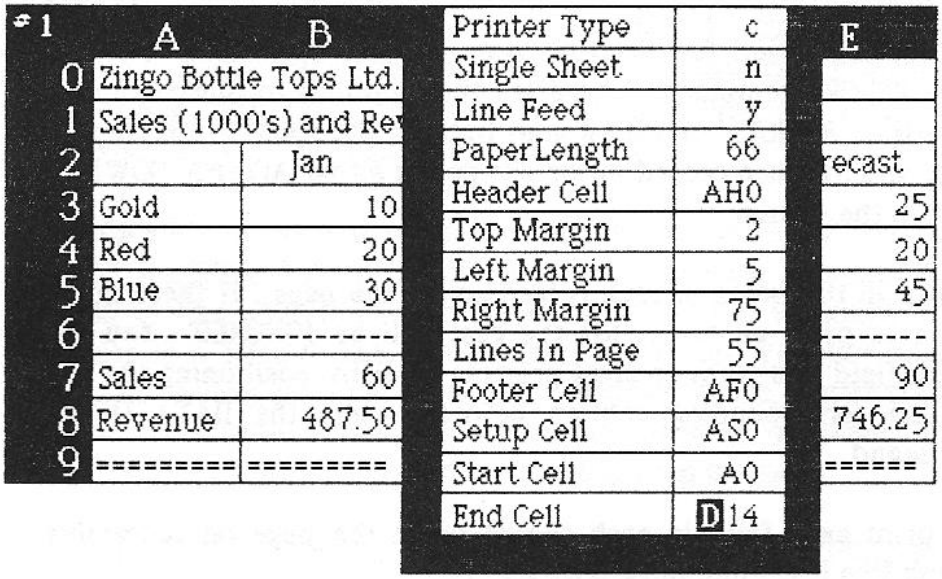


Figure 4.2 The Print Options Screen.

Printer Type — The type of printer you have connected and HOW it is connected. Use a 'c' for Commodore printers. Use a 'p' for parallel printers (e.g. EPSON, SHINWA, JUKI, STAR). Connected to the USER PORT. Types 'c' and 'y' are identical. If you have an ASCII printer hooked up through a parallel-to-serial interface, such as the CARDCO. Tymac, Axiom, etc, use a lower case 'a' for printer type.

Start Cell — The cell you want to start printing from.

End Cell — The cell you want to finish printing on.

So to print our example (ZINGO) worksheet load the worksheet from the disk: select PRINT OPTIONS from the command menu; set the correct printer type: move the cursor to End Cell. Type 'e14' and RETURN; press F1 to print.

If all the lines are printed on top of one another, select PRINT OPTIONS and alter LINE FEED to an ‘n’. Now press F1 to print out the range again.

Printing from a Database File

The main command used for printing your database information is the DATA OTHER REPORT command. There are three options to this command: ACROSS, DOWN or RANGE. VIZASTAR goes back to the start of the current database file and for each record in the file prints either ACROSS, DOWN or a RANGE out to the printer.

ACROSS: prints all the fields in each record across the page. If there is not enough room to print all the fields the rest will be IGNORED. You can specify which field you want to start printing from by positioning the cell pointer to the corresponding column before issuing the DATA OTHER REPORT command.

DOWN: will print each field in each record down the page on successive lines. A blank line is printed between each record. Both ACROSS and DOWN are therefore suitable for printing straight lists.

RANGE: is a more powerful command and is the one you will use most often. For each record in the current database file, VIZASTAR will print out the specified range of worksheet cells. By using the special 'text cell referencing' formula in this worksheet range, you are able to layout a database report in virtually any form.

