

**SuperCalc<sup>2</sup>**  
**SuperCalc<sup>2</sup>**

 **SORCIM®**

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*SuperCalc<sup>2</sup>*

***SuperCalc<sup>2</sup>***

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***SuperCalc<sup>2</sup>***

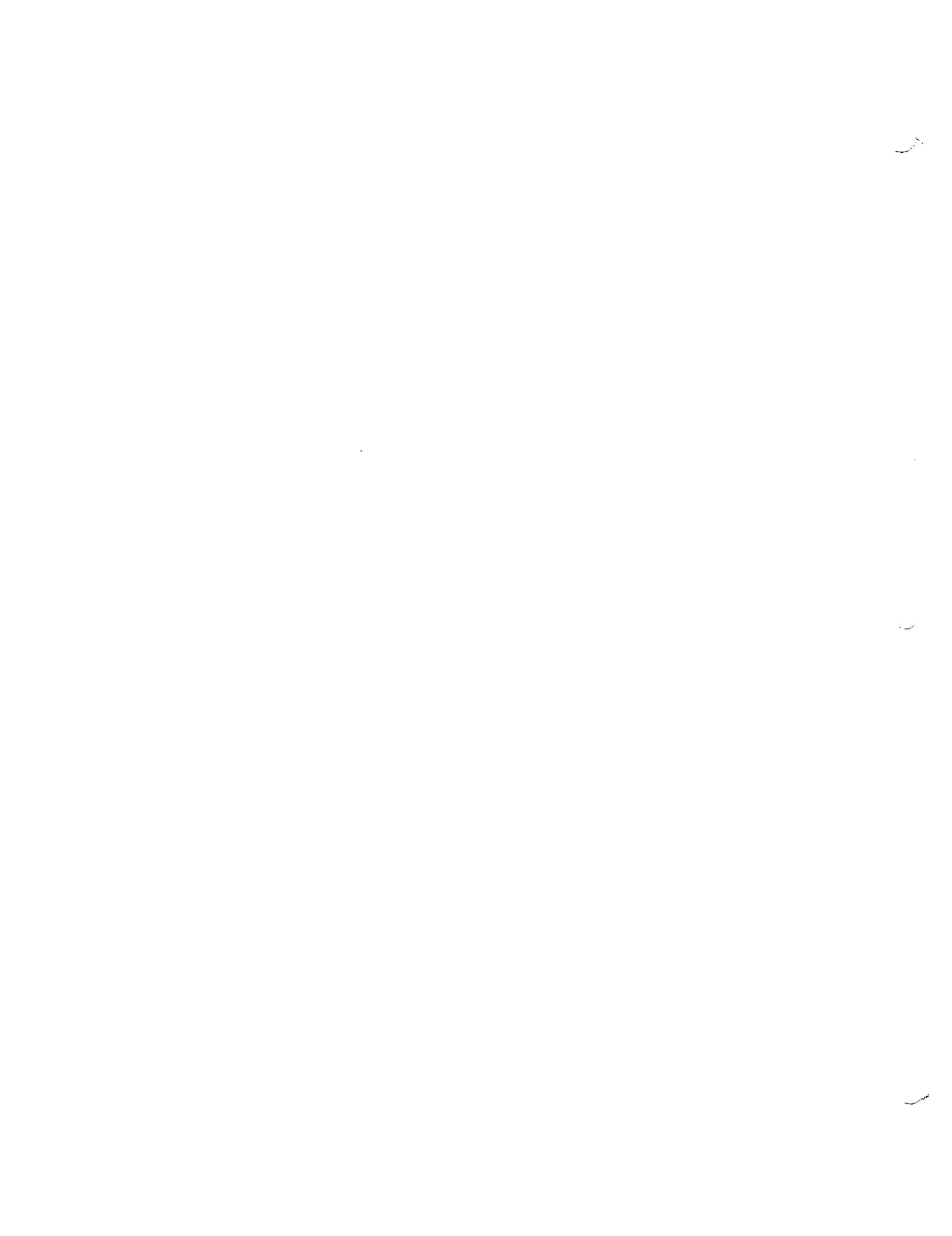
**User's Guide & Reference Manual**

**Documentation 1.0  
April 1983**

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SuperCalc<sup>2</sup>  
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SuperCalc<sup>2</sup>  
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## **WELCOME TO SUPERCALC<sup>2</sup>**

**SuperCalc<sup>2</sup>**  
**SuperCalc<sup>2</sup>**  
**SuperCalc<sup>2</sup>**

### **What is SuperCalc<sup>2</sup>**

## **1. Welcome to SuperCalc<sup>2</sup>**

### **What is SuperCalc<sup>2</sup>**

The SuperCalc<sup>2</sup> program turns your micro computer into a powerful electronic spreadsheet. With SuperCalc<sup>2</sup> you can:

- Lay out your spreadsheet in a convenient manner.
- Perform any type of spreadsheet calculation that you once did with paper and pencil.
- Perform a large number of calculations quickly.
- Supply headings and text material without affecting the calculations.
- Consolidate spreadsheets.
- Print professional-looking reports.
- Include the report information in other documents.

The SuperCalc<sup>2</sup> spreadsheet consists of a two dimensional grid containing cells at the intersection of each row and column. SuperCalc<sup>2</sup> has the facilities to enter information into these cells and to interrelate them using the powerful but easy to use logical commands and built in mathematical functions.

Because many computations are performed swiftly, you can easily set up "what-if" modeling spreadsheets.

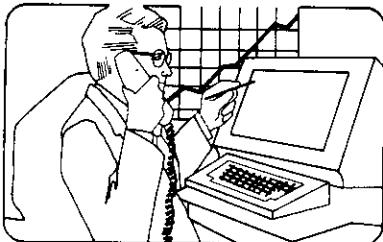
**SuperCalc<sup>2</sup>**  
**SuperCalc<sup>2</sup>**  
**SuperCalc<sup>2</sup>**

## **WELCOME TO SUPERCALC<sup>2</sup>**

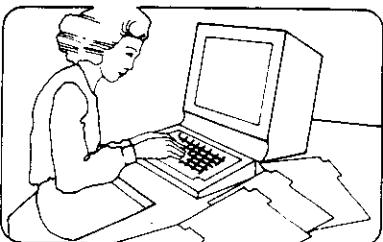
### **What Is SuperCalc<sup>2</sup>**

## **SuperCalc<sup>2</sup> Applications**

The uses for SuperCalc<sup>2</sup> are limited only by your imagination. Some of the more common uses are:



- Balance sheets
- Cash flow analysis/forecasting
- General ledger
- Inventory records
- Job cost estimates
- Market share analysis and planning
- Patient records
- Profit projections
- Profit statements
- Project budgeting and control
- Salary records
- Sales projections and records
- Tax estimation



## **WELCOME TO SUPERCALC<sup>2</sup>**

**SuperCalc<sup>2</sup> is easy to use**

**SuperCalc<sup>2</sup>**  
**SuperCalc<sup>2</sup>**  
**SuperCalc<sup>2</sup>**

### **SuperCalc<sup>2</sup> is easy to use**

With SuperCalc<sup>2</sup> you manipulate data on your electronic spreadsheet instead of using paper and pencil. SuperCalc<sup>2</sup> edits, formats, stores, calculates and prints at your command. You don't have to be a computer programmer to use SuperCalc<sup>2</sup>.

You don't need to remember a long list of commands. SuperCalc<sup>2</sup> prompts you with the options for each command.

SuperCalc<sup>2</sup> contains built-in AnswerScreens that provide immediate help on screen. Just press the Answer Key [?] and SuperCalc<sup>2</sup> explains your available options. You are always returned to the same place you left on your spreadsheet.

This book is your complete reference to SuperCalc<sup>2</sup>. It describes every aspect of the program and is organized to make that information readily available.

**SuperCalc<sup>2</sup>**  
**SuperCalc<sup>2</sup>**  
**SuperCalc<sup>2</sup>**

## **WELCOME TO SUPERCALC<sup>2</sup>**

### **Slash Commands Map**

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### **Slash Commands Map**

The SuperCalc<sup>2</sup> Slash Commands Map on the opposite page shows the route to every command. This overview shows the big picture of the SuperCalc<sup>2</sup> command structure. Use it to assist you in moving through the program.

### **How to Use SuperCalc<sup>2</sup>**

SuperCalc<sup>2</sup> is a powerful tool for solving all types of financial, business or mathematical problems. SuperCalc<sup>2</sup> acts as a simple means to tap the power of your computer to do time-consuming, repetitive calculations.

Solving any problem, from the simplest to the most complex, requires that you organize it in a logical manner. The designers of SuperCalc<sup>2</sup> recognized the importance of logical, practical commands to make the spreadsheet easy to use.

SuperCalc<sup>2</sup>'s simple, common sense approach to commands helps you organize your problem. For example, you can insert, delete or move a column/row and SuperCalc<sup>2</sup> adjusts your formulas automatically.

Once your problem has been clearly defined, data can be changed easily and numbers recalculated quickly. SuperCalc<sup>2</sup> displays data in the format you select, thus aiding you in developing professional looking reports. Once generated, spreadsheets can be stored on disk to access, edit and print later.

## **GETTING STARTED**

**For New Users**



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## **2. Getting Started**

### **For New Users**

This section tells you how to start up SuperCalc<sup>2</sup> on your computer. Before you use your new SuperCalc<sup>2</sup> disk though, look at the SuperCalc<sup>2</sup> Installation Guide.

In order to help you start to use SuperCalc<sup>2</sup>, this section also gives you some information about the operating systems SuperCalc<sup>2</sup> runs under.

This additional information is given only as a convenience. This section does not replace the manuals that came with your computer system. It is meant only to give you some essential information and to guide you in what topics to look up in your systems manual.

The topics we will cover are:

1. Turning On Your Computer.
2. Inserting Your Operating System Diskette.
3. Booting (Loading) Your Operating System.
4. Viewing Your Disk Directory.
5. Using your SuperCalc<sup>2</sup> Distribution Diskette.
6. Backing up Your Distribution Diskette
7. Installing SuperCalc<sup>2</sup>.
8. Starting SuperCalc<sup>2</sup>.
9. Removing the Diskette(s).
10. Shutting Down Your Computer.

After you have gone through the start-up procedure once, you may find it helpful to make some "mini-documentation" of your own. It doesn't have to be anything fancy, just some simple labels and check lists to remind you of the key points.



## GETTING STARTED

### For New Users

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Here are examples of the kind of things that can be especially useful during the first few times that you use a computer — or when you come back to it after being away for some time.

1. **START-UP CHECKLIST.** Your computer's documentation should include start-up procedures that are more specific than the ones in this guide. If it does not — or if they are not clear and concise — make yourself a checklist and post it near your computer. (If the manual does have something like that, make a copy of it and post it.)
2. **WHICH DRIVE IS WHICH.** If your disk drives are not labeled (A, B, etc.), put labels on them.
3. **HOW TO INSERT A DISK.** You may also find it helpful to put labels on your drives that indicate which way the diskette should face when you insert it. For example, "DISK LABEL UP" or "DISK LABEL LEFT."

Before starting this practice session, get your system manuals out and have them handy. You should at least have the manual for your operating system and a manual that shows you how to power up and boot (load) your system from a system diskette. You will also need a pencil, note pad, and perhaps some labels.

It will be helpful if someone who is experienced can guide you through the start-up procedure the first time, but it is not necessary.

### ***Turning On Your Computer***

For this step, you must consult your computer manual, because different computer systems have different requirements. The procedure is usually very simple. It may be a matter of being sure the computer is plugged in and then turning a key or pressing a switch. Or you may have to turn on more than one piece of equipment.

### ***Inserting Your Operating System Diskette***

A "system diskette" is one that has the operating system on it, including a portion called the "boot track" that allows it to start itself. The diskette should be clearly labeled, but if you are not sure that a diskette is a system diskette, go ahead and try it. You won't hurt the diskette or the system.

Your computer's disk drive has slots (probably two or more) where you can insert diskettes. The slots may be vertical or horizontal, and they may have small doors.

## **GETTING STARTED**

**For New Users**



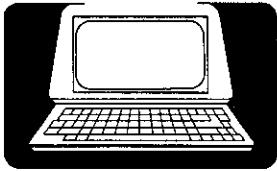
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Open the drive door, if there is one, to the slot for drive A. Drive A is usually the "system drive." If you do not know which drive is drive A, check the documentation that came with your disk drives. Your documentation may call this "Drive zero", which is the same as "Drive A". (If you cannot locate your documentation, the next step suggests a way to determine which is the system drive.)

When you insert the diskette in the slot, the label on the diskette must face a certain way. On most computers, the diskette label should face towards the drive door, with the edge with the open slot inserted first. (If you put the diskette in wrong, you won't hurt anything. You can take it out, reverse it and put it back in.)

Slide the diskette in. You will hear a change in the sound of the drive, and feel the diskette seat in place. You may have to press it into place, but no force is needed. If it does not go all the way in, do not force it. Get assistance.

When the diskette is in place, slide the door closed if there is a door.



## GETTING STARTED

### For New Users

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#### ***Booting (Loading) Your Operating System***

This step gives the operating system control of your computer. It is necessary to do this before you can start SuperCalc<sup>2</sup>.

Here again you will have to consult your manual. Some computer systems have a button or a switch to press, some may require you to perform a different sequence of actions. When you have put the system diskette in the proper drive, your system may load itself automatically.

For the moment, let's assume that you have a switch or button to press. Do that, and watch the drives. Usually, there is a small light over each drive. When the system attempts to access a diskette in a drive, the light for that drive will light.

When you press the button or switch, the light goes on for the drive known as the system drive. If your system diskette is not in that drive, remove it, and put it in the drive that lit. (Most drives have a button that you push to remove the diskette. If there is a door, it will slide open, and the diskette will move a little distance out, so that you can easily pull it the rest of the way.) Then, insert the diskette in the correct drive and proceed. Inserting the diskette may be enough; if not, re-boot.

When the system is loaded, it will write some text on your terminal screen and may ask for today's date or other information. Type any requested information and press the [CR] key.

When the system startup is completed, the system displays a "prompt," such as A>. This prompt means that the system is ready to accept your commands.

#### ***Viewing Your Disk Directory***

Your operating system has a command called "DIR" that shows you a list of the contents of that diskette. Your system manual gives you information on the DIR command.

All you have to do is type DIR and press the [CR] key. On your screen you should see a list of the files on your system diskette. (If not, check further in the manual, or get assistance.)

#### ***Using Your SuperCalc<sup>2</sup> Distribution Diskette***

Your SuperCalc<sup>2</sup> distribution disk contains several files. The files you have depends upon the type of computer system you have. Use the following table to find the files for your operating system.

## GETTING STARTED

For New Users



CP/M & MP/M	CP/M-86 & MP/M-86	IBM PC DOS	MS DOS
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### The SuperCalc<sup>2</sup> Program files:

SC2.COM SC2.OVL SC2.HLP	SC2.CMD SC2.O86 SC2.HLP	SC2.COM SC2.OVL SC2.HLP	SC2.COM SC2.OVL SC2.HLP
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### The sample spreadsheet files:

BUDGET.CAL BRKEVN.CAL CHECKS.CAL SAMPLE.CAL TENMIN.CAL	BUDGET.CAL BRKEVN.CAL CHECKS.CAL SAMPLE.CAL TENMIN.CAL	BUDGET.CAL BRKEVN.CAL CHECKS.CAL SAMPLE.CAL TENMIN.CAL	BUDGET.CAL BRKEVN.CAL CHECKS.CAL SAMPLE.CAL TENMIN.CAL
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### The SuperData Interchange™ Program Files:

SDI.COM SDI.OVL	SDI.CMD SDI.OVL	SDI.COM SDI.OVL	SDI.COM SDI.OVL
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### The Installation files:

INSTALL.COM or INSTALLS.COM INSTALL.OVL INSTALL.DAT	INSTALL.CMD or INSTALLS.CMD INSTALL.O86 INSTALL.DAT	INSTALLS.COM COLOR.COM MONO.COM AUTOEXEC.BAT AUTOBW.BAT AUTO40.BAT AUTO40BW.BAT	INSTALLS.COM
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### The Date-Time Program file:

DATTIM.COM			
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## GETTING STARTED

### For New Users

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#### ***Backing Up Your Distribution Diskette***

You should never work with your distribution SuperCalc<sup>2</sup> diskette. Rather, you should always work with a copy. That way, you reduce the risk of doing accidental harm to your original diskette. Use your operating system copy utility to make the copy.

#### ***Installing SuperCalc<sup>2</sup>***

SuperCalc<sup>2</sup> needs to be "installed" to work properly on some computer systems. On other systems, no installation is needed. Refer to the installation instructions that accompany this manual.

#### ***Starting SuperCalc<sup>2</sup>***

Type **SC2** and press the **[CR]** key. SuperCalc<sup>2</sup> loads and displays a page of information. You then have the choice of pressing **[?]** for Help or pressing any other key to continue.

Press **?**.

After you have looked at the help display, press any key.

If you do not want to begin working with SuperCalc<sup>2</sup> right now, you can stop by typing:

/  
**Q** (for Quit), and  
**Y** (for Yes).

You should see the A> prompt.

#### ***Removing the Disk(s)***

On some drives there is a button near the disk drive door or slot. Push it, and the drive door should open and the diskette slide partly out. On other drives, just pull the door open. Gently pull the diskette all the way out and put it in its protective jacket. Do this with all diskettes in the drives before shutting down the system.

#### ***Shutting Down Your Computer***

Here again you will have to consult your system manual. This may be a simple matter of turning off a key or pressing one switch, or you may have to turn off several items of equipment. It is a good idea to make a note for yourself of the appropriate steps for your system.

## GETTING STARTED

### System Concepts



## System Concepts

Here are a few operating system concepts that are especially relevant to SuperCalc<sup>2</sup>. The information given here is basic and is meant only to suggest further study in your system documentation. These particular concepts have been selected for mention because they affect the following operations:

- Loading and executing SuperCalc<sup>2</sup>.
- Using commands to look at file directories, to erase files, to rename files, and to copy files.

## Useful System Commands

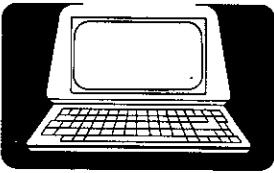
The following commands can be directly executed only when no other programs are running and the system is in control. You cannot use them while you are running SuperCalc<sup>2</sup>. Here is a list of commands that are useful in conjunction with your use of SuperCalc<sup>2</sup> and files. The commands should also be explained in your system operations manual.

The IBM PC DOS or MS DOS operating system commands are:

DIR	Displays disk file directory
RENAME	Renames a disk file
COPY	Copies disk files
DISKCOPY	Copies entire disk
ERASE	Erases a disk file
CHKDSK	Displays status of a disk

The CP/M, MP/M, CP/M-86, and MP/M-86 operating system commands are:

DIR	Displays disk file directory
REN	Renames a disk file
ERA	Erases a disk file
PIP	Copies a disk file
STAT	Displays status of a disk



## GETTING STARTED

### Disk Drive Designation

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### Disk Drive Designation

Files are assumed to be on the diskette in your default or logged drive unless you specify otherwise. This means that you can refer by name alone to any file located on that diskette. References to files on other drives must include a drive designation that consists of the drive's identifying letter and a colon, as in B:LESSON5.CAL.

### File Names and File Name Extensions

Files on a disk have individual names that are kept in a directory on the disk. Each name on a disk must be unique. (Different disks may have documents with the same name.)

Valid CP/M and MP/M file names must start with an alphabetic character, while PC DOS or MS DOS file names may also begin with any numeral or certain symbols. File names may be from one to eight characters long. The name may not contain blank spaces or any of these characters:

. , : = ; [ ] \* ? < >

### Special File Name Extensions

File names can have an extension of up to three characters, such as SC2.COM or REPORT.TXT. The File name and extension are separated by a "." as shown.

Some extensions have special significance. Special extensions to note are:

#### **.COM** and **.CMD** (as in SC2.COM or SC2.CMD)

The .COM extension or the .CMD extension (in CP/M-86 and MP/M-86 systems only) identifies a file that can be "loaded" and "executed" by typing its name alone. For example, we load and execute (start up) SuperCalc<sup>2</sup> by typing SC2.

#### **.CAL** (as in LESSON3.CAL)

The .CAL extension has a special meaning to SuperCalc<sup>2</sup>. It identifies SuperCalc<sup>2</sup> spreadsheets. When you save a spreadsheet, you can specify a file name with or without an extension. If you do not specify an extension, SuperCalc<sup>2</sup> automatically gives the resulting file a .CAL extension. Similarly, when you load a spreadsheet, the .CAL extension is assumed unless you specify an extension.

## GETTING STARTED

### File Names and File Name Extensions



When you look at a disk directory, the .CAL extension is a quick way to locate the SuperCalc<sup>2</sup> spreadsheets.

.CAL files from SuperCalc<sup>2</sup> are written in a special format. They cannot be read by other programs. Use the SuperData Interchange™ program or .PRN files (described below) to read your spreadsheets into another program.

#### .OVL or .O86 (as in SC2.OVL)

The .OVL (.O86 for CP/M-86 and MP/M-86) extension also identifies special program files. Part of the SuperCalc<sup>2</sup> program is kept in a file named SC2.OVL. This file must be on your program disk for SuperCalc<sup>2</sup> to run properly.

#### .HLP (as in SC2.HLP)

The SC2.HLP file contains all the Help text for SuperCalc<sup>2</sup>. This file must also be on the SuperCalc<sup>2</sup> disk.

#### .BAK (as in REPORT.BAK)

SuperCalc<sup>2</sup> can save the previous version of a spreadsheet when you save a new revised version, if you so specify. This previous version is called a "backup" file, and the extension .BAK replaces the previous extension (.CAL).

#### .PRN (as in REPORT.PRN)

The .PRN extension has a special meaning. It is used for disk files that can be printed by certain system utility programs (for example, the command TYPE). Spreadsheets can be set up in what is called "print image," meaning that the contents of the disk file can be printed as text. SuperCalc<sup>2</sup> allows you to output a spreadsheet as a print-image file and assigns an extension of .PRN automatically.

Print image files are also useful if you need to transfer a spreadsheet or a portion of a spreadsheet to another program. For example, if you want to include a section of a SuperCalc<sup>2</sup> spreadsheet in a document prepared with SuperWriter™ (or another word processing program), you would use SuperCalc<sup>2</sup> to prepare that section as a .PRN file. The word processor could then include that .PRN file in the document.



## GETTING STARTED

### Write-Protecting a Disk

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#### .XQT

The .XQT extension tells SuperCalc<sup>2</sup> that the file contains "commands" to be executed. SuperCalc<sup>2</sup> interprets each character in an .XQT file as if it had been entered directly from the keyboard.

### Write-Protecting a Disk

An entire diskette can be physically write-protected. When it is protected, no one can write on it or erase it. The system detects this protection and gives you a message if you try to write or erase information on that diskette.

The method of physical write-protection varies, depending on whether your diskettes are 8 inch or 5-1/4 inch diskettes.

8 inch diskettes are protected UNLESS a notch in the casing is covered. The covering is usually a black or silver label that is folded over the notch. Placing the label on the diskette is sometimes called "write-enabling" the diskette.

Note: Some 8 inch disks do not have a write-protect notch and CANNOT be write protected.

With 5-1/4 inch diskettes the situation is REVERSED. A black or silver label is put on them to PROTECT them.

Your system disk drive documentation will explain in detail how to write-protect or write-enable a diskette.