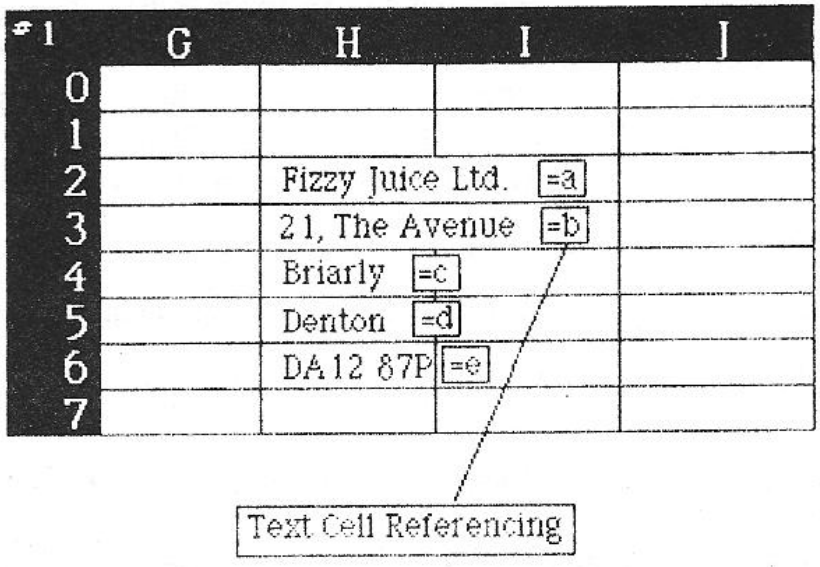


Figure 4.3 The Data Other Report Range Command

RANGE is a more powerful command and is the one you will use most often. For each record in the current database file, VIZASTAR will print out the specified range of worksheet cells. By using the special 'text cell referencing' formula in this worksheet range, you are able to layout a database report in virtually any form.

In Figure 4.3 we have an example of the use of the REPORT command. Cells H2, H3, H4, H5 and H6 all contain 'text cell reference' formulas that refer to **fields in the database**. Now enter these into the worksheet. Notice that to refer to a field in the current database record you use its field letter code. The above example deals with just text fields, but if your database record has numbers then they can be included in worksheet formulas as well. Before printing, a worksheet recalculation is made.

To print with the RANGE option select DATA OTHER REPORT RANGE from the command menu and type the range of worksheet cells where you have set up your formulas - in this case ‘H2:H6' and press RETURN.

When using the DATA OTHER REPORT command (with any of the three options) you can also set database criteria to produce your report for a selected list of records, rather than all the records in the file.

Summary

You have learned in this section how to:

Tell VIZASTAR	What Sort of Printer is connected.
Print	A range of cells from the worksheet.
Print	All the fields of each record in a file ACROSS or DOWN the page.
Use	Text Referencing Formulas to refer to the current database record.
Print	A selection of fields from all the records in a file in any format.

SECTION 5
AUTOMATIC PROCESSING

Writing an EXEC List

Typing an EXEC List

Starting an EXEC

Controlling an EXEC

The EXEC facility is an advanced feature that allows you to automate the commands and your use of VIZASTAR. This does require a reasonably good knowledge of VIZASTAR. The objective of this tutorial is to explain the concept of EXEC's and how to write them. The USER REFERENCE GUIDE has an entire section dedicated to EXEC's.

Writing an EXEC List

Remember in the first section, when you were told how you could issue a VIZASTAR command not only by pressing the SPACE BAR and RETURN but also by pressing the first letter of each command word? It is this structure that the EXEC facility is based upon. For example, if you wished to access the database file you created in the earlier section of this tutorial you would have to:

Select DATA USE DATABASE
Type 'demobase' and RETURN
Select DATA USE FILE
Type 'customer' and RETURN
Select DATA ACCRSS

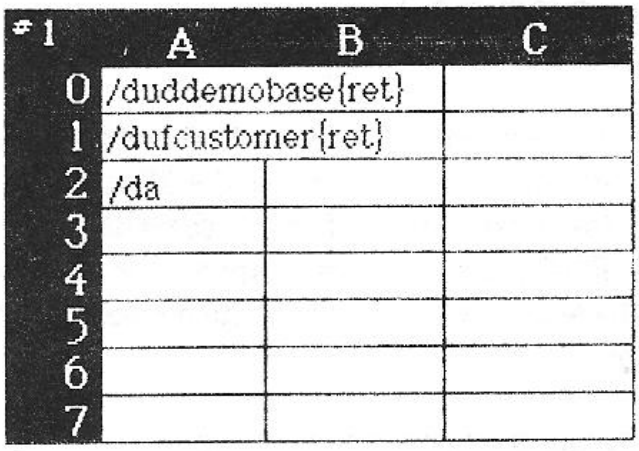
The Commodore key is represented by a '/'. You will write a short EXEC list to duplicate exactly the commands above.

Press the Commodore key	/
select DATA USE DATABASE	dud
type 'demobase'	demobase
press RETURN	{ret}
Press the Commodore key	/
select DATA USE FILE	duf
type 'customer'	customer
press RETURN	{ret}
Press the Commodore key	/
select DATA ACCESS	da

Figure) 5.1 Compiling an Exec list.

Typing an EXEC List

Now you should type this list into the worksheet. An EXEC list should be written vertically down a column as in Figure 5.2.