### Write-Protecting a File

The CP/M and MP/M systems allow you to "write-protect" individual files by name on a diskette (see the STAT command). When you do this, the file cannot be written over or erased. If you try to write over or erase a protected file, the system will give an error message. Consult your manual on the STAT command for information on how to write-protect a file.

## **GETTING STARTED**

### **Setting the System Date**



### **Setting the System Date**

SuperCalc<sup>2</sup> can use the date stored in your computer with its Calendar Functions. You need to set the date before beginning SuperCalc<sup>2</sup>. The way to set the date depends upon the computer you have.

- Computers using the MS-DOS or IBM PC DOS operating systems prompt you for the date and time when you first turn on the power.
- Computers using MP/M, CP/M-86 or MP/M-86 do not prompt for the date. Use the Digital Research program TOD to set the date.
- Computers using CP/M do not prompt for the date. Use the Sorcim program DATTIM to set the date and time. DATTIM is a separate program included on your SuperCalc<sup>2</sup> diskette. It prompts you to enter the date in conventional format (MM/DD/YY) and the time (HH:MM) using a 24 hour clock. Although SuperCalc<sup>2</sup> does not use the time, you must enter it into the system to properly exit DATTIM.

## **Notes**

**LEARNING TO USE SUPERCALC<sup>2</sup>****Moving the Active Cell Around the Worksheet**

### **3. Learning To Use SuperCalc<sup>2</sup>**

The following twelve lessons are provided to teach you the basic skills needed to use SuperCalc<sup>2</sup>. Each lesson walks you through key features of SuperCalc<sup>2</sup> building your knowledge of the program. The individual lessons are designed to augment the reference section.

Sit down at your terminal, place your disk in the system and let's learn about this powerful tool: SuperCalc<sup>2</sup>.

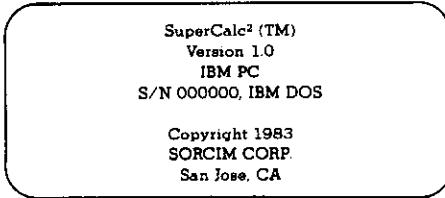
#### **LESSON 1**

##### **Moving the Active Cell Around the Worksheet**

Imagine that you are examining a map through a magnifying glass. When you use the SuperCalc<sup>2</sup> program, think of the video screen or "display window" as your magnifying glass; through it, you can view any area of your map or SuperCalc<sup>2</sup> spreadsheet. You will make the display window move or "scroll" to show you different parts of your spreadsheet.

In the same way that you use latitude and longitude measurements to designate a unique location on a map, you will learn to locate and enter data on the SuperCalc<sup>2</sup> spreadsheet in positions specified with reference to alphabetically designated columns and numerically designated rows. A unique letter and number combination names every location on your spreadsheet. In this lesson, you will also learn how to point to, or specify, a unique address on the display area of your spreadsheet by using a pointer or cursor. This chapter assumes that you know how to load the SuperCalc<sup>2</sup> program from your diskette. If you do not, please read Chapter 2.

When the SuperCalc<sup>2</sup> program begins running you should see the title page on the screen:



At the bottom of the screen is a line that reads:

Enter "?" for HELP or "return" to start.

Function Keys: F1 = HELP; F2 = ERASE LINE/RETURN TO WORKSHEET

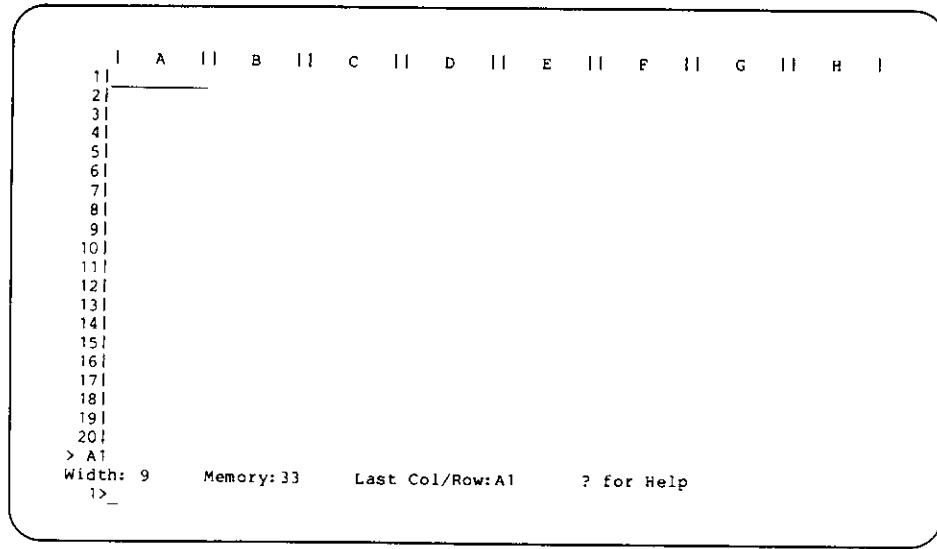
# LESSON

# 1

## LEARNING TO USE SUPERCALC<sup>2</sup>

### Moving the Active Cell Around the Worksheet

Press the **return** key. From this point of the **return** key will be referred to as **[CR]** for carriage return.



Let's examine the screen. You will note that columns A through H and rows 1 through 20 are represented. If your screen displays only 40 characters per line you will see only columns A through D. You can see that the coordinate A1 is highlighted. On some terminals, you will see a bright underscore at that position. (Some terminals may have "inverse video," which means that you will see a bright bar or perhaps your terminal uses <> as an indicator.) This is the "spreadsheet cursor" and designates the Active Cell. The Active Cell is the location where data is entered.

Any coordinate —for instance, A1, B3, B6, or G19— is called a "cell" because it represents a unique position on our "spreadsheet". The spreadsheet cursor can be positioned to any cell on the screen. This is accomplished by pressing any of the arrow keys at the right side of your keyboard.

Let's press the **right arrow**. The spreadsheet cursor should have moved one cell to the right, to B1. Again press the same key, to move to C1. Try the down direction. Experiment, using these four keys to move the Active Cell indicator around to different locations on the spreadsheet display.

Note: If you do not have arrow keys you can use the **D**, **S**, **E**, **X** keys along with the **Control** key [**CTRL**] to move right [**CTRL-D**], left [**CTRL-S**], up [**CTRL-E**], and down [**CTRL-X**]. When one of these keys is pressed in conjunction with the [**CTRL**] key, it moves the cursor in the same direction as the corresponding arrow key. For convenience we will refer only to the arrow keys in this manual.

**LEARNING TO USE SUPERCALC<sup>2</sup>****Moving the Active Cell Around the Worksheet*****Scrolling***

What happens if you try to go above Row 1 or to the left of Column A? Nothing. You have reached the spreadsheet margin in these directions. But what about moving to the right or down? Try it, if you haven't already. You will quickly discover that when you move as if to go off the screen to the right or downwards, the columns or rows appear to renumber themselves. Actually those cells that were "off-screen", beyond the range of your display window, are brought into view, a column or row at a time.

Move one column to the right beyond the edge of the screen. You see that the columns change from A through H, to B through I. At any given moment you will be looking at only a portion of the potentially usable spreadsheet. This is what we mean by the "display window". As we move this window either horizontally or vertically, we are "scrolling" the display.

```
I   W   ||   X   ||   Y   ||   Z   ||   AA  ||   AB  ||   AC  ||   AD  ||  
1|  
2|  
3|  
4|  
5|  
6|  
7|  
8|  
9|  
10|  
11|  
12|  
13|  
14|  
15|  
16|  
17|  
18|  
19|  
20|  
>AD1  
Width: 9      Memory:33      Last Col/Row:A1      ? for HELP  
1>
```

Try moving off the screen to the right, but this time continue to hold the key down instead of just striking it once. If your keyboard is so equipped, you will see the screen continue to scroll until you stop pressing the key.

If your keys do not "repeat" when you hold them down, your terminal may have a special **Repeat Key**. Use it with the arrow key for the same result.

Continue to "scroll" the screen until you come to column Z. Note that the remaining columns are represented by two letters, AA, AB, and so on.

**LEARNING TO USE SUPERCALC<sup>2</sup>****Moving the Active Cell Around the Worksheet*****The Status, Prompt, and Entry Line***

Notice the three lines at the bottom of your screen. The top line is the Active Cell and spreadsheet cursor "status" line. The SuperCalc<sup>2</sup> program uses this line to report to you the cursor status.

The first character, an arrow (**A**, **V**, **<**, **>**), indicates the direction in which the spreadsheet cursor will move when you use the [**CR**]. To change the direction of the cursor movement, press an arrow key that points in another direction from which the cursor is presently moving.

The next entry on the status line is the "address" of the current Active Cell. The status line allows you to read from your spreadsheet the location of the Active Cell more conveniently than you could by visually triangulating the cursor position with respect to the spreadsheet borders.

If the current Active Cell is empty, there will be nothing else displayed on the "status" line; however, if the Active Cell contains text, number, or formulas, the contents of the cell will appear as you entered it.

Now move the spreadsheet cursor around, and watch the status line as the Active Cell and direction indicators change.

The second line is the "prompt" and secondary status line. This line will display the current cell width, available memory, and indicate spreadsheet size by giving the right-most column and lowest line number used for your current application. When you are in command-entry mode the message displayed here will change depending on what command you are currently using. The prompt message lists your options at any given moment.

The bottom line is the "entry" line. It displays a **1>** at the left margin. This line allows us to communicate with the SuperCalc<sup>2</sup> program. It displays the information we type in at the keyboard-data, command, or responses to prompt messages. The entry line is your scratch pad. It allows you to check and edit the data or text you wish to enter before you commit it to the spreadsheet. As we input characters, the entry line cursor will move to indicate where the next character will appear. At the left-hand margin, the number 1 will change to 2, 3, etc. as the cursor moves.

***The GoTo Command***

It is natural to wonder if there isn't some way to move the spreadsheet cursor quickly to a desired position without using a stepwise combination of arrow keys. There is. Typing [=] initiates the go to command.

## LEARNING TO USE SUPERCALC<sup>2</sup>

### Moving the Active Cell Around the Worksheet

What if you mistyped [=]? What can you do about it? You can use the left arrow key to backspace and then try again. We'll explain this feature more fully later on, but for now you know how to correct a mistake.

The prompt line now reads "Enter cell to jump to." This is typical of the helpful conversational efforts you can expect from the prompt line. Now type **M31** or **m31**. Either will work. (The SuperCalc<sup>2</sup> program accepts either lower case or upper case letters for any entries, but you cannot use a lower case letter "l" for the numeral one, "1.") But for any action to occur, you must press the return key, [**CR**]. It's a good habit to check your work first, by reading the entry line.

Now press [**CR**], if you haven't done so already.

If you did everything right, we have very quickly moved to the part of the spreadsheet where M31 is located. Cell M31 now appears at the top leftmost corner of your display window. See if you can use the [=] to find out how large the spreadsheet is. When you are finished go to A1 again.

Here is an additional feature of the *go to* command. Move the Active Cell to anywhere near the middle of the screen, say to E8. Enter [=], but specify no cell, just press [**CR**]. Notice how the Active Cell remains E8, yet the display window is repositioned so that the Active Cell appears at the top left corner.

We have now used the arrow keys and the [=] key. Remember that for most situations, any entry must be followed by pressing the [**CR**] key. The SuperCalc<sup>2</sup> program will then accept and display our entry.

Press the [**CR**] key a few times, and notice that the position of the Active Cell advances to the next cell. The direction taken-left, right, up, or down depends on which arrow key was last used.

Press the **down arrow**, and then [**CR**] a few times. Now the **leftarrow**, and [**CR**] several times. The arrow keys set the direction, and then the CR advances the spreadsheet cursor cell by cell. (Remember you can always check the status line to find the current direction.)

### ***The Quit Command***

What about some of the other operations? Let's try "/". Press the / key. The prompt line changes and now says:

Enter: A,B,C,D,E,F,G,I,L,M,O,P,Q,R,S,T,U,W,X,Z,?

The prompt line is telling you that these letters represent the only meaningful actions you can take now that you have entered the "/".

## 1

## LESSON

LEARNING TO USE SUPERCALC<sup>2</sup>Moving the Active Cell Around the Worksheet

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Each letter designates an option of the / commands. Whenever you wish to examine this command option list in its expanded form, press ? and the list will be displayed on your screen. To return to your spreadsheet display, press [CR]. We will explore many of these commands soon, but for now you should know about one in particular.

Press the **Q** key. What happened? First the /Q was automatically interpreted by the SuperCalc<sup>2</sup> program so that your /Q appears on the entry line as /Quit. Second, the prompt line changes. It now reads:

"EXIT SuperCalc? Y(es),N(o), or T(o)".

If you want to stop here and continue the lesson later, press the **Y** key; otherwise, press **N**.

What you have learned in this lesson?

In this lesson you have seen the display window scroll and learned what "current direction" means. You have also learned how to:

- Identify the spreadsheet cursor and locate the Active Cell.
- Move the spreadsheet cursor anywhere on the spreadsheet.
- Move the cursor with the four arrow keys, the alternate diamond keys, and the [CR].
- Use the = (or **GoTo**) command, either as a shortcut to a new location, or to reposition the spreadsheet with respect to the Active Cell.
- Read the Active Cell location, current direction, and column display width on the status line.

LEARNING TO USE SUPERCALC<sup>2</sup>

## Data Entry — Numbers, Text and Simple Formulas

## LESSON 2

## Data Entry — Numbers, Text and Simple Formulas

From Lesson 1 you have gained a general understanding of the control and display characteristics of the SuperCalc<sup>2</sup> program. In this lesson, you will learn how to enter data. You will also learn the *zap* command (/Z) to clear the spreadsheet, using the "in-line editing" features, and using the *edit* command (/E).

If the SuperCalc<sup>2</sup> program is not already loaded, load it now. (See Chapter 2 if you are not sure how to do this.)

Now let's actually make some entries on our spreadsheet.

In this exercise, we will be entering numbers down the column, so we want to set the spreadsheet cursor to move "down". Do so by pressing the **down arrow**. Now use the *Go To* command to place the Active Cell marker at A1.

Enter the number **5** on the entry line. Do not press [CR] yet. You may cancel an operation at any time by pressing the [CTRL] key and the [Z] key simultaneously. If you start to do something but then change your mind, pressing [CTRL-Z] will allow you to start over without affecting the spreadsheet.

You have "5" on the entry line. Now press [CR].

Pressing [CR] will enter whatever is currently shown on the entry line; that is, the characters you have typed will be sent to the Active Cell, and the entry line will be cleared. In our example, the data item "5" should now appear on the screen in cell A1.

I	A	II	B	II	C	II	D	I
1			5					
2 <		>						
3								
4								

Notice that the spreadsheet cursor moved to A2. Enter **6**, but do not press [CR] yet. Did you notice that before you typed 6, there was a **1>** at the left edge of the entry line? Now there is a **2>**. You will see this number increase each time you type a character on the entry line. The number you see is always one more than the number of characters you have typed. For now, this information helps you fit your data into the column width you have — remember the "9" on the status line. In a later lesson, you will learn how to change the column width, and this character count will be even more helpful.

# 2

## LESSON

### LEARNING TO USE SUPERCALC<sup>2</sup>

#### Data Entry — Numbers, Text and Simple Formulas

Now press [CR], and cell A2 will contain the value 6. Cell A3 has become the Active Cell.

Let's try another entry, 12 and [CR].

The same thing should have happened. The spreadsheet cursor is progressing down the column, automatically anticipating the location of your next entry.

Now press the right arrow. Enter 56, press [CR]. What happened?

56 appears in B4, and the spreadsheet cursor has moved to cell C4. After each entry, the spreadsheet cursor will continue to move automatically to the next cell. The direction it will move has been set by whichever of the arrow keys was last used. For instance, suppose we wish to change the contents of cell B4. Press the left arrow. Enter 8 and press [CR].

This will replace the previous entry of "56". But, in addition, the spreadsheet cursor continues now in a leftward direction to A4.

I	A	B	C	D
11	5			
21	6			
31	12			
41<	>	8		
51				

Try entering different letters and numbers as data, using the arrow keys to change direction. Take a few minutes.

Generally speaking, there are two kinds of entries, text and numbers. When your entry is preceded by a double quote [""], it is regarded as "text". When it is preceded by a single quote [''], it is regarded as "repeating text". Otherwise it is regarded as a number or formula.

Headings, labels, and explanatory notes are examples of text entries. Mathematically they are regarded as having a *value of zero*. If you forget to lead text with quotation marks, the computer will respond with an error message. The quotation marks should not be closed. Otherwise, the closing quotation marks will be included in the displayed text.

#### ***The Zap Command***

Let's try some examples, but first let's start with a fresh screen.

Remember we used the *quit* command to exit from the SuperCalc<sup>2</sup> program altogether in Lesson 1. Now we will use another command, *zap*.

LEARNING TO USE SUPERCALC<sup>2</sup>

## Data Entry — Numbers, Text and Simple Formulas

Enter [/], and note that the prompt line again displays for us all possible "/" commands.

Enter Z. The interpretive prompting now reads "Zap-ENTIRE-spreadsheet?" The effect of the zap command is to clear the entire spreadsheet and return everything to its original state, just as it was when you first loaded the SuperCalc<sup>2</sup> program. Because the effect is so drastic, the program uses the prompt line to remind us that the entire spreadsheet will be emptied and to verify that we really want to do this. The prompt asks, "Y(es) to clear everything, else N(o) or C(ontents)

We do want to clear everything, so enter Y, and the SuperCalc<sup>2</sup> program will do just that. Whatever we had put on the spreadsheet is now gone, permanently.

### ***Textual and Numerical Entries***

Now enter "Oranges" in cell B1 and 250 in B2. Remember to lead off Oranges with quotation marks (""). Notice that text is left-justified and numeric values are right-justified within the column.

I	A	B	C	D
11		Oranges		
21		250		
31		<	>	
41				

Move the Active Cell back to B2 and watch the middle of the Status Line. It will say Form=250. Move the cursor to B1; the same line will say Text="Oranges".

^B1	Text="Oranges"
Width: 9	Memory: 30
1>	Last Col/Row: B2
? for HELP	

How wide are the columns? How large a number can we enter? How much text? Remember we mentioned "display width" earlier when looking at the status line. Note again the "9" on the status line.

The 9 tells us that the column currently accessed (the column with the Active Cell) is set to display nine characters. Nine is the standard, or *default* value for the display width of all columns unless you specify otherwise. You will soon learn how to specify display widths. Text may contain 115 characters; formulas may contain as many as 116 characters. The maximum column width is 127.

# 2

## LESSON

### LEARNING TO USE SUPERCALC<sup>2</sup>

#### Data Entry — Numbers, Text and Simple Formulas

Move the spreadsheet cursor to B3, and type “**Alberta peaches**”. This piece of text is certainly longer than nine characters, but the SuperCalc<sup>2</sup> program allows display of your text to extend over neighboring cells if they are unused. Now go to A1 and try the same thing.

Your entry did not display in full because B1 is occupied. But the entire entry was accepted to cell A1 even if only a portion of it (the first nine characters) is displayed. (Notice that the status line indicates the contents of A1 as Text=“Alberta peaches”).

Move to B4. Enter, without commas, **2500000000**. The number is too large to display. The SuperCalc<sup>2</sup> program converts it to scientific notation, a more compact format, and displays it as **2.5e9**. **2.5e9** is the display form of the expression  $2.5 \times 10^9$ , or the conventional abbreviation of 2,500,000,000. The SuperCalc<sup>2</sup> program provides many different display and format options. These will be described in more detail later.

	A	B	C	D	
1	Alberta oranges				
2		250			
3		Alberta peaches			
4			2.5e9		
5			< >		
6					

If exponential numbers are new to you, here is a quick look at what they are and how the SuperCalc<sup>2</sup> program displays them. Exponential numbers are displayed as “powers of 10”. You will soon see what this means.

Go to Cell C1 and set column C to exponential display. Use the format command to do this. Enter **/F** for the command, and **C** for Column. When the prompt asks you what column to format, you can press the [,] of the **[CR]** key to tell the SuperCalc<sup>2</sup> program to use the current column (C). Press **E** for Exponential format, then **[CR]**

Press the **down arrow** to set the current direction as down. Now enter **1776**. Cell C2 shows “**1.776e3**”. What does this mean? e3 means “exponential 3” or “10 to the power of 3”. 10 to the power of 3 is 1000; 1.766 times 1000 is 1776. That’s all that **1.776e3** means.

Try entering **1000**. Is **1e3** what you expected? What will **100** be? Try it. Now enter **2000**, and then enter **.002**. Notice that **2000** is **2e3** and that **.002** is **2e-3**. e3 is thousands; e-3 is thousandths. What is **-2000**? Try it and see.

What happens if you enter a number in exponential notation? Let’s try it. Enter **567e13**. Are you surprised to see it display as **5.67e15**? The SuperCalc<sup>2</sup> program prefers to put the decimal point just after the first digit and will adjust the exponent value to do so.

## 2

## LESSON

LEARNING TO USE SUPERCALC<sup>2</sup>

## Data Entry — Numbers, Text and Simple Formulas

Explore on your own — entering numbers as you ordinarily would, and entering them in exponential form. Try to guess beforehand what the display will be.

When you feel comfortable with exponential notation, let's give the SuperCalc<sup>2</sup> program a little job to do.

Press the down arrow, (v) to set the cursor direction and then press =C6 [CR].

In cell C6 enter **93000000**. That is 93 million, which is the number of miles between the earth and the sun. 9.3e7 is 9.3 times 10 million, which seems right. Now in cell C7, enter **5280\*C6**. The value displayed, 4.910e11, is the number of feet in 93 million miles. Let's try inches. Enter **12\*C7** in cell C8. The display shows that the sun is **5.892e12** inches from the earth.

So **5.892e12** is the number of inches between the earth and the surface of the sun? Well, not really. It is the number of inches in 93 million miles, but 93 million is the number of miles between here and the sun expressed to the nearest million.

What **5.892e12** really tells us is that there are about 5.9 times 1,000,000,000,000 inches between here and the sun. Only the first two digits of 5.892 are significant, because only the 93 was significant in 93 million miles.

Why bring this up? Because that is the point of scientific notation. Scientific notation allows us to quickly grasp the essential points of a number and discard the unessential.

The first part of the number gives us the essentials (and probably some others that we can discard). The exponent value, the number after "e", tells us whether we are talking about 10s, 100s, 1000s, or millions, billions, trillions (or billionths and trillionths).

In short, exponential or scientific numbers give us the essentials, the significant digits and the general magnitude of the value.

Three types of exponential expressions may occur:

1. **1.776e3; 1.776x1000 or  $10^3$**
2. **1.776e-3; 1.776x1/1000 or  $10^{-3}$**
3. **-1.776e3; -1.766x1000 or  $10^3$  (a negative number).**

## 2

## LESSON

LEARNING TO USE SUPERCALC<sup>2</sup>

## Data Entry — Numbers, Text and Simple Formulas

	A	B	C	D	E
1	Alberta pOranges				
2		250			
3		Alberta peaches			
4			2.5e9		
5		<	>		
6					
...					
...					
>B5					
Width: 9	Memory: 33	Last Col/Row: B4	? For Help		
5>"Pin_apples					

*In-Line Editing*

Right now, let's investigate the SuperCalc<sup>2</sup> program's "in-line" editing feature. If you have used the exponential notation section of the lesson, "zap" your spreadsheet and re-enter your original data as shown on page 3-10, and above.