#1	A	B	C
0	/duddemobase{ret}		
1	/dufcustomer{ret}		
2	/da		
3			
4			
5			
6			
7			

Figure) 5.2 Typing an Exec List Into The Worksheet

You could have written this list all in one cell:

'/duddemobase(ret)/dufcustomer(ret)/da'

But, this makes it far harder to understand.

To emulate the RETURN key we press and release the CTRL (or CONTROL) key and type RETURN. All of the other major 'control keys' of the keyboard can be used in an EXEC list by this method.

Now type the EXEC list into the worksheet. If you already have something in column 'A', type it into another column that is empty. When you have finished typing in the list you can issue the command to start it executing, but before you do this you need to tell VIZASTAR where in the worksheet the EXEC list is. You do this by issuing the SHEET XEC command. Select SHEET XEC from the command menu and type the reference of the first cell of your EXEC list. So, for the list in Figure 5.2 you would type 'a0' and RETURN.

Starting an EXEC List

Now press the F8 key (that's SHIFT and F7 together) to run the EXEC list. VIZASTAR will automatically load your database and access your file. You can add and delete records just as you would normally. Select QUIT to return to the worksheet. Because the EXEC has reached an empty cell, it terminates.

You can now SAVE the worksheet to the disk, and VIZASTAR will automatically remember where the EXEC list is, so that when you load the worksheet again you can just press F8 to run the EXEC.

Controlling an EXEC List

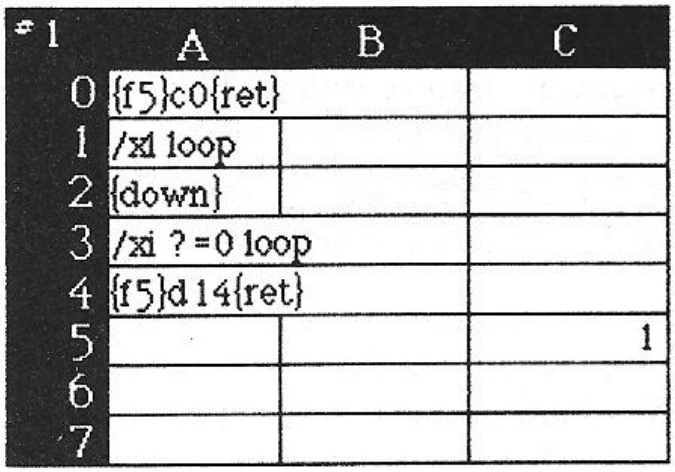
So far we have just used VIZASTAR commands in our EXEC list, but there are a few extra EXEC commands which turn the EXEC facility into a very powerful tool. The most important of these are:

/XL	label	Label this cell in the list
/XI	formula label	If formula is true, go to label
/XG	label	Go to this labeled cell

The '/XL' command names the cell into which it is typed, you can then use the 'label' in the '/XI' and '/XG' commands to 'jump' back or forward to this point in your EXEC list and continue to run the list from there.

One other special feature of the EXEC facility is that you can refer to the current cell pointer position by using a question mark (?). This allows you to do some very powerful comparisons with the '/XI' command.

Here are these extra commands in a simple example:-



#1	A	B	C
0	{f5}c0{ret}		
1	/xl loop		
2	{down}		
3	/xi ?=0 loop		
4	{f5}d 14{ret}		
5			1
6			
7			

Figure 5.3 Using Special EXEC Commands

The EXEC list in figure 5.3 does the following:

Moves the cell pointer to cell C0.
Moves the cell pointer down one cell.
Checks to see if the current cell contains 0 (or nothing) if it does it moves down another cell and checks again.
Moves the cell pointer to cell D14 (the foot of the screen).

The EXEC goes to 'loop' 5 times before it reaches the '1' in cell C5 and jumps to the foot of the screen. This example is used to show the principals behind the EXEC facilities.

On the supplied VIZASTAR system disk you will find several worksheets containing some very large EXEC's. The TUTOR worksheet contains an annotated EXEC which you can run, This will show you around VIZASTAR There is also an EXEC called DEMO, which cycles through a demonstration of VIZASTAR, Two XGP demos are also on the system diskette, 'demo.pie" and "demo.mbar", To run any of the demos or the "tutor", load them in using CBM FILE LOAD and press the F8 key.

Summary

In this final section you have learned:

What an EXEC can do
How to write an EXEC
How to automate VIZASTAR commands
How to control the execution of an EXEC

VIZA
SOFTWARE