Move the Active Cell to B5. Type this incorrect spelling, "Pinapples", but *do not* press [CR]. As you know, you could use a *left* arrow to backspace and re-type from the point of the error. The *right* arrow key just moves in the opposite direction.

Using the left and right arrows, move back and forth across your text, but take care not to backspace beyond the leftmost character. Notice that nothing is changed and the position of the cursor is on the "a". Notice, too, that the number 5 appears at the left of your entry line. This indicates that the cursor is located at the fifth character position on your entry line.

Press the **up arrow** key, and see what happens.

A space has been created for us just ahead of the "a" so that we may insert the correction without having to re-type good text. Enter e. Your entry line now says "Pineapple". What if you had needed to insert several characters, or to delete some?

Press the up arrow key continuously, or press the key several times, to generate a large gap in the text. Press the down arrow key and notice that the gap is reduced by one character. Hold the down arrow key down, or press the key several times, and watch the blank spaces be deleted. Go ahead and enter "Pineapples", and then make up other examples. Practice with these keys until you are comfortable with this "in-line editing" feature. Try it with numeric entries, too.

Regardless of where the cursor is positioned on the entry line, all of the visible text or numeric values will go into the Active Cell when you press [CR].

**LEARNING TO USE SUPERCALC<sup>2</sup>****Data Entry — Numbers, Text and Simple Formulas**

You have discovered that the arrow keys have two different uses. They move the Active Cell around the spreadsheet *until* you type a character on the entry line. Then the SuperCalc<sup>2</sup> program recognizes that you have begun to enter data.

Once you begin to enter data instead of positioning the spreadsheet cursor the arrow keys have an editing function until you press [**CTRL-Z**] or successfully complete the cell entry.

***The Edit Command***

We have seen how to edit data *before* we actually enter it into the Active Cell. How can we edit data that we have already sent to a cell? Of course, we could enter the data again in its entirety. The new entry would replace the old one. But there is a better way. We can use a new command, the *edit* command (**/E**).

Make B4 the Active Cell (use *go to* or move the spreadsheet cursor). Enter **/E**, for *edit*. You see the prompt line now says, "From? Enter cell". It is asking where to find the material to be edited.

Because in this case we want to edit the contents of the Active Cell, we don't have to give a cell address. Simply press [**CR**], and the SuperCalc<sup>2</sup> program will bring the Active Cell's contents to the entry line.

Make your changes, using the arrow keys. For instance, delete two zeros from 2500000000. When your change is complete, press [**CR**], and your modified entry replaces the old one in B4. If you haven't done this, try it now.

You may sometimes wish to edit the contents of a cell and enter them into *another* cell. For example, position the Active Cell to B5 (our destination cell). Enter **/E**. In response to the prompt, "from?", enter **B4** (our source cell), and press [**CR**]. The contents of B4 will be copied to the entry line. After you have made your change, press [**CR**] and the edited version of B4 will be copied back to B5.

Note that no matter where it comes from, the "new" or "edited" data on the entry line is always entered into the *Active Cell*. In our first example, the original contents of B4, the Active Cell, were modified and replaced by our edited version. In the second example, the contents of B4 were *not* changed. The edited material went into B5, the Active Cell, and the source material remained unchanged in B4.

If you want to stop here, use the *quit* command. Or if you wish, continue on to Lesson 3.

# 2

## LESSON

### LEARNING TO USE SUPERCALC<sup>2</sup>

#### Data Entry — Numbers, Text and Simple Formulas

---

What have you learned in this lesson?

In this lesson you have learned how to:

- Make number and text data entries
- Cancel an operation by using [CTRL-Z]
- Replace one data entry with another
- Set the direction in which the spreadsheet cursor moves
- Recognize and use exponential notation
- Do *in-line* editing
- Use /E, the *edit* command.

LEARNING TO USE SUPERCALC<sup>2</sup>

## Blanking, Protecting, Unprotecting, and Saving Your Work

## LESSON 3

Blanking, Protecting, Unprotecting,  
and Saving Your Work

In Lesson 2, we expanded our knowledge to include the fundamentals of data entry for the purposes of creating text or for entering numeric data to be used in actual calculations. In this lesson, you will gain more experience entering data. You will learn to blank, protect, unprotect, and save your data. You will also learn to use the /G command to make some general or "global" changes in your spreadsheet display and to use the /F command to make certain formatting changes.

If you are continuing directly on from Lesson 2, do a /Z command so that we may start with an empty screen. Otherwise, load the SuperCalc<sup>2</sup> program in accordance with the instructions in "Getting Started".

Use the **down arrow** to set the current direction. Use the go to command to go to A1. Enter **"Apples"**. At A2 enter **5**. Continue in this way with A3 through A9, entering values of **8, 3, 11, 4, 9, 6, and 12** respectively.

In Lesson 2, we learned how to modify a cell's contents, to **edit**. But what if we want to "blank" a cell, to clear out its contents?

We can do that with a new command, the **blank** command. It can be used to blank out, or erase, data that you have already entered on any size portion of your spreadsheet. You can blank an individual entry or cell, partial or complete rows or columns, or entire blocks (rows and columns) of cells. We will try an example of each in this lesson.

Enter **/** and note the prompt line. Now enter **B**. The interpretive prompting fills this out, **/B**lank. And the prompt line changes to say, "Enter range". You must now specify the portion, or range, of the spreadsheet that you wish to blank.

Type **A4** and press **[CR]**. The contents of A4 have been "blanked", that is erased. Or you can place the spreadsheet cursor on the cell you wish to blank, enter **/B**, and with no cell reference, press **[CR]**. Try doing this with cell A5. When working regularly within the SuperCalc<sup>2</sup> program, use whichever method is more convenient for you. Remember that since the cursor can only point to an individual cell, the **/B [CR]** method of the **/B** command will only affect an individual entry.

Enter **/B** again. Now in response to the prompt, "Enter range", specify A6 through A8 by typing **A6:A8**. Press **[CR]**. This is how we can specify a range of

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## LESSON

### LEARNING TO USE SUPERCALC<sup>2</sup>

#### Blanking, Protecting, Unprotecting, and Saving Your Work

cells for either a row or a column. The range that you designate will always include the end points.

	A	B	C	D	
1 Apples					
2	5				
3	8				
4					
5 <	>				
6					
7					
8					
9	12				
10					

#### *The Protect Command*

Re-enter the numbers we just blanked out. Create a new column of numbers in column B. Label it "Oranges". Enter those numbers in column B as shown in the diagram.

Now let's use /P to protect a cell. Enter /P. We use the *protect* command in the same way as the *blank* command. That is, enter a cell or a range. For example, enter A5. Press [CR]. Move the cursor to A5 and note that a "P" appears now next to the "Form" display on the status line. This indicator tells you that the Active Cell is "protected".

	A	B	C	D	
1 Apples		Oranges			
2	5	1			
3	8	2			
4	3	3			
5 <	1>	4			
6	4	5			
7	9	6			
8	6	7			
9	12	8			
10					

If your terminal provides half-intensity display, you will also see the protected cells at half intensity.

Let's continue by protecting a range of cells.

Type /P and enter A8:B8. Press [CR]. This will protect that portion of row 8.

What is the significance of what we have done?

Remember we said that /B could blank out an entire block of cells. Let's attempt to blank out that block of cells from row 2 through row 8 for both columns A and B. How do we specify this?

LEARNING TO USE SUPERCALC<sup>2</sup>

## Blanking, Protecting, Unprotecting, and Saving Your Work

Enter /B. Now enter A2:B8. (We define the range for a *Block* of cells as a diagonal, top leftmost cell followed by the lower rightmost cell in the block).

Now press [CR], and let's consider the results of our actions.

Row 1, with our titles, should remain because it lies outside the range of the block-definition we used with the *Blank* command. A5 and row 8 remain because they were protected. Row 9 remains, not because it was protected but because it, too, was beyond the range we blanked out.

Try to change the contents of A9. Now try the same thing with A5 or B8. Because these cells have been protected, they cannot be changed or blanked out. This feature can provide you with a large measure of safety when you are working around information that has taken you time to develop, and which you cannot afford to accidentally lose. However, blank cells within a protected range are not protected.

### ***The Unprotect Command***

The *unprotect* command (/U) can be used to unprotect cells, partial rows, partial columns, or blocks of cells. We could use the command twice to unprotect cell A5 and row 8, but can we do it with just one /U command?

Yes. *Unprotect* the "block", row 5 through 8 of columns A and B. What is the proper range specification? Did you say A5:B8? Correct.

### ***Formula and Numeric Display Options***

Move the Active Cell to A2. Enter 3+5. What happened? The value of the expression, 8, was placed in A2. If the spreadsheet cursor is not at A2, move it there and examine the status line. The rightmost display will read "Form=3+5", our original expression.

What has the SuperCalc<sup>2</sup> program actually stored, "3+5" or the "8"?

However complicated the expression is, the SuperCalc<sup>2</sup> program will calculate the result and display it. This allows us to use the entry line like a scratch pad. For instance, we may be adding two columns of numbers but only be interested in their total value.

Again at A3 enter 1+A2. The SuperCalc<sup>2</sup> program will recognize this as a formula referring to cell A2 and will quickly calculate and display the value based upon the value in A2. Further, if we change the contents of A2 — for instance, to "5" — we should observe that the new value of A3 will be recalculated as well. Try it!

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## LESSON

### LEARNING TO USE SUPERCALC<sup>2</sup>

#### Blanking, Protecting, Unprotecting, and Saving Your Work

Now move the Active Cell to A3. The screen displays "6" there, the current value, while the status line displays "Form=1+A2". The SuperCalc<sup>2</sup> program is keeping track of both. In A4, let's enter **A3\*.65**. (The "\*" means multiply and is equivalent to the "x" sign in conventional notation. Division is represented by "/".)

Locate the active cell at A10. Enter **SUM(A2:A9)**.

SUM is a built-in function. The SuperCalc<sup>2</sup> program provides many special built-in functions, including SQRT (square root), AVERAGE (arithmetic mean), NPV (net present value), IF conditionals, trigonometric functions, and many more. For SUM we can specify ranges (as we have done in this example) and cells, for example, "SUM(A8,B9:B12)". Now change the value of A9 to 5. Watch the sum be recalculated.

#### *The Global Command — Formatting Options*

Earlier we determined that the SuperCalc<sup>2</sup> program is keeping track of our formulas although it only displays their current values on the spreadsheet. How can we review all the original formulas more clearly? Enter **/G**.

Note that SuperCalc<sup>2</sup>'s interpretive prompting fills this out to read **/Global**. What could this conceivably mean? The prompt line now reads, "F(form.), N(ext), B(order), T(ab), R(ow), C(ol.), M(an.), A(uto)?" We could think of the **/G** command as a way to make overall or "global" changes to the spreadsheet, rather than specific or local changes. It is as if we had a map of California before us and we could, at will, transform it into a topographical map, a population density map, a tourist attraction map, etc.

Our concern here is with formulas, so enter **F** and see your formulas displayed.

I	A	B	C	D	I
1	Apples	Oranges			
2	5				
3	1+A2				
4	A3*.65				
5	11				
6					
7					
8	6	7			
9	5	8			
10	SUM(A2:A9)				
11	<	>			
12					

To return to the other style of display (cell values), simply repeat the sequence **/G,F**. The SuperCalc<sup>2</sup> program will alternate or flip-flop between the two display modes.

**LEARNING TO USE SUPERCALC<sup>2</sup>****Blanking, Protecting, Unprotecting, and Saving Your Work*****Determining Column Width***

Enter **9** in cell B10.

In formulas mode (/G,F), you will notice one problem. The SUM formula in A10 has two characters more than our column width, which is only 9. Let's widen the column to accommodate our entry.

Enter **/F** for **format**. The prompt line will respond with "Enter Level: G(lobal), Column, R(ow), E(ntry), or D(efine)". The "G" in this case is not the same as the **/G** command. Here it simply qualifies the **/F** command. But its meaning is similar; that is, "for all" or "every".

Now enter **G**. The prompt line now displays, "Define Formats: (I, G, E, \$, R, L, TR, TL, \*, U(1-8), H, D, column width)". As you can see, the **/F** command has many possible parameters; however, for now, let's enter a new column width by typing **12** and [CR]. Now move the cursor to column B and note the status line displays "12". Notice that we changed *all* columns to a width of 12 characters. We could have specified the new width for just a single column by **C** for column level, rather than **G** for global.

Now that we are using commands with several levels of prompts, it may be useful to point out another use for the left arrow key — one that you may have discovered for yourself already. Backspacing with the left arrow will always take us back to the prior "step" in a command, to a less completely specified statement.

For instance, enter **/Format, Global, 12** again. Now backspace once with the **left arrow** (or [CTRL-S]). Backspace again and see that the prompt changes to its earlier message: Enter level: G(lobal), Column, R(ow), E(ntry), or D(efine).

If we wished, we could then enter a level other than G(lobal), and continue on with the command sequence. Instead, let's backspace once more.

You will see the list of "/" command options on the prompt line. Backspace again. And now we have finally backed all the way to the original prompt.

Of course, no matter how far we have gone in specifying some command, range, or option, we can always use [CTRL-Z] to abort; simultaneously pressing the [CTRL] key and [Z] will return us to the original prompt. Now, if you are still in formulas mode, return to the display mode that displays cell values rather than formulas, **/Global, Formula**.

***The Save Command***

We will want to save the work we have done in this lesson so that we may use it later. We can do this with the **/S** command (Save). This command makes a copy of our entire spreadsheet and stores it on a diskette located on either drive A or drive B, depending on which we specify.

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## LESSON

### LEARNING TO USE SUPERCALC<sup>2</sup>

#### Blanking, Protecting, Unprotecting, and Saving Your Work

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Enter /S. The prompt requests, "Enter File Name". You can respond to this in one of several ways, depending on where you want to store your file. If you wish to save it on the disk on the system drive (the same disk that has the SuperCalc<sup>2</sup> program), enter WORK1 and [CR]. Or you can specify the drive to use by entering either A:WORK1, [CR] or B:WORK1, [CR]. Do not leave any blank spaces in your file name. The computer will not accept "TOM 1", but only "TOM1". (If you have more than two disk drives, you can specify C:WORK1 or D:WORK1, and so on.) If you are unsure what is meant by "system drive", review that material in "Getting Started".

After you have entered the file name, the prompt line inquires further, "A(lI), V(alues), or P(art)?"

Since we wish to save both our formulas and our values, enter A, for all. Your disk drive unit will whir and click contentedly for a few moments.

We will use this file to "load" our work back into the system when we resume with Lesson 4, so keep the disk handy. Now enter /Q and exit from the SuperCalc<sup>2</sup> program. All our work "disappears". It is gone irretrievably *unless* you specifically save it with the save command before exiting.

What have you learned in this lesson?

In this lesson you have learned:

- How to blank the contents of a cell or group of cells by using the /B command.
- How to protect and unprotect cells, using the /P and /U commands, and what protection does for a cell.
- That in an arithmetic expression, "\*" means multiply and "/" divide.
- That you can enter numerical expressions and formulas, that the SuperCalc<sup>2</sup> program will calculate and display the results, and that it will continue to recalculate as necessary.
- How to use the *global option* command, /G, to display formulas or their calculated values on the spreadsheet display.
- How to use the *format* command, /F, to change column display width.
- How to use the backspace (left arrow) key to return to an earlier step in a command sequence.
- How to create a file and save your work by using the /S command.

LEARNING TO USE SUPERCALC<sup>2</sup>

## Copy and Replicate

## LESSON 4

## Copy and Replicate

In Lesson 3, we began to see the power of the SuperCalc<sup>2</sup> program — in particular, its ability to recalculate automatically all values that depend upon the values in other cells. In this lesson we will gain even more insight into its versatility. You will learn to use the *load* command (/L), *copy* command (/C), *replicate* command (/R), and the current-cell key [ESC]. The /C, /R, and [ESC] commands are basically time saving commands.

***The Load Command***

We are going to continue using the spreadsheet we began to develop in Lesson 3. Let's retrieve the file we created at the end of that lesson. We will use the *load* command, /L, do this. (If the file is not on the disk that has the SuperCalc<sup>2</sup> program, be sure to insert the disk with the file into your other disk drive.)

Enter */Load*. How you respond to the prompt message, "Enter File Name, (or <RETURN> for Directory)" depends on where you have stored the file. To see the directory of your disk, press [CR] and the SuperCalc<sup>2</sup> program will give you three options:

C(hoose) alternate disk drive: to change your current disk (given at the top of the screen).

D(isk) Directory: to see the directory of your current disk.

S(uperCalc) format files only: to see the SuperCalc<sup>2</sup> files of your current disk.

E(nter) filename

Pressing E takes you out of this menu and back to where you left off. If your file is on the SuperCalc<sup>2</sup> disk, enter the file name without specifying the drive. So you enter **WORK1** and press [CR]. If the file is not on the system drive, you should designate the appropriate drive by entering **A:WORK1** or **B:WORK1** (depending on which disk your file is on), before pressing [CR].

The disk drive will respond with some clicking, and the prompt line will change to read, "A(l) or P(art)?"

Enter **A**, for "all", and the material we saved from our last effort will be copied from the disk and appear on the screen.

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## LESSON

LEARNING TO USE SUPERCALC<sup>2</sup>

## Copy and Replicate

*The Copy Command*

Now that we have restored our work from the previous lesson, let's investigate another command, *copy* (/C). The *copy* command is easy to use. You can copy a single cell, a partial row or partial column, or a block of cells.

In this first example, we will copy the data in column A into column C. Enter /C. The prompt line responds with, "From? (Enter Range)". In response, enter A1:A10, [CR]. This time the prompt asks, "To? (Enter Range)", then [CR] or [,] for Options". We just want a "standard" copy this time — we will look at 'options" later. So enter C1 and press [CR].

Now use the *copy* command to copy the contents of cell A10 to B10.

Change the display to show formulas by entering /Global, Formula and look at the contents of B10 and column C. The formulas have been adjusted automatically relative to the columns to which they were copied. All cell references have changed to reflect the new location of the formulas. If we had moved to a new row, as well as a new column, relative row designations also would have been adjusted.

	A	B	C
1	Apples	Oranges	Apples
2	5		5
3	1+A2		1+C2
4	A3*.65		C3+.65
5	11		11
6			
7			
8	6	7	6
9	5	8	5
10	SUM(A2:A9)	SUM(B2:B9)	SUM(C2:C9)
11			
12			

Generally, this automatic adjustment is exactly what we want. But there are other options open to us. For instance, we can specify that there be no adjustment or we can tell the SuperCalc<sup>2</sup> program to ask whether each occurrence of a cell reference should be adjusted or left alone. We will try this soon.

The *copy* command makes a one-to-one copy of its source material into a destination of the same type of size; cell to cell, row to row, or column to column. But suppose you want to repeat a series of values and formulas many times, perhaps to compare alternative cases.

*The Replicate Command*

You can use another very powerful command, *replicate* (/R), to do that. It will make a "one-to-many" copy of a cell, a partial row, or a partial column and will

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## LESSON

LEARNING TO USE SUPERCALC<sup>2</sup>

## Copy and Replicate

distribute these copies over a destination range that is larger than the source range. Make sure the display shows formulas.

Let's *replicate* a single cell, A10.

Enter **/R**. For "From", enter **A10, [CR]**. For "To?", enter the range D10 through F10, by typing **D10:F10** and **[CR]**. Note how the command performs.

	A	B	C	D	E	F	
1	Apples	Oranges	Apples				1
2	5		5				2
3	1+A2		1+C2	1+D2	1+E2	1+F2	3
4	A3*.65		C3*.65	D3*.65	E3*.65	F3*.65	4
5	11		11				5
6							6
7							7
8	6	7	6				8
9	5	8	5				9
10	SUM(A2:A9)	SUM(B2:B9)	SUM(C2:C9)	SUM(D2:D9)	SUM(E2:E9)	SUM(F2:F9)	10
11	A2+A2	A2+B2	A2+C2	A2+D2	A2+E2	A2+F2	11
12							12

Try replicating the partial column A3 through A4 into D3 through F3. These columns, D through F, now have data in rows 3, 4, and 10.

The *replicate* command has the same formula-adjustment options as the *copy* command. Let's try one of them now.

Enter into cell A12, the formula **A2+A2**.

Now enter **/Replicate, A12 [CR], B12:F12**. After you enter F12 enter a comma [,] instead of **[CR]** to get the options. They will be displayed on the prompt line:

"N(o Adjust.), A(sk for Adjust.), V(alue), +, -, \*, /".

Enter **A**. This option allows you to specify adjustment or non-adjustment to specific cells. Entering **N** for No adjustment will allow you to replicate a formula with no adjustment for the destination; and **V** for Values will only replicate the values of the formulas, not the formulas themselves.

The prompt changes to say:

Source cell A12, Adjust A2 (Y or N)?

and the first A2 is highlighted on the entry line.

Respond with **N**, for no adjustment. Now the second reference to A2 is highlighted on the entry line. Let's respond with **Y**. You see that the first part of our formula remained unchanged while the second was adjusted, according to

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## LESSON

LEARNING TO USE SUPERCALC<sup>2</sup>

## Copy and Replicate

our responses. In this way, we can specify one component of a cell to be held constant, while other components are adjusted relative to their new location.

A	B	C	D	E	F
Apples	Oranges	Apples-1	Apples-2	Apples-3	Apples-4
5	1	8	3	4	5
1+A2	2	1+C2	1+D2	1+E2	1+F2
A3*.65	3	C3*.65	D3*.65	E3*.65	F3*.65
11	4	11	6	7	8
4	5	4	10	11	12
9	6	9	13	14	15
6	7	6	1	2	3
7	8	7	4	5	6
SUM(A2:A9)	SUM(B2:B9)	SUM(C2:C9)	SUM(D2:D9)	SUM(E2:E9)	SUM(F2:F9)
A2+A2	A2+B2	A2+C2	A2+D2	A2+E2	A2+F2

Replicate cell A1 into the range D1 through F1, then use /Edit to edit the contents of C1 through F1 so they will be "Apples-1," "Apples-2" and so forth. Change C2 and then enter data as needed to make your spreadsheet look like the one above. You are going to save this spreadsheet and do more work with it later.

It's very important to save the work we have completed up to this point. We will use it again in Lesson 5. If you want to save it on the same disk as the SuperCalc<sup>2</sup> program, enter /S then WORK1 [CR], otherwise, specify the drive that has your destination disk. (If you want to jog your memory about the save command, try help (?), or look back at Lesson 3.)

To help protect your work, the SuperCalc<sup>2</sup> program checks to see if you already have a file with the same name on your destination disk. If you do, the SuperCalc<sup>2</sup> program prompts you with a "File already exists:" and offers three alternatives:

C(hange name), B(ackup), O(verwrite)?

If you no longer need the original version of the file then you would press the O. Otherwise press C to rename your file or use the Backup option which will change the existing file to:

filename.BAK

and automatically write your spreadsheet to disk under the specified filename. If there is a previous backup it will now be lost when you use the backup option. In this case, you can overwrite because you won't need the old "WORK1" file created in Lesson 3. The spreadsheet developed in this lesson is the one we will use later.

Try replicating a row, or rows, or a block. If a practical application of your own comes to mind, try to begin an example on the screen. If you want to save this

**LEARNING TO USE SUPERCALC<sup>2</sup>****Copy and Replicate**

first effort of your own, be sure to use a different name — for example, TRIAL or MYTRY. (Safety tip: It is a good idea to choose a name substantially different from WORK1, so that there is less chance of inadvertently overwriting the material you will need on this tutorial. "WORK2", for example, is so close that it might cause you some confusion.)

By now you have probably realized that the SuperCalc<sup>2</sup> program offers you a great many command options. This makes it a tremendously powerful and versatile tool. We will not discuss all the options in this tutorial section. Instead, we encourage you to investigate them on your own. You should find it easy to make the best possible use of the SuperCalc<sup>2</sup> program by combining what you learn here with information available in the reference section of this guide and through the *help* function, (?), built into the SuperCalc<sup>2</sup> program itself.

***The Current-Cell Key: ESCAPE Key***

This is a good time to become acquainted with the "current-cell" key. It can be used to boost the efficiency of certain kinds of data manipulation, which use the *copy* and *replicate* commands. The [ESC] key serves as the current-cell key.

Whenever a cell or range is required by the SuperCalc<sup>2</sup> program, the Active Cell coordinate will be placed on the entry line if we simply press the [ESC] key.

Let's set up an example and learn how to use this feature. Start with a fresh screen. After you have saved any work you want for later, use the *zap* command.

Enter **123** into A1. Use the *replicate* command to fill every cell on the visible screen with "123". Can you do this? Try it before looking ahead.

Here is how your entries should have looked. First, enter, **/Replicate, A1, B1:H1**. Then, **/Replicate, A1:H1,A2:A20**. Or, **/R, A1, A2:A20**. Then, **/R, A1:A20, B1:H1**. Now you should have "123" everywhere for the purposes of our example.

Enter **/B**, for *blank*. The SuperCalc<sup>2</sup> program now wants you to specify a cell or a range to be blanked. Let's start with a single cell.

Press the [ESC] key. The address of the Active Cell will appear on the entry line. Use the arrow keys to move the spreadsheet cursor to another location — for example, C11. Notice the Active Cell address on the entry line change as we go.

Now press [CR]. Observe. Notice that the latest Active Cell was blanked, and that the Active Cell location has returned to its original place. Again, enter **/Blank**, and press [ESC].

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## LESSON

LEARNING TO USE SUPERCALC<sup>2</sup>

## Copy and Replicate

Use the **arrow keys** to make cell C16 be the Active Cell. The entry line now reads **/Blank, C16**.

We can use this to begin a range specification. Just enter **[:]**. The line now reads **/Blank, C16:C16**. Now move the spreadsheet cursor to cell H16. Notice that the second address of our range is incremented as we go. Now press **[CR]**. The cells in the range C16 through H16 have been blanked.

I	A	B	C	D	E	F	G	H
1	123	123	123	123	123	123	123	123
2	123	123	123	123	123	123	123	123
3	123	123	123	123	123	123	123	123
4	123	123	123	123	123	123	123	123
5	123	123	123					
6	123	123	123					
7	123	123	123					
8	123	123	123					
9	123	123	123					
10	123	123	123					
11	123	123	123					
12	123	123	123					
13	123	123	123					
14	123	123	123					
15	123	123	123	123	123	123	123	123
16	123	123	123	123	123	123	123	123
17	123	123	123	123	123	123	123	123
18	123	123	123	123	123	123	123	123
19	123	123	123	123	123	123	123	123
20	123	123	123	123	123	123	123	123

In brief, this is what happens. Once we have set the **[ESC]** function, the arrow keys will temporarily move the spreadsheet cursor. As the location of the Active Cell changes, the cell location shown on the entry line will also change. Pressing the **[:]** locks in the Active Cell as the corner cell of a range or block. You can then use the arrow keys to move the spreadsheet cursor to specify the limit of the range. The **[ESC]** movement of the Active Cell is only temporary; when you terminate the **[ESC]** function, the Active Cell returns to its starting position.

Here is another sample. Enter **/Blank**. Press **[ESC]**. Move the spreadsheet cursor to D4, press **[:]** and move again to H14, press **[CR]**. We have blanked cells in the block from D4 to H14.

By using the **[ESC]** key and placing the Active Cell at the appropriate points, we can let the SuperCalc<sup>2</sup> program define our statements. At first, this may seem a little difficult, but with some practice, you will begin to find it increasingly useful. This feature allows us to modify our screen simply by pointing with the Active Cell to the boundary of the range of cells we wish to blank without our having to blank each cell individually.

Here are some examples you can try using *replicate* and **[ESC]**. Enter in E5, **"aac**. Enter **/Replicate**. Press **[ESC]**, place the Active Cell at E5, then press **[:]** or **[CR]**. Now press **[ESC]** again for the "To?" portion of our entry. Move the Active Cell to E6, enter **[:]**, and move the Active Cell to E13, then press **[CR]**.

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## LESSON

## Copy and Replicate

One more example. /Replicate, [ESC], move the Active Cell to E5, enter [:], move to E13, press [CR]. Press [ESC], move to G7, enter [:], move to J7, press [CR].

The [ESC] function can be used any time you can specify a cell or range on the entry line. Pressing any other keys besides [CR] and [ESC] will allow you to resume formula entry, but remain in [ESC] mode. When another arrow key is pressed the current cell is again placed on the entry line. Only [CR] and [ESC] will take you out of [ESC] and allow the use of your arrow keys for editing. You can use [ESC] in commands or with data. For example, you can use it to provide cell locations in formulas.

There is no need to save any of this work. At this point you may quit or continue on to Lesson 5.

What have you learned in this lesson?

- How to use the *load command* (/L), to bring a spreadsheet in the SuperCalc<sup>2</sup> program from a disk file and to view the directory of any disk.
- How to use the *copy command*, (/C).
- That the SuperCalc<sup>2</sup> program will adjust formulas automatically when data is moved to new locations — or that the program will let you specify whether to leave part or all of a formula unchanged.
- How to use the *replicate command*, (/R), to make a “one-to-many” copy of a cell, a partial row, or a partial column and to distribute the copies over a range.
- That you can use the [ESC] key to bring the Active Cell location to the entry line and can then change the location by using the arrow keys to move the spreadsheet cursor. You have also learned the special use of [:] with the [ESC] function.

# 5

## LESSON

### LEARNING TO USE SUPERCALC<sup>2</sup>

#### Move, Insert, Delete

## LESSON 5

### Move, Insert, Delete

You have learned to use the **Go To** command, the **[ESC]** key, and many important "/" commands. You can **Save** and **Load** your spreadsheet. Now we will introduce some new commands and techniques that can greatly simplify the development of a complex display.

If you are continuing directly on from Lesson 4, use the **zap** command so that you will begin with an empty spreadsheet. Otherwise, start up the SuperCalc<sup>2</sup> program.

We will continue to develop the spreadsheet that we saved in Lesson 4.

Use **/L** to *load* the file WORK1. (You can use **?** for help or check back to Lesson 4 if you want a refresher on how to use *load*.)

#### ***The Move Command***

Suppose Column B, labeled "Oranges", really belongs to the right of "Apples-4", at Column F. With what you know already, you could use **copy** to "move" it there and then use **blank** to erase Column B. But there is a better way.

Enter **/M** for *move*, and read the prompt, "R(ow) or Column)?"

Enter **C**, and the prompt changes to "From? Enter column range."

We want to move Column B, so enter **B [CR]**. The new prompt, "To?", asks where we want the material to go. Enter **F**, for Column F.

But isn't Column F already occupied?

Press **[CR]** and note what happens.

I	A	II	B	III	C	IV	D	V	E	VI	F	VII
1	Apples		Apples-1		Apples-2		Apples-3		Apples-4		Oranges	
2	5		8		3		4		5		1	
3	1+A2		1+B2		1+C2		1+D2		1+E2		2	
4	A3*.65		B3*.65		C3*.65		D3*.65		E3*.65		3	
5	11		11		6		7		8		4	
6	4		4		10		11		12		5	
7	9		9		13		14		15		6	
8	6		6		1		2		3		7	
9	7		7		4		5		6		8	
10	SUM (A2:A9)		SUM (B2:B9)		SUM (C2:C9)		SUM (D2:D9)		SUM (E2:E9)		SUM (F2:F9)	
11												
12	A2+A2		A2+B2		A2+C2		A2+D2		A2+E2		A2+F2	
13												

LEARNING TO USE SUPERCALC<sup>2</sup>

## Move, Insert, Delete

Our column has been moved and the formulas adjusted. The "gap", which we might have expected Column B to leave behind, had been filled. The SuperCalc<sup>2</sup> program moved our entries for former columns C through F one column to the left, in effect, vacating Column F and making it available to us. The program has neatly moved all the columns and adjusted all the formulas to reflect the new locations.

***The Insert and Delete Commands***

Here are two other complementary commands that can create or delete intermediate columns and rows. They are **/I** (insert) and **/D** (delete).

Let's insert a new row between rows 9 and 10.

Enter **/I**, followed by **R** for row. Respond to the next prompt by entering **10** [**CR**], and a "new" row appears.

Look at the formulas in row 11, and you will see they are unchanged. The SuperCalc<sup>2</sup> program has no way of knowing if you want to include the new row in the SUM equations — you would have to change them yourself.

Nevertheless, the SuperCalc<sup>2</sup> program does know something. Note first the range we have specified in our SUM formulas.

Now let's insert another row at 7. **/Insert, Row 7**.

Look at the SUM formulas in row 12. They have been adjusted, extended automatically from A2:A9 to A2:A10, because the row we just inserted fell within the range we had described. Your screen display should look like the one at the top of the next page.

Now enter **/D** and **R** (for row). For row number, enter **14** and [**CR**]. Row 14 is deleted. If we delete row 7, will the SUM formulas be adjusted back to A2:A9? Try it and see.

Let's delete a column, and try an experiment as well. Let's find out what happens to a value that depends on one that we delete. Enter into cell E9 the equation, **F2**. E9 will contain whatever value F2 contains. Change the display to show cell value (**/G,F**).

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## LESSON

LEARNING TO USE SUPERCALC<sup>2</sup>

## Move, Insert, Delete

	A	B	C	D	E	F	
1	Apples	Apples-1	Apples-2	Apples-3	Apples-4	Oranges	
2	5	8	3	4	5	1	
3	1+A2	1+B2	1+C2	1+D2	1+E2	2	
4	A3*.65	B3*.65	C3*.65	D3*.65	E3*.65	3	
5	11	11	6	7	8	4	
6	4	4	10	11	12	5	
7							
8	9	9	13	14	15	6	
9	6	6	1	2	3	7	
10	7	7	4	5	6	8	
11							
12	SUM(A2:A10)	SUM(B2:B10)	SUM(C2:C10)	SUM(D2:D10)	SUM(E2:E10)	SUM(F2:F10)	
13							
14	A2+A2	A2+B2	A2+C2	A2+D2	A2+E2	A2+F2	
15							

Now enter /Delete, Column, F, [CR]. The column entitled Oranges has been deleted. E9 displays "ERROR". The SuperCalc<sup>2</sup> program has no value to use in calculating the value of E9, and warns us of that with this message. Once a cell is in error, any reference to it will display a similar error message. As you see, the SUM value also indicates ERROR.

	A	B	C	D	E	F	
1	Apples	Apples-1	Apples-2	Apples-3	Apples-4		
2	5	8	3	4	5		
3	6	9	4	5	6		
4	3.9	5.85	2.6	3.25	3.9		
5	11	11	6	7	8		
6	4	4	10	11	12		
7	9	9	13	14	15		
8	6	6	1	2	3		
9	7	7	4	5	5		
10							
11	51.9	59.85	43.6	51.25	5	5	
12							

If cell E9 should, in fact, have "F2" in it, we could simply enter that formula again, and everything would be set right. Now put a number or F2 into E9, whichever you wish. Notice that the error display in the SUM value also goes away. It is replaced by the recalculated value.

If we delete row 10, will this affect our range specification for the SUM formulas in row 10? No, because row 10 is beyond the range. Delete row 10.

What will happen if we delete row 9? Try it.

LEARNING TO USE SUPERCALC<sup>2</sup>

## Move, Insert, Delete

It produced an ERROR in the SUM formula.

The general rule is to not delete either of the boundaries specified in a range like the one in our example. Our example was "SUM(A2:A9)". Deleting either A2 or A9 will cause an ERROR condition because the SuperCalc<sup>2</sup> program cannot guess your exact intentions. These warnings help us avoid inadvertently leaving references to nonexistent cells after a *delete* command.

Use the *blank* command to blank out the block from A7 to E9. Now reenter **SUM(A2:A6)** in A7, and then use *replicate* to place it in cells B7 through E7.

Use the */I*, the *insert* command, to create a new column at A for labels.

Now enter "**Variable A**" in Cell A2, "**Formula 1**" and "**Formula 2**" in A3 and A4, respectively. Enter "**Variable B**" and "**Variable C**" in A5 and A6, and "**Total**" in A7.

When you show formulas, your screen should look like this.

I	A	B	C	D	E	F
1						
2	Variable A	Apples	Apples-1	Apples-2	Apples-3	Apples-4
3	Formula 1	5	8	3	4	5
4	Formula 2	1+B2	1+C2	1+D2	1+E2	1+F2
5	Variable B	B3*.65	C3*.65	D3*.65	E3*.65	F3*.65
6	Variable C	11	11	6	7	8
7	Total	4	4	10	11	12
8		SUM(B2:B6)	SUM(C2:C6)	SUM(D2:D6)	SUM(E2:E6)	SUM(F2:F6)
9						

At this point, use **/S** to save your work. This time, let's call it "LESSON5." It will be used later.

Now that you have saved your work, let's try something new. We should start with a fresh spreadsheet, so use the *zap* command.

As we have seen, doing insertions and deletions at the boundaries of specified ranges creates problems. But because you will often want to add or delete from lists — including, naturally, the beginning or end of the list — here is a useful suggestion.

### Avoiding Errors

At B1 enter "**Title**". In cells B2 through B4, enter some numbers. At B5 enter "----". At B6 enter **SUM(B1:B5)**. Notice that our range specification includes our text line and the ledger line (----). This is harmless because, mathematically,

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LEARNING TO USE SUPERCALC<sup>2</sup>

## Move, Insert, Delete

"text" is regarded as having the value of zero and, therefore, has no effect on the calculation.

	A	B	C
1		Title	
2		3	
3		4	
4		5	
5		-----	
6		SUM (B1:B5)	
7			
8			
9			

Now you may insert or delete as you wish. Enter /Insert, Row, 5 [CR], and add the number 9. Now delete row 2, /Delete, Row, 2 [CR]. As you can see, you can add entries or remove entries without concerning yourself with the top and bottom of the column.

*Repeating Text*

By the way, here is an easy way to put in lines of repeating characters like the "----" you entered in cell B5. The SuperCalc<sup>2</sup> program has a function to repeat text. Go back to cell B5 and enter '-' and press [CR].

As you see, the single quote ('') causes the display of "-" to be repeated to fill the cell display, and in fact to continue displaying to the right until it meets a non-blank cell. Not bad for three keystrokes. Take a look at the contents of cell B5. As you see, they are what you typed in.

Experiment with this one a bit. Find some open space and try:

- '123 and press [CR].
- 'abcd and press [CR].
- '\* and press [CR].
- ' \* and press [CR].

And so on. Try your name...

*Unavailable Data*

Sometimes you may be working on a complex spreadsheet with many values which are functions of other values. Because your data may be incomplete, you may mistakenly view some totals or values as significant when in fact they are not yet complete.

Here is what you can do in such cases. Using the example we started above, now enter NA [CR] into cell B3, for instance. This tells the SuperCalc<sup>2</sup> program

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Move, Insert, Delete

that you intend to have a value here at some future time so the value of the cell should be considered as "Not Available" rather than zero. You will see that as soon as we enter **NA [CR]**, cell B6 is also flagged and displays N/A when values are shown, or NA as formulas.

	A	B	C
1		Title	
2		4	
3		N/A	
4		9	
5		-----	
6		N/A	
7			
8			
9			

NA and ERROR behave identically; the difference is the display: "N/A" or "ERROR". By using NA, you inform yourself of the ramifications of any incompleteness or oversights.

You may either *quit* here or continue on to Lesson 6.

What have you learned in this lesson?

In this lesson you have learned:

- How to use the *move, insert, delete* commands. (**/M, /I, /D**).
- That those commands automatically adjust your formulas to fit the new spreadsheet.
- That when you delete cells which are referred to by formulas elsewhere, you get error messages. You learned how to fix that error.
- How to use '[' to repeat the display of one or more characters.
- How to use **NA** to make sure that you do not forget to enter important information.

# 6

## LESSON

### LEARNING TO USE SUPERCALC<sup>2</sup>

#### Format

## LESSON 6

### Format

By now you have learned many of the basics that you need in order to use the SuperCalc<sup>2</sup> program. You may remember that when we introduced the *format* command, /F, in Lesson 3, we used it to change the display width of all the columns on the spreadsheet. But the prompt line indicated that there were a number of other options available to us with this command. In this lesson, we will examine these options more closely.

We will use the spreadsheet that we have been developing in previous lessons. It is the one you saved under the name "LESSON5" in the last lesson.

If you are continuing directly on from Lesson 5, use /Z now, so that you will have a fresh start. Otherwise, bring up the SuperCalc<sup>2</sup> program.

Now *load* the file, LESSON5.

#### *Integer Format*

Look at your spreadsheet. Is it displaying formulas? We will want to look at cell *values*, not formulas, in this example. Use the *global options* command, /G, if you need to change the display.

Change cell B5 to 11.4.

Enter /F, and note the prompt line: "G(lobal), Column), R(ow), E(ntry) or D(efine)." This means we can specify whether our format change will affect all cells, a column only, a row only, a cell, or a range of cells.

Let's enter C for column. The prompt line now asks what column we want to affect. Enter the column letter, in this case, B. Press [CR].

Now the prompt gives us a variety of options:

Define Formats: (I,G,E,\$,R,L,TR,TL,\*U(1-8),H,D, column width).

Enter I for *integer* format. Press [CR]. Look at the entries on the display, and see what happened to the value in B4, B5 and B7.

Only the integer portion of the values is displayed. The integer format will display the numbers in the range given, rounded to the nearest whole number.

Note: The *integer* format is not to be confused with the INT function. The values in cells with the *integer* display format set are not changed in any way. Errors are likely to occur in subsequent real equations

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## LESSON

## Format

LEARNING TO USE SUPERCALC<sup>2</sup>

because the actual values will not reflect the displayed values. The formulas will take into consideration any fractional values not shown. This is also true when using the \$ display format.

A	B	C	D	E	F
	Apples	Apples-1	Apples-2	Apples-3	Apples-4
2 Variable A	5	8	3	4	5
3 Formula 1	6	9	4	5	6
4 Formula 2	3.9	5.85	2.6	3.25	3.9
5 Variable B	11.4	11	6	7	8
6 Variable C	4	4	10	11	12
7 Total	30.3	37.85	25.6	30.25	34.9
8					
9					

Until now we have always used the SuperCalc<sup>2</sup> program's standard or "default" display format to display numbers. That is the "G" or *general* format. We have seen that with general format, numbers too large to display in ordinary notation will be converted to scientific or exponential notation automatically. In *integer* format, numbers too large to display will appear as a series of >>>>s at the cell location. (In fact, whatever the format, >>>>s will be displayed whenever a number cannot be shown. The SuperCalc<sup>2</sup> program will round off as necessary, even if it can only display one significant digit, the E, and the exponent.)

Enter 123456789 at cell B5.

Now reduce the display width to 8. Do you remember how? /F, G, 8.

A	B	C	D	E	F	G	H	I
	Apples	Apples-1	Apples-2	Apples-3	Apples-4			
2 Variable	5	8	3	4	5			
3 Formula	6	9	4	5	6			
4 Formula	4	5.85	2.6	3.25	3.9			
5 Variable >>>>		11	6	7	8			
6 Variable	4	4	10	11	12			
7 Total	>>>>	37.85	25.6	30.25	34.9			
8								
9								

Notice the >>>>. Now change the column widths back to 12.

Again enter, /Format, Column, B, [CR]. This time specify G, for *general* format, and [CR]. Notice that the fractional portion of our data values has been restored.

A	B	C	D	E	F
	Apples	Apples-1	Apples-2	Apples-3	Apples-4
2 Variable A	5e0	8	3	4	5
3 Formula 1	6e0	9	4	5	6
4 Formula 2	3.9e0	5.85	2.6	3.25	3.9
5 Variable B	1.2345679e8	11	6	7	8
6 Variable C	4e0	4	10	11	12
7 Total	1.2345681e8	37.85	25.6	30.25	34.9
8					
9					

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LEARNING TO USE SUPERCALC<sup>2</sup>

## Format

***Exponential Notation***

For scientific or exponential notation, enter /Format, Column, **B**, [CR], Exponent, [CR]. This format displays numbers as a power of 10. For example, 1776 is 1.776e3, or  $1.776 \times 10^3$ ; 1,000,000 is 1.0e6, or  $1.0 \times 10^6$ .

Look at your spreadsheet. As you can see, the SuperCalc<sup>2</sup> program converted all our data to this format. If the data does not look familiar to you, you may wish to experiment a bit. Enter some ordinary numbers in this column in row 9 or 10, and watch how the program displays them. See Lesson 2 if you need more explanation on exponential notation.

***\$ Format***

The next format option may be more familiar to you. Enter /Format, Global, **\$**, [CR]. The dollars and cents format comes into view. Numbers will be rounded to the nearest cent. (Note that the SuperCalc<sup>2</sup> program adds the ".00" to whole numbers, but does not insert a "\$").

	A	B	C	D	E	F	I
1		Apples	Apples-1	Apples-2	Apples-3	Apples-4	
2	Variable A	5e0	8.00	3.00	4.00	5.00	
3	Formula 1	6e0	9.00	4.00	5.00	6.00	
4	Formula 2	3.9e0	5.85	2.60	3.25	3.90	
5	Variable B	1.2345679e8	11.00	6.00	7.00	8.00	
6	Variable C	4e0	4.00	10.00	11.00	12.00	
7	Total	1.2345681e8	37.85	25.60	30.25	34.90	
8							
9							

***Individual and Global Format Changes***

Let's change the format for a single cell. Move the spreadsheet cursor to C6, making that the Active Cell.

Enter /Format, Entry. Notice that the prompt line reads, "Enter range".

We could specify a range of cells — that is, a partial row or a partial column — at this point. Or we could specify a single cell. Let's change the format of C6, the Active Cell. Of course, you could type "C6" on the entry line. Instead, press [,] or [CR] and see what happens.

The SuperCalc<sup>2</sup> program automatically added C6, the Active Cell, to the entry line. Now enter **E** for Exponent and press [CR]. Note the change on your spreadsheet from "4.00" to "4e0".

Now suppose we wished to convert all the display back to the "general" format. Could we make a "global" change? Let's try it. Enter /Format, Global, General [CR].

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## LESSON

## Format

	A	B	C	D	E	F
1	Apples	Apples-1	Apples-2	Apples-3	Apples-4	
2	Variable A	5e0	8.00	3.00	4.00	5.00
3	Formula 1	6e0	9.00	4.00	5.00	6.00
4	Formula 2	3.9e0	5.85	2.60	3.25	3.90
5	Variable B	1.2345679e8	11.00	6.00	7.00	8.00
6	Variable C	4e0	4e0	10.00	11.00	12.00
7	Total	1.2345681e8	37.85	25.60	30.25	34.90
8						
9						

Well, everything has changed, except those cells where we have been changing formats. Why? The SuperCalc<sup>2</sup> program will change all the formats when "Global" is indicated — except those that you have specified by the Column, Row, or Entry options. It leaves these untouched, because you set them individually.

What can we do so that "global" changes will include any column, row, or cell that was formatted individually? Column B, for example? If you said we must "undo" the individual format, you were right.

Position the Active Cell to column B. Enter /Format, Column, [CR]. Now enter D, for default, and press [CR]. Notice that column B has changed to *general* format.

When a *format* setting that refers to a column or row is defaulted, it changes back to whatever format operates on the next level. An entry level format, entered as a cell or a range of cells, is the "highest" level. The next levels, in order, are row, column, and finally the global formats. In this case, the column defaulted to the existing global format because there was no intervening row format.

See if you can "default" the format on C6.

### Display Format: Justification

Enter /Format, Row, 1, [CR]. You will see these options ("...R,L,TR,TL...") on the prompt line. They allow us to change the setting of right or left justification. The standard or "default" values are left-justified text and right-justified numbers. Let's shift the text on row 1 so that all text entries are right justified. Can you do it? Of course you can. TR stands for "Text Right".

	A	B	C	D	E	F
1	Apples	Apples-1	Apples-2	Apples-3	Apples-4	
2	Variable A	5e0	8	3	4	5
3	Formula 1	6e0	9	4	5	6
4	Formula 2	3.9e0	5.85	2.6	3.25	3.9
5	Variable B	1.2345679e8	11	6	7	8
6	Variable C	4e0	4e0	10	11	12
7	Total	1.2345681e8	37.85	25.6	30.25	34.9
8						
9						

# 6

## LESSON

### LEARNING TO USE SUPERCALC<sup>2</sup>

#### Format

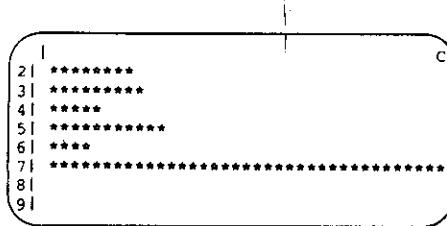
Now that you have done that, let's try another one.

Enter **/Format, Global, L, [CR]**. All numbers will now be justified to the left.

Format entries may be entered in combination; for example, **/F,G,R,\$**. Try this one, and you will see the numbers right-justified in dollars and cents format.

#### *Graphic Display*

We have one more *format* option to try: "graphic" display. Place the Active Cell at C2. Enter = [CR] to put C2 at the upper left of our screen. Enter **/Format, Global**. Enter the \* to specify graphic format. We will also need some display space, so enter **75** as our column width. Press **[CR]**. If your values in column C are less than 75, you will see them represented by bar graphs composed of asterisks. Values greater than 75 will fill the column and the screen width; you cannot tell if they are 75 or larger.



It is possible, however, to make the column display wider than the screen. The display area for your spreadsheet is 75 characters wide. You can specify a column width of up to 127 characters. You won't be able to see the whole line, however, on your screen. You can see only the first 75 characters, unless you output your spreadsheet to the printer. (**/Output** will be discussed later in Lesson 9.)

This was a very brief look at the *graphic* format option. In practice, you will want to make the graphic display fit within a column width of convenient size and still give a comparison of values. In Lesson 8, we will find out how to do this by "scaling" the values in order to fit them within the column.

There is no need to save our work from this lesson. But remember we will use the file LESSON5 again, so do not overwrite it.

# 6

## LESSON

Format

### LEARNING TO USE SUPERCALC<sup>2</sup>

Now you may either *quit* or continue on to Lesson 7, as you wish.

What have you learned in this lesson?

In this lesson you have learned:

- That formats can be entered globally, by column, row or cell (including a range of cells).
- The Integer, General, Exponential, and \$ formats of display.
- How to change individual column widths.
- How to *default* formats.
- How to alter justification for text or numbers.
- How to transform numerical values into graphic display.

## **LESSON 7**

### **Title Lock and Window (Split Screen)**

You now know enough about the SuperCalc<sup>2</sup> program and its many commands to put it to practical use. You have used the different *format* options. This lesson adds two more commands to your store of tools.

One of them, *title lock*, is useful if you want to keep a portion of the spreadsheet locked in place while you scroll the rest of the screen. Although it is called 'title lock' because locking titles can be especially useful, any part of the screen can be locked. The other command, *window*, lets you "split" your screen and look at different parts of your spreadsheet at the same time. Let's try them now.

#### ***Title Lock***

First, of course, start the SuperCalc<sup>2</sup> program, if it is not already running. Or, if you are continuing directly on from Lesson 6, zap the screen so that you will have a fresh spreadsheet.

Now *load* the file that we saved under the name LESSON5. What can *title lock* do for us? Place the Active Cell at A1. Enter /T. The prompt line asks, "H(oriz), V(ert), B(oth), or C(lear)?". The SuperCalc<sup>2</sup> program wants to know which titles you want locked in place.

Press **V**, for vertical titles.

Now scroll the screen so as to move off the screen to the right. You will see that the titles at the left of our screen are "locked" in place, while the rest of the screen scrolls as usual. The position of the Active Cell when you enter the T command determines how much of the screen will be locked in place.

Go back to A1 by using the [=] command. Use the H option to lock the top row of titles in place.

Move the spreadsheet cursor down the screen, and watch the information scroll up while the row 1 titles stay in place. Now, go back to A1 by using the [=] command.

Now let's clear the locked row. Enter /T. Then enter C, for "Clear". We are telling the SuperCalc<sup>2</sup> program that we do not want anything locked. Use the /I command to insert a new row 1 for an additional title.

## LEARNING TO USE SUPERCALC<sup>2</sup>

### LESSON

#### Title Lock and Window (Split Screen)

	A	B	C	D	E	F
Sample Spreadsheet						
3 Variable A	5	Apples	Apples-1	Apples-2	Apples-3	Apples-4
4 Formula 1	1+B3	1+C3	1+D3	1+E3	1+F3	
5 Formula 2	B4*.65	C4*.65	D4*.65	E4*.65	F4*.65	
6 Variable B	11	11	6	7	8	
7 Variable C	4	4	10	11	12	
8 Total	SUM(B3:B7)	SUM(C3:C7)	SUM(D3:D7)	SUM(E3:E7)	SUM(F3:F7)	
9						

At C1, enter "Sample Spreadsheet".

This time let's lock both the horizontal and vertical titles with one command. Position the Active Cell at A2. Enter /T. Enter B, for "Both". This locks column A and rows 1 and 2.

Move the spreadsheet cursor down and to the right to make the display scroll both up and to the left. Note that rows 1 and 2 and column A stay in place.

#### Window — Split Screen

What if you want to view two widely separated areas of your spreadsheet at the same time? The *window* command will allow you to do this. We will use one of the sample programs on your SuperCalc<sup>2</sup> program disk to demonstrate *window*. But we will need to have a new spreadsheet.

Use the *zap* command to clear everything.

Now let's load that sample program. Use /L and enter the file name, **SAMPLE**. SAMPLE is a complete sample SuperCalc<sup>2</sup> spreadsheet. We will study it more closely later. For now, just scroll to column N, and notice that we have columns representing months and total column for the year.

Go back to A1, and scroll down to row 20 to see "Net Income". Go back to A1. Now move the Active Cell to column D. This will designate where we wish to "split" the screen.

Enter /W, for *window*. The prompt reads, "H(oriz), V(ert), C(lear), S(ync), or U(nsynch)". We are going to split the screen vertically into two separate display windows, so enter V.

Notice that now, starting at column D, there is a second set of row numbers. This is the left-hand border of our new display. You should realize that the spreadsheet itself has not been split. We have simply created two display windows through which to view it. Either window may now be scrolled independently.

## LESSON

### LEARNING TO USE SUPERCALC<sup>2</sup>

#### Title Lock and Window (Split Screen)

```
| A || B || C || D || E || F |
1 THIS IS A SAMPLE SPREADSHEET | 1 |
2 | 2 |
3 | JAN FEB MAR APR MAY
4 NET SALES 1000 1100 1210 1331 1464
5 | 5 |
6 COST OF GOODS SOLD 300 330 363 399 439
7 |-----| 7 |
8 GROSS PROFIT 700 770 847 932 1025
9 | 9 |
10 RESEARCH & DEVELOPMENT 160 176 194 213 234
11 MARKETING 200 224 251 281 315
12 ADMINISTRATIVE 140 151 163 176 190
13 |-----| 13 |
14 TOTAL OPERATING EXPENSES 500 551 608 670 739
15 | 15 |
16 INCOME BEFORE TAXES 200 219 239 261 285
17 | 17 |
18 INCOME TAXES 80 88 96 105 114
19 |-----| 19 |
20 Net Income 120 131 144 157 171
> D3 P Text='MAR'
Width: 9 Memory: 25 Last Col/Row: N20 ? for HELP
1>
```

Scroll the display and notice that the left-hand window remains still.

Now press the [;] key. This will transfer us to the "other" window. Regardless of which window we are working in at a given moment, the [;] key will serve to move us over to the other.

Instead of splitting our screen vertically into a right and a left half, we could split it horizontally. However, before we can split the display horizontally, we must return to a single window display by pressing /Window, and Clear. Then set the Active Cell at the point at which you wish to split the screen horizontally. For our example, move the Active Cell to row 15 and then enter /Window, Horizontal. This leaves us on the lower screen.

```
| D || E || F || G || H || I || J || K |
1 |
2 |
3 MAR APR MAY JUN JUL AUG SEPT OCT
4 1210 1331 1464 1611 1772 1949 2144 2358
5 |
6 363 399 439 483 531 585 643 707
7 |-----| 7 |
8 847 932 1025 1127 1240 1364 1501 1651
9 |
10 194 213 234 258 283 312 343 377
11 251 281 315 352 395 442 495 555
12 163 176 190 206 222 240 259 280
13 |-----| 13 |
14 608 670 739 816 900 994 1097 1212
| A || B || C || D || E || F |
15 |
16 INCOME BEFORE TAXES 200 219 239 261 285
17 |
18 INCOME TAXES 80 88 96 105 114
19 |-----| 19 |
> K1
Width: 9 Memory: 25 Last Col/Row: N20 ? for HELP
1>
```

## LEARNING TO USE SUPERCALC<sup>2</sup>

### LESSON

#### Title Lock and Window (Split Screen)

Scroll down so we can see Net Income. Press [;]. Move the cursor to B4 and change the value. Watch as recalculation takes place. Within seconds you will see the Net Income change in the lower window.

When you wish to remove the split screen, enter /W and then C for clear split.

The S option indicates to the SuperCalc<sup>2</sup> program that we wish to scroll both windows in a "synchronized" fashion. That is, we want them to scroll simultaneously. Let's try it.

Split the screen vertically at D again, but now enter /W, Synchronous. Now scroll the displays together by moving the spreadsheet cursor parallel to the split. To "unsynchronize" the displays so that only one window will scroll at a time, enter /Window, Unsynchronous.

With split screen in effect, each window has its own "global" identity for both the *global options* and *format* commands. For instance, we could specify formula display in one window and cell value display in the other. Similarly, we could use *format* to specify General format in one window and Integer in the other. We could even look at the same data, if we wished, in two different formats at once.

Scroll both displays to show January through April. Now change to display formulas for one side of the screen. Enter /W,S. Now you can scroll through the data in one window and compare it to the formulas as you go.

The *window* and *title lock* affect the way our spreadsheet is displayed. The effect is temporary and may always be reversed. When you *save* your spreadsheet to a disk, the *title lock* and "split screen" information is included; When you *load* your work back to the screen, it will look exactly as it did before.

If you want to take a break now, use *quit* to exit from the SuperCalc<sup>2</sup> program.

What have you learned in this lesson?

In this lesson you have learned:

- How to lock any number of rows or columns in place so that they will remain in place while the rest of the screen scrolls.
- How to split the screen, either horizontally or vertically, into two windows and how to move back and forth from one "window" to the other.
- How to "synchronize" the windows.
- That you can specify different global display options (cell values or formulas) and Global level format options for each window.

# 8

## LESSON

### LEARNING TO USE SUPERCALC<sup>2</sup>

#### Graphic Format Option & Recalculation Options

## LESSON 8

### Graphic Format Option & Recalculation Options

In this lesson we will look more closely at some of the options available with two of the SuperCalc<sup>2</sup> program's most powerful commands, *format* and *global options*. By now you have enough experience to appreciate what they can do for you. We will need to start with a fresh screen — so use *zap* if you are continuing directly from Lesson 7.

We touched briefly on graphic representation of data in Lesson 6 and promised that you would learn more about it. Now it's time to work a bit with it, so that you will feel confident to try it with your own data. Let's enter some numbers in column A, from row 1 to row 20; use numbers between 1 and 50.

I	A	B	C
1	45		
2	3		
3	12		
4	50		
5	23		
6	13		
7	8		
8	31		
9	29		
10	6		
11	43		
12	21		
13	9		
14	17		
15	25		
16	36		
17	48		
18	23		
19	7		
20	41		

Now enter /Format, Column, A, [CR], \*, 50, [CR].

We have done two things — we have changed to graphic display, and we have increased the width of column A to 50, in order to accommodate our largest number.

Suppose we wish to have the number itself displayed as well. Try this: Enter /Format, Column, A, [CR], Default, [CR] to bring column A back to the default format. Enter /Global, Formulas to show formulas. Enter at B1, the "formula," A1. Enter /Replicate, B1, [CR] B2:B20 [CR].

## 8

## LESSON

LEARNING TO USE SUPERCALC<sup>2</sup>

## Graphic Format Option &amp; Recalculation Options

	A	B	C
1	45	A1	
2	3	A2	
3	12	A3	
4	50	A4	
5	23	A5	
6	13	A6	
7	8	A7	
8	31	A8	
9	29	A9	
10	6	A10	
11	43	A11	
12	21	A12	
13	9	A13	
14	17	A14	
15	25	A15	
16	36	A16	
17	48	A17	
18	23	A18	
19	7	A19	
20	41	A20	

Enter /Format, Column, B [CR],\*,50,[CR]. Enter /Global, Formulas.

Now we have a one-to-one graphic display. But what if the values we wish to display are as large as 600 or 1000? Let's put a "scaling" formula into column B, so our largest value will be equal to the column width. You may remember from Lesson 6 that we could make column B longer-up to 127 characters-but it would be difficult to view beyond the screen width, so we will leave it at 50 characters.

If we divide any value in Column A by the maximum value within our sample from A1 to A20, the result will express its size (relative to the maximum). And since our maximum, whatever it is, will be represented by 50 characters (\*) of display, we can multiply the size by 50 to determine our "scaled" value.

Now we have an opportunity to use another built-in function: MAX. The value of MAX will be the largest value within the specified range or list. We will use MAX to scale our graphic displays so that they are relative to the maximum value. Our formula will look like this: A1\*50/MAX(A1:A20).

Enter /G,F. Enter A1\*50/MAX(A1:A20) at B1. Now we will use one of the replicate options. Enter /R, B1,[CR]B2:B20 and the [,] for options. Enter A, for "A(sk for Adjust)". Respond Y for "yes" for the first A1, then N for "no" for the other two values in the formula.

Your formulas should look like the example.

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## LESSON

LEARNING TO USE SUPERCALC<sup>2</sup>

## Graphic Format Option &amp; Recalculation Options

I	A	B	I
1	45	A1*50/MAX(A1:A20)	
2	3	A2*50/MAX(A1:A20)	
3	12	A3*50/MAX(A1:A20)	
4	50	A4*50/MAX(A1:A20)	
5	23	A5*50/MAX(A1:A20)	
6	13	A6*50/MAX(A1:A20)	
7	8	A7*50/MAX(A1:A20)	
I	A	B	I
1	45	*****	
2	3	***	
3	12	*****	
4	50	*****	
5	23	*****	
6	13	*****	
7	8	*****	
8	31	*****	

Enter /G,F to return to the graphic display. Our graph looks the same but now change the value in any cell to, say, 75. Notice that all the other lines are "scaled", relative to 75. Enter 150.

You may wish to save this example for your own use later. Use save and call the file GRAPH or something easy to remember.

Now let's change our formula to scale from the minimum to the maximum value in A1 through A20. Go to B1 and use edit. We will insert new information into the formulas:

**(A1-MIN(A1:A20))\*50/(MAX(A1:A20)-MIN(A1:A20))**

Move the cursor to the beginning of the line, not too far, and insert a space and a "(" before the "A1". Move right to the ")" and insert 13 spaces before it. Then replace the blanks with **-MIN(A1:A20)**. Move to the next "M" and insert "(" before it. Then go to the end of the line and insert **-MIN(A1:A20)**. Then press [CR].

Replicate it for B2 through B20, using the *adjust* option. Be careful to adjust only the first cell reference. Enter /Replicate, **B1, B2:B20, A, Y, N, N, N, N, N, N**.

Enter /G,F. Notice how the results of the formula below differ from those of our first formula. Try different values to test and verify your work.

I	A	B	C	D	E	F	G	I
1	45	(A1-MIN(A1:A20))*50/(MAX(A1:A20)-MIN(A1:A20))						
2	3	(A2-MIN(A1:A20))*50/(MAX(A1:A20)-MIN(A1:A20))						
3	12	(A3-MIN(A1:A20))*50/(MAX(A1:A20)-MIN(A1:A20))						
4	50	(A4-MIN(A1:A20))*50/(MAX(A1:A20)-MIN(A1:A20))						
5	23	(A5-MIN(A1:A20))*50/(MAX(A1:A20)-MIN(A1:A20))						
6	13	(A6-MIN(A1:A20))*50/(MAX(A1:A20)-MIN(A1:A20))						
7	8	(A7-MIN(A1:A20))*50/(MAX(A1:A20)-MIN(A1:A20))						
I	A	B						
1	45	*****						
2	3	***						
3	12	*****						
4	50	*****						
5	23	*****						
6	13	*****						
7	8	****						

**LEARNING TO USE SUPERCALC<sup>2</sup>****Graphic Format Option & Recalculation Options*****Recalculation Options***

We can suspend the automatic recalculation by specifying *manual* in the Global options. Enter /Global, then **M** for *Manual*. Now try entering new numbers for the graph.

If you enter a new value in column A, notice that the program takes considerable time to go through all the necessary recalculation of formulas. It may take even longer with a larger spreadsheet, because the SuperCalc<sup>2</sup> program recalculates automatically every time we enter a new value.

As you can see, the time required for their entry is greatly reduced.

This is fine, but what does "manual" recalculation mean? Certainly, we don't do it ourselves with pencil and paper. How can we get the SuperCalc<sup>2</sup> program to do it? By now you have used almost every option offered. You may have wondered what the [!] is for.

Besides its usual exclamatory function in text, [!] has a very special meaning to the SuperCalc<sup>2</sup> program: Pressing [!] "forces" a recalculation.

Try pressing [!].

Manual mode allows you to make periodic recalculations at your convenience. This is helpful in decreasing time and delays and increasing accuracy when you're doing complicated or cumulative operations. When you wish to reestablish automatic recalculation, enter /G,A for "automatic."

***Order of Recalculation***

When the SuperCalc<sup>2</sup> program recalculates, it does so in a certain order. You can change that order. Usually, the order of calculation will not affect the results of your recalculations, and you can ignore it. But there are times when it can make a difference. Let's explore this problem.

First, use **zap** to get a fresh spreadsheet.

Enter **4** into cell A1, **6** into A2, and **SUM(A1:A2)** in A3. Now enter **A3** into B1.

Look at the values. Everything seems fine. A3 and B1 both display 10. Now change the value in A1 to **3**.

Observe that B1 does not yet contain the 9, which is the new result in A3. Why?

The SuperCalc<sup>2</sup> program recalculates row by row. First row 1, then row 2, then 3, and so forth. Obviously, A3 was still 10 when B1 referenced its value during recalculation.

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## LESSON

### LEARNING TO USE SUPERCALC<sup>2</sup>

#### Graphic Format Option & Recalculation Options

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Now enter **/G**. The prompt line now says, "F(orm), N(ext), B(order), T(ab), R(ow), C(ol), M(an), A(uto)?"

We have just determined that in our example recalculation should proceed column by column, so let's enter **C**. This will change the order of recalculation.

Enter **5** in **A1**. And now everything seems to work, because the SuperCalc<sup>2</sup> program is proceeding down columns as it recalculates. Both **A3** and **B1** display **11**.

It is possible to create a situation where neither order of calculation can give us current values in all cells.

Here is an example. First, zap the spreadsheet.

Enter **5** in cell **A1**. In **C1**, enter **A1**. In **A3**, enter **A1**. Now go to **B2** and enter **C1+A3**. You can see a problem coming up, can't you?

Of course, at the moment all looks fine — **C1** and **A3** display **5**, **B2** displays **10**. Now go to **A1**, and enter **4**.

Cells **C2** and **A3** display **4**, which is correct. But **B2** has **9**. When it was calculated, one of the cells was **4**, the other was **5**.

Change the order and try again. **/G,C**. Then enter **6** in **A1**. **C1** and **A3** show **6**, but **B2** shows **10**. When it was calculated, one cell had **6** and the other had the leftover **4**.

Press **[!]**. Now **B2** has **12**, the correct value. You have forced a second recalculation and have the correct value.

This example is unrealistic and improbable. Still you should be aware that it is possible to create situations involving out-of-order references, which give misleading values.

In a case like this one, we can press **[!]** and cause a second recalculation, which gives us the correct values. (You see that you can use **[!]** in automatic mode as well as in manual mode. Generally, of course, you don't need to).

Cases of out-of-order references like this one are called "forward" references, because the reference is "forward" to a value not yet recalculated. They can occur in actual spreadsheets, perhaps because a spreadsheet is especially complex or because it has been amended or changed in ways very different from its original design.

A real-life example of forward reference might happen like this. You build a spreadsheet with a table of expenditures by category (columns) and locations (row). You SUM the rows and columns to get totals.

**LEARNING TO USE SUPERCALC<sup>2</sup>****Graphic Format Option & Recalculation Options**

Everything works fine. Later, you add a table comparing various category and location totals. Everything still works fine, because you know where the second table should be. Then, someone else adds new material to the spreadsheet, and moves one of your tables to a new location. . . Now the comparison table shows incorrect values, but they might seem reasonable.

One way to check for such cases is to press [!] and see if any value changes. If so, it is time to re-do the spreadsheet.

The "circular" reference is another case that you will certainly want to avoid. Here is an example:

First *zap* the spreadsheet. Now in cell A1, enter  $1+B1$ . It shows as 1, since there is nothing in B1. In cell B1, enter  $1+A1$ . Suddenly you have 3 and 4. Got the idea? Press [!] a few times, and watch the values increase. They will never stop changing, because there is no logical place to stop calculating.

You might like to experiment by making up some forward or circular references and trying them out.

When you wish, you can *quit* — or you can *zap* these offending formulas into the oblivion they deserve, and go on to the next lesson.

What have you learned in this lesson?

In this lesson, you have learned:

- How to make practical use of the \* *format* option for the graphic display of data by scaling values to fit the display width.
- The difference between the "manual" calculation option and automatic recalculation.
- That the [!] key causes a recalculation to occur when you press it.
- What order of calculation means, and how to change it by using the *global options* command.
- What a forward reference is, and how to use [!] to get the correct value for such a case.
- What a circular reference is, and that there is no correct value for such a case.

# 9

## LESSON

### LEARNING TO USE SUPERCALC<sup>2</sup>

#### Output

## LESSON 9

### Output

We have worked with all but one of the SuperCalc<sup>2</sup> commands and have come to appreciate the power and flexibility of the SuperCalc<sup>2</sup> program and its electronic spreadsheets.

But so far we can't photocopy those spreadsheets, put them in a binder, or have them reformatted later into some special report layout. In this lesson, we will discuss the *output* command. It makes those things possible.

The *output* command will make a copy of our spreadsheet and send that copy to any of three places, depending on our specification. We can send the "output" — that is, the copy of all or part of our spreadsheet — to our computer system's printer which will print it out immediately. Or we can send it to the "console", our terminal, where it will temporarily replace the usual SuperCalc<sup>2</sup> display. Or we can send the output to a disk drive; in this case, the output will be "saved" or "stored" as a special sort of disk file, *different* from the ones we have created in the past with the *save* command.

Let's try this new command now. First, be sure that you have a fresh spreadsheet. Start up the SuperCalc<sup>2</sup> program, or use *zap*, if necessary.

Now *load* the file that we created in Lesson 5. (You may have made some practice files of your own. This is the one we stored as LESSON5.)

Enter **I/O**. Now the prompt line reads, "D(isplay) or C(ontents)"

**D**isplay means that the output will reproduce exactly what you see on the screen. Let's try that first.

Enter **D**.

You see that the prompt line requests the range of the material you wish to Output. Let's specify the range a little differently. Enter **ALL** for the range. This is the same as A1:Last Col/Row, which describes the entire spreadsheet. Press [**CR**].

The prompt now says,

Enter Device: P(rinter), S(etup), C(onsole), or D(isk).

Enter **C**, and the report will be listed on your screen or **Console**. If your report is several pages the SuperCalc<sup>2</sup> program displays them one at a time. Pressing [**CR**] will display or print the next page; [**CTRL-Z**] will return you to the SuperCalc<sup>2</sup> spreadsheet. There may seem to be no reason to output your document to the console, but sometimes you may want to check your output before printing it.

LEARNING TO USE SUPERCALC<sup>2</sup>

Notice that you retain the borders on your display output. To exclude the borders from your output enter /Global, then **B** for Border before you enter Output. To bring them back, enter /Global, Border again. Try it.

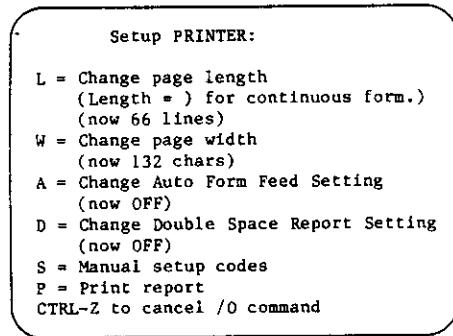
Now let's try sending output to the printer, printing only part of the spreadsheet. We will use a range specification that is a little different than the one we used earlier. *Be sure your printer is turned on.* (If you don't have a printer hooked up to your system, just skip to the next example.)

Enter /Output, Display, A1:D8,[CR]. Then enter **P** to output to the Printer.

You're probably wondering how you can utilize some of your printer features, such as compressed type or bold print, or how to print on continuous forms. Or maybe you want to change the format of your printed page. Never fear, there is a way.

Enter /Output, Display, **ALL**, [CR]. (Remember **ALL** is equivalent to A1:Last Col Row), then **S** for Setup. Your display changes to show you six options:

L(ength), W(idth), S(etup), A(uto FF), D(ouble Space), or Print)



and their default values. Length changes the number of lines the SuperCalc<sup>2</sup> program outputs per page; Width is the number of characters per line output; and Manual Setup codes are a sequence of characters, probably control characters, that need to be sent to your printer to initiate special functions. For example, on some printers you can get compressed type, (which allows you to get more characters per inch) by sending a control sequence before printing. To do this you would enter, for example:

/Output, Display, **ALL**, [CR], Setup, Setup, [CTRL-O], [CR], Width, 233, [CR], Print.

This command line sets one type of printer to print compressed type, increases the number of characters per line (if you want to print more than 132 characters), and prints. These parameters are in use until you change them or quit the SuperCalc<sup>2</sup> program. When entering manual setup codes, enter the

# 9

## LESSON

### LEARNING TO USE SUPERCALC<sup>2</sup>

#### Output

---

actual control sequences, *not the Hex values* for those sequences. *Make sure your printer is turned on and on-line.*

Let's try something else. Enter /Output, Contents, and specify A1:F7 [CR] for the range. Enter P for Printer. If you don't have a printer enter C for Console.

The content report gives us a list of the actual contents of the specified cells, and any special format for each cell. The contents will be quite different from what you see on the spreadsheet. The output will look the way the Active Cell contents do when displayed on the Status line.

The last option is D for Disk. In some ways it is like the value option of the Save command, but not really. When you choose this option your display is output to a disk file, but the resulting disk file is different from the normal SuperCalc<sup>2</sup> file. The file is an exact copy of what would be output to a printer, in ASCII, or character, format, with a .PRN extension rather than .CAL. The disk file has the same parameters as created in Setup; and therefore can be printed later with whatever print utility you want to use and in the format that you want.

The .PRN files, or "print" files can be very useful. You can print or edit .PRN files using system programs. You can use SuperWriter™ or your text editor program to add information and notes, to reformat your reports, or to incorporate your reports within another document being edited by changing the extension and just loading the file in. These edited reports can then be printed.

What have you learned in this lesson?

You have learned:

- How to send "output" to a printer, the console, or a disk file.
- How to "setup" for special printers or report formats.
- The difference between display and content reports and how to specify them.
- The use of .PRN files in other programs and documents.
- How to turn off the border display.

**LEARNING TO USE SUPERCALC<sup>2</sup>****Advanced SuperCalc<sup>2</sup> Features****LESSON 10****Advanced SuperCalc<sup>2</sup> Features*****SuperCalc<sup>2</sup> Advanced Features***

This lesson introduces you to some advanced features of the SuperCalc<sup>2</sup> program. We will use a simple checkbook register to illustrate the following features:

- User-defined formats
- The Calendar functions
- The Lookup function
- Textual values
- The Arrange command
- The Hide format

Our example is a small checkbook register. After you have completed this example, you may want to enlarge the spreadsheet for your own use.

In this lesson we will be using the calendar functions of SuperCalc<sup>2</sup>. We must set the system date so that SuperCalc<sup>2</sup> can access it. This example was prepared with the system date set to 8/18/83. Use that date to match the examples you will see. See Chapter 2 for instructions on setting your system date.

Begin SuperCalc<sup>2</sup> in the usual way.

Let's *load* the checkbook register into the spreadsheet. The filename is "CHECKS.CAL".

**/Load,CHECKS,All**

## 10

## LESSON

LEARNING TO USE SUPERCALC<sup>2</sup>Advanced SuperCalc<sup>2</sup> Features

The screen looks like this:

	A	B	C	D	E	F
1	Check Register					08/18/83
2				Thursday		
3						
4	Check			Check	Deposit	
5	Number	Date	Description	Amount	Amount	Balance
6						
7			Beginning Balance			\$1,150.00
8	2000		Phone Company	930.00		\$220.00
9	2001		Cleaners	140.00		\$80.00
10	2002		Department Store	100.00	(	\$20.00)
11				250.00		\$230.00
12	2003		Pharmacy	65.00		\$165.00
13	2004		Electric Company	250.00	(	\$85.00)
14				900.00		\$815.00
15						
16						
17						
18						
19						
20	Totals			1,485.00	1,150.00	( \$335.00)

Let's first look at how the check book formulas work.

Move the spreadsheet cursor to F8 and examine the cell contents as shown on the Active Cell Status line. It is:

IF(OR(D8,E8),F7-D8+E8,0)

This formula means: If either cell D8 or cell E8 does not equal zero (blank), then subtract the amount of the check (cell D8) and add the value of the deposit (cell E8) to the previous balance (cell F7). If both cells are blank, then enter 0.

Notice that the check numbers are automatically entered based on the number in cell A8. Move the cursor to cell A13 and examine the formula:

IF(D13<>0,MAX(A8:A12)+1,0)

This formula increments the check number each time a check is entered. When a deposit is entered, the cell remains zero (and displays blank).

LEARNING TO USE SUPERCALC<sup>2</sup>Advanced SuperCalc<sup>2</sup> Features***User-defined formats***

SuperCalc<sup>2</sup> allows you to specify User-defined formats. Let's look at the format for Column F. To access the User-defined format table enter the command:

/Format,Define

and SuperCalc<sup>2</sup> displays the format table. Each column gives you an opportunity to change seven characteristics for any range of cells you later specify. The seven characteristics are those named at the left of the format table.

User-defined formats								
	1	2	3	4	5	6	7	8
Floating \$	N	N	Y	Y	Y	Y	Y	Y
Embedded Commas	N	Y	Y	Y	Y	Y	Y	Y
Minus in ( )	N	N	Y	N	N	N	N	N
Zero as Blank	Y	N	Y	N	N	N	N	N
%	N	N	N	N	N	N	N	N
Decimal Places	0	2	2	2	2	2	2	2
Scaling Factor	0	0	0	0	0	0	0	0

CTRL-Z to return to spreadsheet.

The format table provides eight columns so you can set up to eight different special formats. You can change the characteristics in any column of the format table by moving the cursor to the appropriate location and changing the settings to Y (yes) or N (no) in the first five rows, or to 0 to 7 in the last two rows.

On our checks spreadsheet, column F was assigned User-defined format 3 by the designer. First, he entered /Format,Define to set the format at the format table (column 3), then later he entered a /Format,Column,F,User-defined3 command sequence. Look at the settings selected under format 3 on the format table. The display for User-defined format 3 specifies Floating \$, Embedded Commas, Minus in ( ), Zero as Blank, and two decimal places.

The "Zero as Blank" option causes the balance of rows not containing a check amount or deposit to be displayed blank, rather than zero.

**Advanced SuperCalc<sup>2</sup> Features**

In our checkbook example, User-defined format 1 was assigned to cells A8:A20, User-defined format 2 to D8:E20 and User-defined format 3 to F8:F20.

Experiment with changing the options for User-defined format 3 to observe their effect on column F. For example, change the "Zero as Blank" format for User-defined format 3 to N(o). Enter [CTRL-Z] and observe the effect on column F. Then go back to the User-defined table and return the value to its original Y(es) setting.

***Calendar Function***

Recall that you set the system date before starting SuperCalc<sup>2</sup>. Now position the cursor at F1 and enter TODAY. The system date displays in F1.

Now, let's put dates in for our checks. GoTo B8 and enter a date using the formula:

**DATE(MM,DD,YY)**

Note: You must use commas to separate the month, day, year at the data entry line, but the date displays with slashes on the spreadsheet.

Proceed to enter dates through column B using the Date function.

You could enter the TODAY function for any of these cells. However, when you set the system date to another value, the new system date will appear in those cells. This is probably not what you want.

The SuperCalc<sup>2</sup> Calendar contains other date functions as well as those you have seen here. They are:

TODAY	Returns the System Date.
DATE(MM,DD,YY)	Enters the date specified.
MONTH(Date Value)	Month of the specified date value.
DAY(Date Value)	Day of the specified date value.
YEAR(Date Value)	Year of the specified date value.
WDAY(Date Value)	Number of the day of the week.
JDATE (Date Value)	Modified Julian date.
DVAL (Numeric Value)	Date value from a numerical value.

***Text for Look Up Tables***

Notice that the day of the week appears in cell C2.

Three features of the SuperCalc<sup>2</sup> program are used to create this. Move the cursor to C2 and look at the formula:

**LOOKUP(WDAY(F1),G1:G7)**

LEARNING TO USE SUPERCALC<sup>2</sup>Advanced SuperCalc<sup>2</sup> Features

Let's first consider WDAY. WDAY returns the number of the day of the week. Sunday is 1, Saturday is 7.

The English name for the day of the week is contained in a "lookup table." GoTo (=) G1 and look at the contents of cells G1:H7. They are as follows:

G	H
1	Sunday
2	Monday
3	Tuesday
4	Wednesday
5	Thursday
6	Friday
7	Saturday

SuperCalc<sup>2</sup> does the following: First it evaluates WDAY(F1) as 5. Then, it looks down column G until it finds the number 5. It returns the "lookup" value that is in the adjacent column H as Thursday.

Similarly, you can use the "MONTH" function and another lookup table to return the name of the month for a given date.

### ***Textual Value***

The contents of column H are not regular text. They were entered as "Textual Constants". Textual constants are character strings enclosed in double quotes and parentheses. For example, H5 contains the entry:

("Thursday")

The difference between "Text" and a "Textual Value" is that a textual value may be propagated like any other value, and may be used in some expressions. This means that the value of a textual constant may be referenced or transferred to another cell.

Text entries, on the other hand, have a "value" of zero. The zero is propagated whenever a text entry is referenced in a formula.

Textual constants are especially useful in constructing lookup tables.

Note: Text Strings do not work in a lookup table.

Another important use for a textual value is within an IF function. Consider the following example.

IF(A1<0,("DEBIT"),A1)

This formula displays the value of A1 if A1 is zero or positive, but displays the text DEBIT if A1 is negative.

# 10

## LESSON

### LEARNING TO USE SUPERCALC<sup>2</sup>

#### Advanced SuperCalc<sup>2</sup> Features

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##### **Arrange**

The Arrange function sorts the spreadsheet by rearranging rows or columns according to a "key" column or row. For our example we will arrange our checks alphabetically by payee. The following command demonstrates some of the Arrange options. Enter the command:

**/Arrange,Column,C,8:18,Ascending,No**

and SuperCalc<sup>2</sup> sorts the spreadsheet by payee.

- We have selected to specify some options which may have been defaulted by entering [CR] after the Column,C, was specified. We have done this to show how to limit the sort to a range of row or columns.
- No Adjust was selected to preserve the original formulas of the check numbers in column A.

You can experiment by sorting on the Check amount or Balance columns.

Column I has numbers that correspond to the original row order. These were put in the spreadsheet deliberately to give us a means of easily returning the spreadsheet to its original order. Use the following command to return the spreadsheet to its original order.

**/Arrange,Column,I [CR]**

##### **Hide**

SuperCalc<sup>2</sup> has a display format option that hides the value and contents of cells. The Hide format also prevents the cells from being printed.

To hide the Lookup tables and column I before printing enter the following:

**/Format,Column,G:I,Hide [CR]**

This removes the values from display but not from the cells. To redisplay them just set any of the other legitimate display formats (I,G,E,\$,\*;U(1-8), or D) to replace Hide.

The hide format does not affect column width. The same amount of space is allocated for the column both on screen and when printed.

**LEARNING TO USE SUPERCALC<sup>2</sup>****Advanced SuperCalc<sup>2</sup> Features*****Print:***

We can now print the check register. Issue the following command to turn off the border before printing.

**/Global,Border**

Then print:

**/Output,Display,All,Printer**

Finally, Quit SuperCalc<sup>2</sup>.

**/Quit,Yes**

**LEARNING TO USE SUPERCALC<sup>2</sup>****A Sample Projection Spreadsheet****LESSON 11****A Sample Projection Spreadsheet**

By now you know enough about the SuperCalc<sup>2</sup> program to be able to use it without step-by-step instructions. With this lesson we will give you some general guidance and let you put what you have learned to work.

Experiment with the sample spreadsheet. Make changes and see their effects. You will find that some changes to values of formulas will have only minor effects on the rest of the spreadsheet, but others will have major consequences. It can be surprising to see how even a slight change in a percent figure in one formula can make a great difference to the final total.

This sort of experimentation is what helps make "intuition visible," as we suggested in the first chapter. You will find it useful in developing your own work.

This example is called SAMPLE. It will look familiar, because we used it in Lesson 7.

Make sure you /Zap your spreadsheet. Load SAMPLE now by entering /Load, **SAMPLE, ALL**.

Let's take a closer look at the spreadsheet. What can you find out about it? How far does the information extend? Is there a title lock present? How is it formatted?

Move your cursor to the right until you find the last column of data. The last column is N. The data ends at row 20. An easier way of determining the size of a spreadsheet is by looking at "Last Col/Row:" on the Status Line. This shows you the lower right corner of your spreadsheet.

Notice that while you were scrolling, the titles scrolled too. There is no title lock.

How about format? GoTo B3. The Status Line says: P Text = "Jan. What does this tell us? The "P" indicates that the cell is protected, and if you have a terminal so equipped you will have noticed that this cell, as well as the other labels in row 3 and column A are half intensity.

As you scrolled around, you may have found that most of the figures for the months of February through December are formulas. Set the formula display to display the formulas, if you haven't already done so, and notice that all figures for the months of February through December are formulas that depend on prior months. This seems to be a yearly projection for a company. Now, set the formula display to display the values again.

LEARNING TO USE SUPERCALC<sup>2</sup>

## A Sample Projection Spreadsheet

The spreadsheet is a projection based on the January figures. Operating Expenses (research, marketing and administrative), taxes and net profits are projected. For example, in row 4 we see the assumption that sales will grow steadily at 10% per month. In row 18 we see that taxes are a constant 40%.

What happens if you change some of these assumptions? They can be changed easily.

You can change the constant figures in January, which the assumptions are based on. You can also change the February value for formulas, and then replicate across March through December (without options, so that the SuperCalc<sup>2</sup> program adjusts automatically).

You will notice that slightly raising or lowering constant relationships, such as taxes (row 18), has a fairly predictable effect. But slightly changing the expected percentage increase in sales (row 4) can have a more marked effect. There are other places where a slight change in a value will have a significant effect, because it causes a change in trend. (For example, rows 6, 10, 11 and 12.)

What is the effect of a decline in sales (row 4)? An increased rise in marketing expenses (row 11)?

This spreadsheet is typical of a spreadsheet developed to give a quick impression of a possible project or of the prospects for an existing project. You could adapt the example for similar projections of your own. For many applications, it would be more realistic to assume seasonal changes than it is to assume constant changes (like the 10% sales growth). You might see what happens if you make sales and their associated values rise in summer and fall in winter, or some similar pattern.

In a more realistic forecast, other values might change at intervals. Certain costs might increase once in the middle of the year. Taxes might rise when sales increased beyond a certain amount.

You can use the SuperCalc<sup>2</sup> conditional function (IF) to test a given value and increase the tax rate when the total exceeds a certain amount. One way to do that is to test the taxable income figure for each column (row 18).

Try this experiment. Let's say that if the taxable income is greater than \$350, the tax rate rises from 40% to 42%. Insert a row at 18 and put the title **TAX RATE** at A18. Now put the following formula in B18: **IF(B16<=350, .40, .42)**. Replicate the formula, without options, across the row from February through December.

The spreadsheet is in integer format. To show the percentage tax rate, type /Format, Row, 18, \$. Now the tax rate will be 40% when the taxable income is \$350 or less, and 42% when it is greater. In what month does the rate increase?

LEARNING TO USE SUPERCALC<sup>2</sup>

## A Sample Projection Spreadsheet

Next we must change taxes (row 19). Change B19 from **B16\*.40** to **B16 \* B18**. Replicate this change, without options across row 19 from February through December.

As we mentioned above, the true and false portion of an IF statement may be a formula as well as a value. Using this, we could have done the above example without inserting a new row. This could have been done by modifying the formula in row 18. Instead of the formula that was there, we could have placed **IF(B18 <= 350, B16 \*.40, B16 \*.42)** in B18. Then, Replicate this formula across row 18 from March through December.

The IF statement we used above has three components. These are: the expression (in this case **B16 <= 350**); the formula to use if the expression is true (in this case **.40** which is a value as a formula); the formula to use if the expression is false (**.42** in this case). Where we used the "**<=**" you could have used "**=**" or "**>=**" as well to suit your needs. With this information, you can modify the above formulas to suit most of your applications.

This is what you have learned in this lesson:

- How to determine the characteristics of a spreadsheet.
- How to use the IF statement.

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## LESSON 12

### Break-Even Analysis

The idea behind a break-even analysis is a simple one. When you market a product, there are two kinds of costs. There are fixed costs, such as development and overhead; and there are variable costs associated with making the product, such as parts and labor. When you sell the product, you want to price it in such a way that you recover your fixed costs, your incremental, or variable costs, and make a profit. The break-even point is the point where you switch from loss to profit.

If you haven't already done so, /Zap the spreadsheet from Lesson 11.

This example is called BRKEVN. Load it and see what it looks like.

Enter /Load, **BRKEVN [CR], All**.

The setup is simple. Let's step through an example. You will probably want to set recalculation to **Manual** mode until you have entered all of the variables. Otherwise there is more of a delay between each entry for recalculation. Enter **/Global, Manual**.

Set the retail price in B3 and the discount rate in B19. Enter any numbers you wish. In B18 set the quantity increment, such as 50, 100, or 1000, or whatever is suitable for the sale of the particular product. Then, enter your fixed and variable costs. At this point, calculate the results with [!] and see the break-even point. How did we do?

Now let's tinker a bit and see what happens. You may want to return to automatic recalculation at this point by entering **/Global, Automatic**.

Try changing some of the fixed costs, then some of the variable ones.

You will notice, for example, that increasing fixed costs delays the point where you break-even, but does not have a great effect on your eventual profits. Changing variable costs has a continuing effect.

Try changing Retail Price and Discount. You can see how the profits can mount up if you chose right,—or how miserable the prospects are if you chose wrong.

If you're making successive changes to a cell you might try entering **/Global**, then **N** for **Next**. This disables the use of return for moving the cursor in the current direction. Notice that the direction arrow at the very left of the status line is now gone. This way you can make successive changes to a single cell without moving the cursor back every time. If you wish to move the cursor simply press the arrow keys.

LEARNING TO USE SUPERCALC<sup>2</sup>Break-Even Analysis

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Now let's look at how the spreadsheet is built. Set formula display by entering /Global, Formula.

Take a look at column C, Units Sold. C2 starts with B18, which is quantity increment. C3 is C2 plus quantity increment, and so on down the column. The formula for each value consists of the value above plus the increment.

Is there an easy way of accomplishing this? Yes. Enter the initial quantity in C2 and C2 plus the increment in C3. Then Replicate the formula in C3 down the column using the Ask for adjustment option. Enter /Replicate, C3,C4:C254,A. You will then be asked whether to adjust each of the cells referenced in the formula being replicated. For C2 answer Y, for B18 answer N.

Now look at column D, Profit and Loss. These formulas may look rather forbidding, but once we have figured them out, we will see that the calculation is straightforward.

Let's start with a look at D2. The formula is:

$$C2*B3*(.01*(100 - B19)) - (B9 + (B16*C2))$$

Scrolling down that column, we see that the other formulas are similar. In D3, the formula has C3 in place of C2, but all other values are the same. This pattern continues. For each entry in column D, column C refers to the adjoining Units Sold value.

So the formula in D2 starts out with Units Sold times Retail Price (that is, C2\*B3).

The .01\*(100 - B19) simply subtracts the discount rate (B19) from 100 and makes it a percentage. If B19 contains 40, then .01\*(100 - B19) is equal to 60. In other words, this expression is the percentage of our retail price that we get to keep. It is our wholesale price.

What about (B9 + (B16\*C2))? B9 is the sum of our fixed costs. B16 is the total variable costs. B16\*C2 is the total variable costs (B16) times the units sold for this particular row.

So the formula in D2 turns out to be quite straightforward: it is the Units Sold  $\times$  Price - Cost.

Like the other examples in this chapter, this spreadsheet is realistic but simplified. You can use it "as is" in order to get a general idea of the effects of pricing policy on a product or to do short-term forecasting. But in actual marketing, costs and prices change.

There are two ways that you might adapt this spreadsheet to show the effect of changes in prices and costs.

**LEARNING TO USE SUPERCALC<sup>2</sup>****Break-Even Analysis**

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One way is to put changes at intervals in the spreadsheet. For example, have the numbers in the spreadsheet represent the cost for a 6 month interval of production. Change your costs, prices, and even your incremental values for production (you are producing more efficiently).

A second way is to use conditional expressions as described in the prior lesson on the Projected Balance Sheet. You could test the number of units produced. Based on that test, you could specify adjustment factors for prices and costs. Then you multiply your price and cost information by the adjustment factors, and refer to the adjusted figures in your other formulas.

This is what you have learned in this lesson:

- How to use the Global recalculation options Manual and Automatic.
- How to use the Next option of the Global command.

## **Notes**

## THE SPREADSHEET AND CURSORS

### The Spreadsheet

A	B	C	D
1			
2			
3			
<C3			
1>			

## 4. The Spreadsheet and Cursors

### The Spreadsheet

SuperCalc<sup>2</sup> uses your computer's memory as a large spreadsheet. The spreadsheet consists of cells organized into a rectangular grid containing 63 columns and 254 rows. Columns are designated by letters (A...Z,AA...AZ,BA...BK) and rows by numbers (1...254).

The location of a cell within the grid defines its "cell address". You reference a cell by naming its coordinates, first the column letter, then the row number. For example, A1 is the upper left corner cell and BK254 is the lower right corner cell.

	A	B	C	BK
1	A1			
2				
3				
...				
254				BK 254

	A	B	C	D
1				
2				
3				
<C3				
1>				

## THE SPREADSHEET AND CURSORS

### The Spreadsheet

---

#### Display Window

The spreadsheet is far too large to be displayed on your terminal screen at one time. Your screen acts as a "display window" that moves over the spreadsheet showing you a portion at a time.

A	B	C	D	E	F	G	H	I	J	K
1										
2										
3										
4										
5										
6										
7										
8										
9										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										

You may split the screen to display two portions of the spreadsheet at a time.

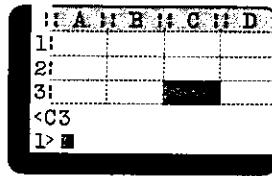
	A	B	C	D	E	F	G	H
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								

	A	B	C	D	E	F	G	H
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								

## THE SPREADSHEET AND CURSORS

The Spreadsheet



### *Border*

The screen border identifies the currently displayed columns and rows. The top border contains column letters and the left border contains row numbers. You may turn the border on or off as desired. When the border is on, it displays on screen and prints on the printer. When it is off, it does not display on screen nor print on the printer.

	A	B	C	D	E	F	G	H
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								
11								
12								
13								
14								
15								
16								
17								
18								
19								
20								

A	B	C	D
1			
2			
3			
<C3			
1>			

## THE SPREADSHEET AND CURSORS

### The Spreadsheet

---

#### *The Active Cell*

The "Active Cell" is the cell affected by data entry at the present time. The "Spreadsheet Cursor" identifies the Active Cell. Only one cell is active at a time and it always displays.

- The Active Cell is called the "Current Cell".
- The column containing the Active Cell is the "Current Column".
- The row containing the Active Cell is the "Current Row".

The form of the spreadsheet cursor depends on your terminal. The cursor displays as:

An Underline \_\_\_\_\_

In inverse video. #####

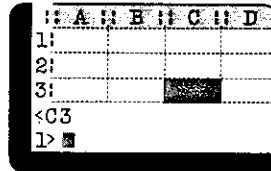
A set of brackets. < >

The spreadsheet cursor can be set to either move automatically to an adjacent cell or to remain in the current cell upon data entry. When set to move automatically, it moves in the direction of its previous move to the adjacent cell, which then becomes the Active Cell. When set to remain stationary, the cursor does not move upon data entry.

A	B	C	D
1			
2			
3			
<C3			
1>			

## THE SPREADSHEET AND CURSORS

### The Spreadsheet



#### *The Current Status Lines:*

The bottom three lines display the Current Status.

>A1 L\$TR P Text=	Formula Error
Width: Memory: Last Col/Row: ? for HELP	
1>	

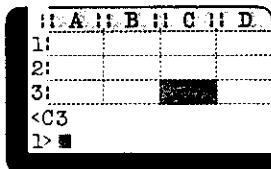
Active Cell Status  
Global Status/Prompt  
Data Entry/Command

You enter all data and commands on the Data Entry/Command line. This line contains the Edit Cursor.

The Active Cell Status and Global Status/Prompt lines display information only. You cannot move either the edit or spreadsheet cursors into the Active Cell Status or Global Status/Prompt lines.

The Global Status/Prompt and Data Entry/Command lines work together as a pair.

- When the Data Entry/Command line is in Data Entry mode, the Global Status/Prompt line displays the Global Status.
- When the Data Entry/Command line is in Command mode, the Global Status/Prompt line displays the current prompt.



## THE SPREADSHEET AND CURSORS

### The Spreadsheet

#### *The Active Cell Status Line*

The Active Cell Status line displays information about the Active Cell. A sample Active Cell Status Line looks like this:

>A1    L\$TR    P    Text="February"                          Formula ERROR

- > — Cursor direction. The first character indicates the current direction of motion of the spreadsheet cursor. When you press [CR] to enter data into the Active Cell, the cursor moves to the adjacent cell in the direction indicated. This direction is always that of the previous cursor move. You may turn the "Next" option on and off. (See the /Global command.)
- A1 — Active Cell Address. The coordinates of the Active Cell display here. Commands that reference current columns or current rows use the column/row containing this cell.
- L\$TR — Cell Format "Entry" Options. Displays the options set with the /Format command at the "Entry" level. (See the /Format command.)
- P — Protected Entry. A "P" indicates the Active Cell is protected. This position is blank for an unprotected cell. (See the /Protect command.)
- Text = — Data Type. SuperCalc<sup>2</sup> recognizes three types of data:

Text= String Text  
Rtxt= Repeating Text  
Form= Formula Entry

- "February" — Cell Content. Displays the literal content of the cell.
- Formula ERROR — Error Message. If an error occurs, an error message displays on the far right of the line. Press any key except [CR] to delete it and proceed.

A	B	C	D
1:			
2:			
3:			
<C3			
1> ?			

## THE SPREADSHEET AND CURSORS

### The Spreadsheet

#### *Global Status/Prompt Line*

The Global Status/Prompt is the middle Status line.

When the Data Entry/Command line is in Data Entry mode, the Global Status/Prompt line displays the Global Status.

When the Data Entry/Command line is in Command mode, the Global Status/Prompt line displays the current prompt.

The Global Status line contains the following data:

- Width:

The column width of the Active Cell. The default column width is 9.

- Memory:

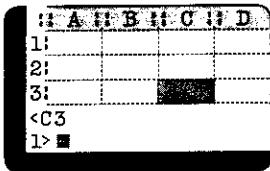
The amount of unused computer memory available in "kilobytes". A kilobyte is 1024 characters or "bytes". The available memory decreases as you add to your spreadsheet.

- Last Col/Row:

The intersection of the last column and row that contains data. The cell named need not contain data. It is the composite of the last column and last row that have a non-blank cell.

- ? for Help

A reminder that typing [?] always gives an explanation of your current options.



## THE SPREADSHEET AND CURSORS

### The Spreadsheet

---

#### Data Entry/Command Line

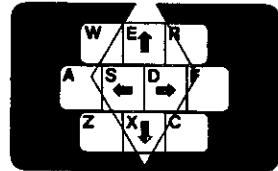
The Data Entry/Command line contains the Edit Cursor. The number at the left indicates the current Edit Cursor position.

The Data Entry/Command line serves two functions. The character you enter into position 1 on the Data Entry/Command line determines its mode. A [CTRL-Z] or [CTRL-C] erases (or clears) the entire Data Entry/Command line.

- The Data Entry mode enters data directly into the Active Cell. The first character indicates the type of data. Any character except those that begin text and commands result in a Formula Entry.
  - “ Begins Text
  - ’ Begins Repeating Text
- The Command mode performs specific functions. Four keys access the command mode.
  - = The “GoTo” command moves the cursor directly to the designated cell.
  - ! The “Recalculate” command forces a recalculation of the entire spreadsheet.
  - ; The “Switch Window” command positions the spreadsheet cursor in the alternate window on a split screen.
  - & The eXecute “Resume” command returns control of the spreadsheet back to the current execute (XQT) file.
  - / Selects the “//” commands. See Chapter 7 for a complete description of the “//” commands.
- You cannot go directly between the Command and Data Entry modes, rather, you must return to the Spreadsheet mode first.

## THE SPREADSHEET AND CURSORS

### The Supercalc<sup>2</sup> Cursors



### The SuperCalc<sup>2</sup> Cursors

Supercalc has two cursors, the spreadsheet cursor and the edit cursor. Both are always visible. The spreadsheet cursor occupies the current Active Cell and moves to any cell on the spreadsheet. The Edit cursor resides on the Data Entry/Command Status line and moves along this line only.

#### *Spreadsheet vs Edit Cursor*

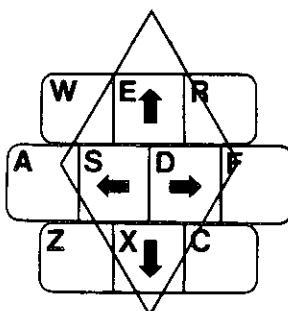
Only one cursor is active at a time. The spreadsheet cursor is active provided nothing has been entered on the Data Entry/Command line. The Edit Cursor becomes active when you begin to use the Data Entry/Command line for either Data Entry or a Command and remains active until you do one of the following:

1. Enter data into the Active Cell.
2. Execute a command.
3. "Back out" of the Data Entry/Command line using a left cursor command.
4. Use the [ESC] for current cell function.
5. Clear the Data Entry/Command line with [CTRL-Z] or [CTRL-C].

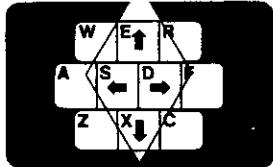
#### *Cursor Commands*

You control both cursors using two groups of cursor control keys. The groups are equivalent and may be used interchangeably.

- The arrow keys move the cursor in the direction they point.
- The Cursor Diamond keys work with the Control key. Press the Control Key and one of these keys simultaneously.



Note: Some terminals do not have arrow keys.



## THE SPREADSHEET AND CURSORS

### The Supercalc<sup>2</sup> Cursors

#### *Moving the Spreadsheet Cursor*

The spreadsheet cursor moves to any cell on the spreadsheet, but not past the spreadsheet limits. When you move the cursor to a cell outside the display window, the spreadsheet scrolls to display the new location and the border adjusts to the new display window.

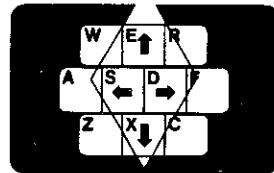
The cursor movement keys move the cursor one cell at a time. Use either the arrow keys or the Cursor Diamond Control Keys, whichever are more convenient.

The "GoTo" (= **cell address [CR]**) command moves the cursor directly to the designated cell.

- If the designated cell is on the display, the cursor moves directly to it.
- If not on the display, the window adjusts to position the designated cell in the upper left corner.
- If you enter "GoTo" without a cell address (= [CR]), (or specify the current cell) the Active Cell is positioned in the upper left corner.

## THE SPREADSHEET AND CURSORS

The Supercalc<sup>2</sup> Cursors



### ***Moving the Edit Cursor***

The Edit Cursor moves left and right along the Data Entry/Command line. When you enter a new character, it replaces the one directly beneath the cursor. The Interpretive Prompting of the Command mode supplies characters for some commands. You only need to type the first letter of the command and SuperCalc<sup>2</sup> fills in the rest for you.

The edit cursor keys are the same arrow or Cursor Diamond keys as the spreadsheet cursor keys..but they behave differently.

The Left and Right cursor keys move the cursor along the Data Entry/Command line without changing the line.

The Down Cursor key deletes the character at the cursor position and moves the remainder of the line one character to the left.

The Up Cursor key inserts a blank space at cursor position. You can enter a character into this space.

The [TAB] key moves the Edit cursor to either the beginning or the end of the entry line.

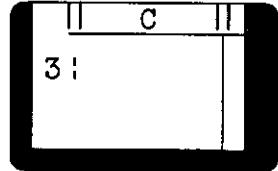
- The [TAB] key works in Data Entry mode and with the /Edit command.
- If the cursor is at the beginning of the edit line, the [TAB] key places the cursor at the end of the line.
- If the cursor is anywhere else in the line the [TAB] key places the cursor at the beginning of the line.

The entire Data Entry/Command line is entered when you press [CR] regardless of the position of the edit cursor.

## **Notes**

## **CELLS**

### **Empty Cells**



---

## **5. Cells**

The cell is the basic unit of the SuperCalc<sup>2</sup> spreadsheet. A cell coordinate is the location of the cell specified by column and row. Each cell has a unique coordinate. A cell contains three types of information: (1) The Cell Content, (2) the Cell Value, and (3) the Display Format. The spreadsheet area displays either the cell contents or the cell values. You may designate the display format for the cell values. The format options are displayed on the Global Status line for cells formatted at the Entry level. The format options for cells formatted at the Global, Row or Column level do not display.

### **Cell Content**

The Cell Content consists of the basic data that a cell contains. It is entered into the cell in one of two ways.

- Manually from the Data Entry line.
- Automatically from another cell using the Copy, Replicate, Move or Load commands, possibly with formula adjustment.

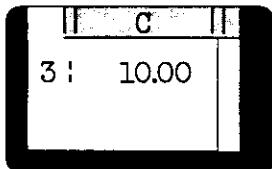
A cell may be empty, contain text, repeating text or a formula.

### ***Empty Cell***

All cells are initially empty. A cell remains empty until you enter something into it.

### ***Text String***

A leading double quotation mark ["] designates a text string. A text string can contain a maximum of 115 characters.



## CELLS

### Cell Content

The default format for text is left justification and can optionally be set to right justification. If the text is longer than the column width and is left justified, it will continue into adjoining cells. If these cells are occupied, SuperCalc<sup>2</sup> displays as much as it can. Consider the following example. Cells A1, A2, and A3 each contain the same text string. Cells C2 and B3 each contain a numerical entry.

	A	B	C	D
1	SuperCalc <sup>2</sup> is a versatile electronic spreadsheet.			
2	SuperCalc <sup>2</sup> is a versatil	250		
3	SuperCalc <sup>2</sup>	4/15/83		
	<C3			
	]>			

### *Repeating Text*

Repeating Text begins with a single quote ['']. Repeating text displays from the active cell onwards to the right until it reaches a non-empty cell or Column BK.

Repeating text displays through column BK if not interrupted. However, it does not affect the "Last Col/Row." When printed, the repeating text extends or prints only through the boundary imposed by the "Last Col." It will only repeat when the row is set to TextLeft. It can be a repeat of more than one character (for example '-+-+'). You can stop the display by creating a blank cell (e.g. '') at the boundary.

### *Formula Entries*

A formula is a mathematical expression that calculates a value. It consists of constants, cell references and function references, connected by operators. A formula may contain a maximum of 116 characters.

When a formula is entered into a cell, the value may be calculated and displayed. Calculation is controlled by the /Global,Manual/Auto flag. Cell content (formula) or value display is controlled by the /Global,Formula flag.

## CELLS

### Cell Value

C	3	10.00

## Cell Value

The Value of a cell is the result obtained by evaluating the contents of the cell.  
All cells have a value. There are five types of values:

- Numeric
- Date
- Textual
- Not available
- Error

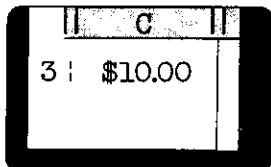
Each of the four types of cells may take on certain types of values.

- An "Empty" cell has a numeric value of zero.
- A "Text String" cell has a numeric value of zero.
- A "Repeating Text" cell has a numeric value of zero.
- A "Formula" cell may have a numeric, date, textual, not available, or error value . Note that a textual value is different than a text string.  
See Chapter 8.

Cell values and types propagate. This means that the cell value may be referenced by a formula in another cell. Such a reference is to the value of the original cell, not to its content (formula).

Note: Although the cell content cannot be referenced by other cells, it may be replicated or copied.

Example: Suppose that cell A5 contained the formula  $2*3$  and the current cell contained the formula  $2*\text{PI}*\text{A5}$ . The value of 6 will be used in the formula to evaluate the current cell.



## CELLS

### Cell Format

---

### Cell Format

SuperCalc<sup>2</sup> allows you to specify a wide array of display formats for the cell values. Altering the display format in no way alters the contents or the value, only the way it is displayed on the console or printed on the printer.

When you format a cell you tell SuperCalc<sup>2</sup> how you want the cell value to look on your screen. You can specify a format for an individual cell, a group of cells, rows, columns, or the entire spreadsheet.

The display format options are described in detail under the /Format command (Chapter 7).

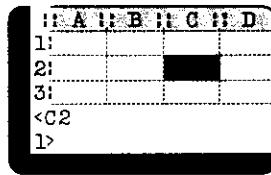
### Current-Cell Reference Key [ESC]

The current-cell key is the [ESC] key. When you press it, the SuperCalc<sup>2</sup> program puts the location of the active cell onto the entry line for you to use in a command or expression. After you press the current-cell key, the arrow and alternate diamond keys control the spreadsheet cursor. If you move the spreadsheet cursor, the Active Cell address on the entry line changes dynamically to reflect the new location. When you press [ESC] again, the address stops changing, and the arrow and diamond keys can again be used for editing.

Pressing [:] after the Active Cell address is a special case. The SuperCalc<sup>2</sup> program places another Active Cell address after the colon. The address before the [:] is fixed; the address after the [:] can still be dynamically changed.

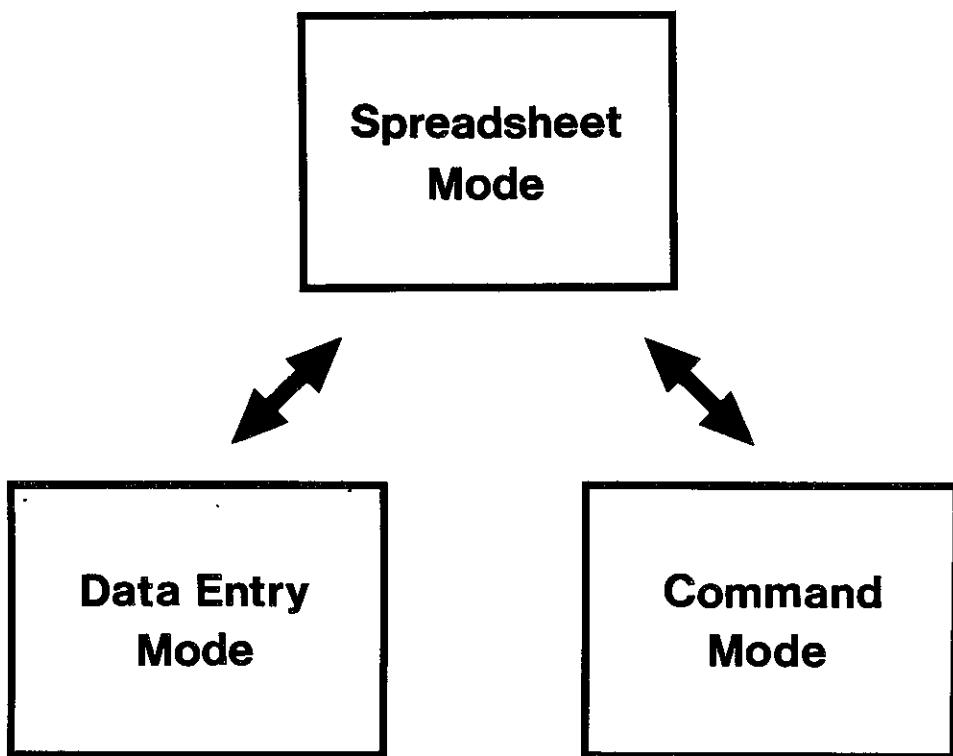
The new Active Cell location is temporary. When you press [CR] to enter the command or expression, the spreadsheet cursor will return to the prior active cell location. If you are entering data into a cell, it will go into that prior location.

## THE OPERATION MODES

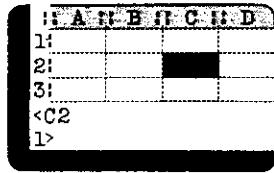


# 6. The Operation Modes

SuperCalc<sup>2</sup> operates in three distinct modes.



When you first enter SuperCalc<sup>2</sup>, you are in Spreadsheet mode. You can move to Data Entry or Command mode. You cannot go directly between Data Entry and Command modes, rather you must return to Spreadsheet mode first.



## THE OPERATION MODES

### Spreadsheet Mode

### Spreadsheet Mode

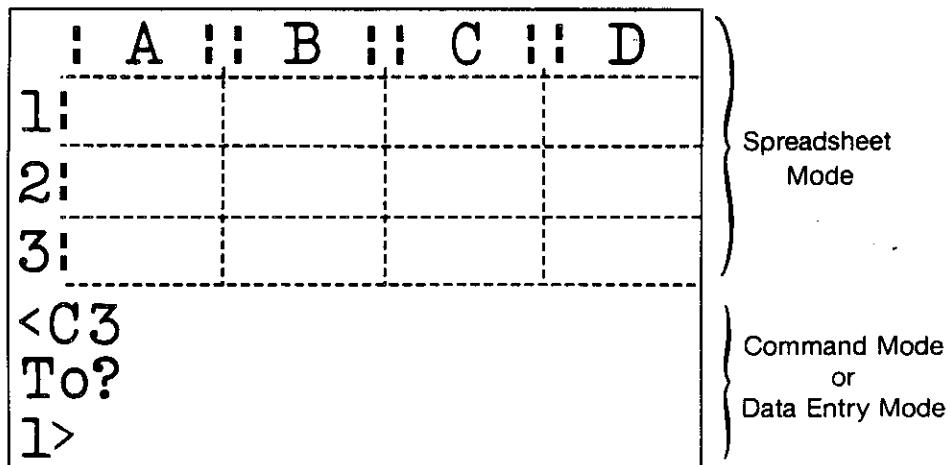
In Spreadsheet mode the spreadsheet cursor is active and the edit cursor is inactive. You can move the spreadsheet cursor around the spreadsheet to view cell contents and values.

The Status lines display the following:

Active Cell Status

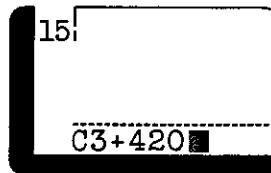
Global Status Mode

Edit Cursor Position (The line is not used.)



## THE OPERATION MODES

### Data Entry Mode



### Data Entry Mode

Data Entry mode enters data directly into the Data Entry line. A [CR] enters the data in the Data Entry line into the Active Cell. The Status lines display:

Active Cell Status  
Global Status  
Data Entry mode

You enter Data Entry mode by typing a Text or Formula entry. Begin the entry with any letter, number or one of the characters [, "+, ., ]. A [CR] enters the content of the Data Entry line into the Active Cell and returns SuperCalc<sup>2</sup> to the Spreadsheet mode.

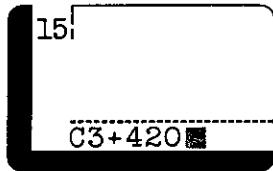
A Text entry begins with a double quote ["] character. Any printable character on the keyboard may be used in text. A text entry may be up to 115 characters.

Repeating text begins with a single quote [']. The text repeats toward the right until a non-blank cell or the right edge of the spreadsheet (column BK) is encountered. Repeating text may contain any keyboard character and be up to 115 characters. When the cell is formatted **TL** (Text Left) the text repeats. When formatted **TR** (Text Right) the text does not repeat.

SuperCalc<sup>2</sup> checks that your entry constitutes a legitimate formula when you attempt to enter it and displays a Formula ERROR message if it is not. Formulas, then, may begin with any of the following:

- A numeric constant — The characters [0-9, (, +, -, .] begin numeric constants.
- A cell reference — Cell coordinate.
- A mathematical function.
- A calendar function.
- A special function.
- A textual constant.

A formula can contain up to 116 characters. Numeric constants can have 16 significant digits plus a decimal point. Scientific, or exponential numbers can have 16 significant digits and a decimal point, all raised to a power of ten. The limit is the 63rd power of 10.



## THE OPERATION MODES

### Data Entry Mode

---

#### *In-Line Editor*

You edit data on the Data Entry line.

- The Left and Right arrows (or [CTRL-S] and [CTRL-D]) move the edit cursor non-destructively along the edit line.
- The Down arrow [CTRL-X] deletes the character immediately under the edit cursor.
- The Up arrow [CTRL-E] inserts a blank character between the previous character and the present cursor position.
- [ESC] enters the Active Cell coordinates at the edit cursor position.
- [CR] enters the entire data line into the Active Cell.
- [TAB] moves the cursor to the end of the edit line if the cursor is at the beginning, or to the beginning of the edit line if the cursor is anywhere else.
- [CTRL-Z] (or [CTRL-C]) deletes the entire Data Entry line and returns you to Spreadsheet Mode.

You can back out of the Data Entry line and into the spreadsheet mode by moving the cursor one character to the left of the beginning of the line.

#### Limits for Data Entry

Numbers can have up to 16 significant digits plus a decimal point and an optional sign. Exponential numbers (scientific notation) can have up to 16 significant digits, a decimal point and sign, and a signed exponent between -63 and +63. Numbers are rounded and displayed to a maximum of the 62nd power of 10 or to a minimum of the -64th power of ten.

##### Largest

number	9999999999999999
exponential number	9.99999999999999e62
negative number	-1.0e-64

##### Smallest

number	-9999999999999999
exponential number	-9.99999999999999e62
positive number	1.0e-64

## THE OPERATION MODES

### Command Mode



### Command Mode

Command mode directs SuperCalc<sup>2</sup> to perform an action. You enter command mode with one of four command keys from the spreadsheet mode.

!	Recalculate
;	Switch Window
=	GoTo
&	Resume Execute
/	Slash Commands Access

#### ***Recalculate [!]***

The [!] key forces recalculation of the entire spreadsheet. In [/Global, Manual] mode, this command is the only way to recalculate values. In [/Global, Automatic] mode, the command provides an additional recalculation. (See the /Global command.)

#### ***Window Cursor Jump [:]***

The [:] key switches the spreadsheet cursor between windows on a split screen. (See the /Window command.)

#### ***GoTo [=]***

The [=] key moves the spreadsheet cursor directly to the cell specified. When you press [=], the bottom status line prompts for a cell address. A [CR] executes the command. The spreadsheet cursor moves to the cell specified if it is currently displayed. If not in the display window the specified cell becomes the upper left cell of the display window. The command without a cell specified shifts the display window to put the Active Cell in the upper left.

#### ***Resume Execute [&]***

The [&] key returns control of the spreadsheet back to the current execute (.XQT) file.

#### ***Slash [/]***

The SuperCalc<sup>2</sup> Slash Commands perform all other functions. You never have to remember a long list of commands. When you enter the [/] key, SuperCalc<sup>2</sup> prompts with the first letter of each command. You enter the first letter and SuperCalc<sup>2</sup> immediately fills in the rest of the word on the command line.



## THE OPERATION MODES

### Command Mode

---

Chapter 7 describes the slash commands in detail. They are:

/Arrange  
/Blank  
/Copy  
/Delete  
/Edit  
/Format  
/Global  
/Insert  
/Load  
/Move  
/Output  
/Protect  
/Quit  
/Replicate  
/Save  
/Title  
/Unprotect  
/Window  
/X(eXecute)  
/Zap

When you press the [/] key, three things immediately happen.

- The bottom status line enters Command mode. The position number of the edit cursor displays first, then the [/] character.
- The middle status line changes from Global Display mode to Prompt mode. The slash command prompt displays:  
  
Enter A,B,C,D,E,F,G,I,L,M,O,P,Q,R,S,T,U,W,X,Z,?  
  
• The edit cursor becomes active and the spreadsheet cursor inactive.

Most commands have several entry levels. When you enter a command letter, the prompt line changes to the appropriate prompt. SuperCalc<sup>2</sup> continues to prompt you through the sequence of options until you execute the command.

Whenever you need help press the AnswerKey [?]. SuperCalc<sup>2</sup> explains on screen your current options, then with a touch of any key, returns you to where you were to continue your work.

## THE OPERATION MODES

### Command Mode



You edit commands, like data and formulas, with the in-line editor. The Arrow keys or Cursor Diamond keys control the edit cursor.

- The Right Cursor key moves the cursor to the right without erasing characters. When the cursor is at the right most character of a command, the Right Cursor key is operative.
- The Left Cursor key moves the cursor to the left within a command option and erases the option. Within a command specification, such as a filename or cell range designation, the Left Cursor key does not erase characters.
- The Down Cursor key deletes the current cursor character.
- The Up Cursor key inserts a blank space at the cursor position.
- [ESC] enters the Active Cell into the current cursor position on the edit line.
- [CR] executes a command. Everything on the line executes, not just the information to the left of the cursor.
- [,] specifies that the current option is complete and proceeds to the next option of the command. If the option is the last option, the command executes.

You can "back out" of your current entry by using the Left Cursor key. In fact, you can back entirely out of a command without executing it by moving the cursor one position to the left of the slash [/] character.

## **Notes**



## 7. The Slash Commands

### Introduction to the Slash [/] Commands

The slash commands are so named because they begin with the slash [/] key. When you type the first letter of a slash command, SuperCalc<sup>2</sup>'s interpretive prompting completes the rest of the word on the entry line. For example, when you enter "/B", the Command line reads /Blank,. Notice that the interpretive prompting also includes the comma separating command options. When you enter the [/], the prompt line displays all the possible one letter entries. Whenever you wish further information about your option at any given moment, press the AnswerKey [?].

Most commands have several levels of entry. When you choose one of these, the prompt line changes to show the choices available for that particular command. You are prompted through the entire sequence of options.

Commands, like data, can be edited with the in-line editor. Remember that when you press [CR], everything visible on the Command line is entered —not just the part of the command to the left of the cursor.

This chapter describes each of the slash commands. The commands are presented in alphabetical order, just as on the Prompt line. All of the options are presented in the box at the beginning of each command description. The options available at any particular point in defining a command are presented vertically. You select one of them and SuperCalc<sup>2</sup> moves to the next set of options, listed in the column adjacent to the right.

### The Cell Range

Many commands require you to specify a cell range. The term "Range" means that you can enter more than one cell at once. Some prompts specify a "Row Range" or "Column Range". SuperCalc<sup>2</sup> uses the following range designators.

Cell            A column followed by a row. Example: J10

Column        A letter (or pair of letters) from A through BK. Example:  
AF

Partial Column    Two cells in the same column, separated by a colon.  
Example: The range N2:N15 includes all cells in Column N from N2 through N15.

Column Range    Two columns separated by a colon. Example: The range A:BC includes all columns from A through BC.

**THE SLASH COMMANDS****The Cell Range**

---

Row	A number from 1 through 254.
Partial Row	Two cells in the same row, separated by a colon. Example: The range N2:T2 includes all cells in row 2 from N2 through T2.
Row Range	Two rows separated by a colon. Example: The range 6:88 includes all rows from 6 through 88.
Block	Two cells, separated by a colon. Example: The range D5:AP75 includes all cells in the block between D5 in the upper left and AP75 in the lower right.

An empty range (entering just [CR]) means the current cell, row or column.

"All" means the range A1:<Last Col/Row>

[ESC] allows the arrow keys or ([CTRL-S/E/D/X] keys) to be used to point to a cell.

Note: A cell range may be specified in ascending or descending order. For example, D10:A6 is equivalent to A6:D10.

**THE SLASH COMMANDS**  
**The SuperCalc<sup>2</sup> File Directory**



## The SuperCalc<sup>2</sup> File Directory

The following commands have an option that allows you to view the disk directory prior to selecting a filename.

/Delete  
/Load  
/Output  
/Save  
/X(eXecute)  
/Quit,To

When you select the "CR for file directory" option, your spreadsheet disappears and you see a menu that gives you four choices:

**C**(hoose) alternate disk drive  
**D**(isk) directory, All files  
**S**(uperCalc) format files only  
**E**(nter) filename

The information at the top of the menu tells you the name of the last file that you loaded, your current work disk, and your current work file, if any.

The **C**(hoose) option allows you to change the current work disk.

The **D**(isk) option shows you the files in the directory of your current work disk. To get back to the menu press any key.

The **S**(uperCalc) option displays SuperCalc .CAL files only. This option also shows the textual contents of cell A1 and the SuperCalc version used to create the file. See Appendix D for SuperCalc file compatibility.

The **E**(nter) option returns you to the command line to enter a filename.

Use a **[CTRL-Z]** (or **[CTRL-C]**) to quit the current command and return to the spreadsheet.

Note:

**[CTRL-Z]** performs the same function as the **Enter** option in SuperCalc.

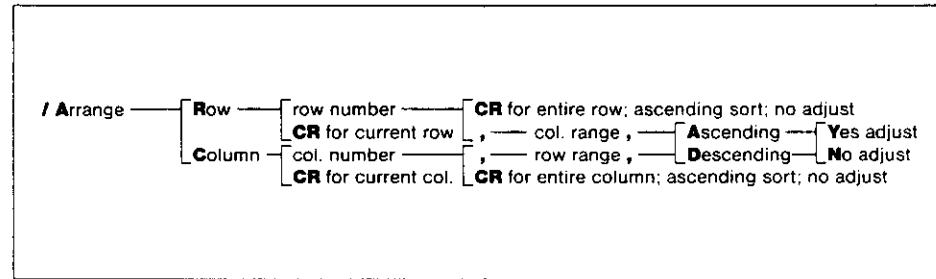


## THE SLASH COMMANDS

### Arrange

## ARRANGE

**Synopsis:** Sorts the spreadsheet by a column or row.



### **Command Description:**

The **Arrange** command sorts your spreadsheet based on the cell values of a column or row. The **Arrange** options are:

- Sort based on the values in either a row or column. When you sort by a row, the columns are arranged, when you sort by a column, the rows are arranged.
- Specify a partial column or row. You specify a partial column for a row sort or a partial row for a column sort.
- Specify the sort order, either ascending or descending.
- Specify whether to adjust or not adjust formulas.

### Column Sort:

A sort by **Column** rearranges the spreadsheet rows so that the "key" column is in ascending or descending order.

When you select a column sort, you first specify the key column letter. A [CR] enters the current column and begins the sort. The following defaults apply:

- All rows are sorted.
- Ascending sort order.
- No formula adjust.

### Row Sort:

A sort by **Row** rearranges the spreadsheet columns so that the "key" row is in ascending or descending order.

## THE SLASH COMMANDS

Arrange



For a row sort, you specify the key row. A [CR] enters the current row and begins the sort. The following defaults apply:

- All columns are sorted.
- Ascending sort order.
- No formula adjust.

To select non-default values, enter the row/column then a comma [,]. SuperCalc<sup>2</sup> prompts for all of the following options:

Enter the range of the row/column you want.

- If you are sorting by a column, specify the row range to be included in the sort.
- If you are sorting by a row, specify the column range to be included in the sort.
- You may enter "All" to specify the entire row/column range.
- While you may specify a partial sort using one row/column by a [CR], such a sort results in no effective change in the order of your spreadsheet.

Select the sort order:

- You may select between Ascending or Descending sort order. SuperCalc<sup>2</sup> arranges data first according to the type of data a cell contains, then according to the cell value.
- Regardless of the sort order, cells are arranged in groups by contents and value types:

Text Cells  
Textual Value Cells  
Date Value Cells  
Error Cells  
Not Available Cells  
Numerical Value Cells  
Blank (Empty) Cells

- Within those groups, cells are arranged in ascending or descending order, with numerical and date values in order, and Text cells and textual values in the following order:

Space.  
Other characters in ASCII order.  
Alpha characters, with lower case characters preceding their upper case counterparts (aAbBcC...zZ).  
Numeric characters.



## THE SLASH COMMANDS

### Arrange

---

Note: See Appendix C for the complete Sorcim sort order. This order is very similar to that used in a dictionary or phone book.

#### Adjust Yes or No:

You may select whether to adjust cell formulas.

- If you select **Yes**, SuperCalc<sup>2</sup> sorts your spreadsheet, then adjusts the formulas and recalculates if **Global,Auto** is in effect.
- If you select **No**, SuperCalc<sup>2</sup> does not alter the cell formulas or recalculate values. This is the default.

#### *Examples:*

To arrange the current row (default options are ascending sort order and no formula adjust):

**/Arrange,Row [CR]**

To arrange the current column (default options are ascending sort order and no formula adjust):

**/Arrange,Column [CR]**

To arrange a different row (default options):

**/Arrange,Row,14 [CR]**

To arrange a different column (default options):

**/Arrange,Column,E [CR]**

To arrange a partial row in ascending sort order with no formula adjust.

**/Arrange,Row,7,C:G,Ascending,N**

To arrange a partial column using descending sort order and to adjust formulas:

**/Arrange,Column,D,7:19,Descending,Y**

## THE SLASH COMMANDS

Arrange



---

### ***Special Consideration:***

1. If you think you may want to return your spreadsheet to its original sort order, use the **Replicate** command to create a separate row or column containing sequential numbers prior to using **Arrange**.
2. When you **Arrange** a spreadsheet you are in fact declaring that the relationships among the cells are no longer needed (at least temporarily), and that you prefer a new arrangement determined by the current values of a row or column. Therefore, in most cases there is no meaningful formula adjustment possible. For example, the formula **SUM(A1:A6)** can't be adjusted properly if those five columns are no longer contiguous. For that reason, it is usually best not to adjust formulas during an **Arrange**, and accordingly, the default is **No**. Re-sorting on the extra row or column (See Special Consideration 1) restores the original formula and cell relationships. In those cases where an adjust may be meaningful, you can override the default.
3. To protect yourself against changing your spreadsheet in ways that you do not anticipate, **Save the spreadsheet to a disk file** prior to using **Arrange**.



## THE SLASH COMMANDS

### Blank

#### BLANK

**Synopsis:** Erases the contents and resets the formatting of the cell range.

/ Blank ————— range **CR**  
                          **CR** for active cell only

The **Blank** command deletes the contents of all unprotected cells in the specified range. The display format is reset to the default settings for cells formatted at the "Entry" level.

Omit the Range to blank the Active Cell.

#### **Examples:**

Blank single cell:	/Blank,C7 [CR]
Blank partial row:	/Blank,C7:H7 [CR]
Blank block of cells:	/Blank,C7:H12 [CR]
Blank entire column:	/Blank,C [CR]
Blank all unprotected cells:	/Blank,ALL [CR]

#### **Special Considerations:**

1. **Blank** sets the default display format conditions for cells that are formatted at the "Entry" Level only. **Blank** does not affect the cell format of cells formatted at the "Row", "Column" or "Global" levels.

## THE SLASH COMMANDS

Copy



### COPY

**Synopsis:** Duplicates cells into a new spreadsheet location. Options allow a choice of formula adjustment or consolidation arithmetic.

/ Copy —————— from range , - to upper/left cell [CR adjust  
, options ]  
No adjust  
Ask for adjust  
Values only  
+ - \* /

#### **Command Description:**

The Copy command makes a one-to-one duplicate of the Source Range into the Destination Range. Copy duplicates the cell contents, cell values and display formats exactly. The Source Range remains intact.

The Destination Cell becomes the upper left corner of the Destination Range. The Destination Range takes on the same size and shape as the Source Range.

The options allow you to specify Formula Adjustment or Consolidation arithmetic for the Destination Range. A [CR] provides the default option, formula adjustment. To select another option, enter a comma [,] and specify the remaining options.

**[CR]** Formula Adjust — The default selection copies and adjusts formulas to their new location. See Chapter 8.

- N** **No Adjust** — Copies cell contents literally with no formula adjustment.
- A** **Ask for Adjust** — Prompts for formula adjustment for each cell copied. The Command line displays the formula and the Prompt line displays the source cell. SuperCalc<sup>2</sup> prompts for each cell reference adjustment.
- V** **Values** — Copies cell values only as numeric constants. Formulas are evaluated and their values only (not the actual formulas) are copied. Dates change to their DVAL function value.
- +** Adds each source cell value to the corresponding destination cell value and enters the sum into the destination cell as a numeric constant.



## THE SLASH COMMANDS

### Copy

---

- Subtracts each source cell value from the corresponding destination cell value and enters the difference into the destination cell as a numeric constant.
- \* Multiplies each source cell value with the corresponding destination cell value and enters the product into the destination cell as a numeric constant.
- / Divides each destination cell value by the corresponding source cell value and enters the quotient into the destination cell as a numeric constant.

#### **Examples:**

Copy cell to cell:

**/Copy,B9,C12 [CR]**

Copy partial column to partial column:

**/Copy,B9:B12,H9 [CR]**

Copy partial row to partial row:

**/Copy,B9:G9,H12 [CR]**

Copy block to block:

**/Copy,B9:G15,K20 [CR]**

Copy without adjustments:

**/Copy,B9,C12,N [CR]**

Copy, ask for individual choice of adjustments:

**/Copy,B9:B15,E9,A [CR]**

#### **Special Considerations:**

1. The +, -, \*, / options do not affect a cell that does not contain a "Form" (formula) entry with a numeric value.
2. The +, -, \*, / options perform the indicated calculation between cells, and replaces the destination cell contents with the calculated value as a numeric constant.

## THE SLASH COMMANDS

Copy



- 
- 3. The Left Cursor key "Backs Out" of the option list to let you select the default [CR]. See Chapter 4.
  - 4. See The Load command for more details on Consolidation.
  - 5. Cells can be copied into themselves. This can be used for such things as freezing values, or for saving memory. For example, you can generate a series such as 1...20 without using computer memory for a formula with the following sequence.
    - 1. Enter [1] in A1.
    - 2. /Replicate,A1,A2:A20 [CR]
    - 3. /Copy,A1:A19,A2,+

Then, to generate a table of numeric squares.

- 4. /Copy,A1:A20,A1,\*

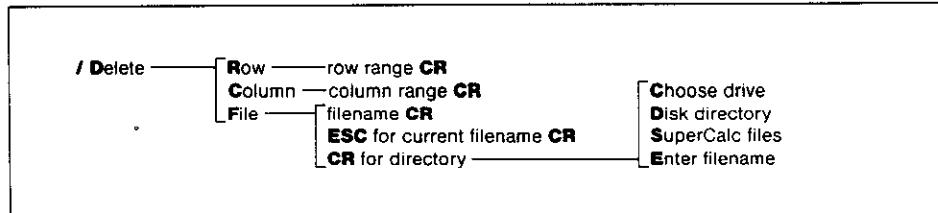


## THE SLASH COMMANDS

### Delete

## DELETE

**Synopsis:** Erases a row range, column range or disk file.



### Command Description:

The Delete command erases a row range or column range from your spreadsheet, or a file from your disk.

Delete erases the row range or column range, then moves the adjacent rows or column to fill in the gap created. Formulas adjust to compensate.

The Delete,File option erases a file name from the disk directory of a diskette. If the [ESC] key is pressed in response to the filename prompt, the name of the last file Loaded is placed on the entry line. If a [CR] is entered, SuperCalc<sup>2</sup> allows you to examine the directory of files on your disk.

### Examples:

To delete row 5:

**/Delete,Row,5 [CR]**

To delete column E:

**/Delete,Column,E, [CR]**

To delete file "WORK1.CAL":

**/Delete,File,WORK1 [CR]**

To delete multiple rows:

**/Delete,Row,5:10 [CR]**

To delete multiple columns:

**/Delete,Column,B:F [CR]**

## THE SLASH COMMANDS

Delete



---

### ***Special Considerations:***

1. Formulas adjusted into cells that no longer exist are considered an ERROR. See Chapter 8 for more information on ERROR.
2. There is no provision to not adjust formulas.
3. If a deleted row range or column range is within the block range specified by a function reference (such as SUM(A1:D10)), the formulas adjust. If a deleted row/column range includes one of the extreme rows/columns of the block range specified by a function reference (such as SUM(A1:D10)), an error message results.
4. If a deleted row or column contains a protected cell, an error message results.
5. Rows or columns containing data cannot be reaccessed once they are deleted.

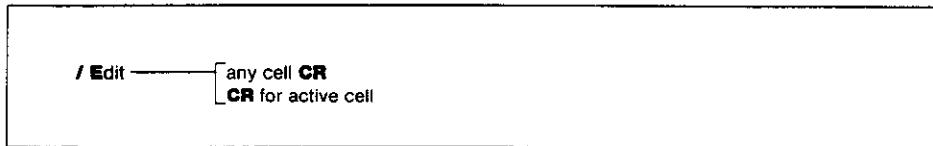


## THE SLASH COMMANDS

### Edit

## EDIT

**Synopsis:** Edits the contents of a cell and places it in the Active Cell.



### **Command Description:**

The **Edit** command is used to alter the contents of a source cell and place it into the Active Cell. **Edit** copies the source cell contents to the Edit line where it may be altered as any other data entry. A **[CR]** places the data on the edit line into the Active Cell.

You may specify any cell as the source cell. If you do not specify a source cell, the Active Cell becomes the source cell.

**Edit** uses the in-line editor. The editing commands are identical to Data Entry.

### **Example:**

The Active Cell contains "Janaurry. /Edit and [CR] brings this to the entry line. Use the left arrow to move the cursor to the second "a" in Janaurry. Type "ua." Move cursor right to one of the "r"s in Januarry. Press the down arrow to delete it, and press [CR]. (Remember, pressing [CR] puts the entire entry into the cell no matter where the cursor is position.) The Active Cell now contains "January."

### **Special Considerations:**

1. See the section on Edit Cursor Control for a detailed description of the cursor commands available. (Chapter 4.)
2. You cannot edit into a protected Active Cell, but you may edit another protected source cell.
3. The Current Cell **[ESC]** key may be used to specify a source cell. Press **[ESC]** to enter the current cell function, then move the spreadsheet cursor to the source cell and press **[ESC]** again to enter that cell. See the "ESC for Current Cell" section in Chapter 4.
4. The **[TAB]** key moves the cursor to the beginning of the edit line. If it is already at the beginning the cursor moves to the end of the line.

## THE SLASH COMMANDS

Format



### FORMAT

**Synopsis:** (1) Sets the cell display format on four levels; global, column, row and entry.

(2) Defines the User-defined formats.

/ Format	Global	Integer for no decimals
	Column — column range ,	General for numbers with best fit
	Row — row range ,	Exponential numbers only
	Entry — range ,	\$ for two decimal places
		Right numeric justification
		Left numeric justification
		TR text right justification
		TL text left justification
		* for bar graph
		User-defined format table—(1-8)
		Hide values
		Default settings,(G, R, TL, 9)
		(0-127) column width

#### Command Description:

The Format command specifies display format characteristics. To select the display format options you first select the level of format.

Format only affects the display of the cell value. It does not affect the cell value itself or the cell content. The display format controls both the screen image and the printed output.

Successive formatting commands may result in a conflict of formats for a given cell. For example, you may format an entire spreadsheet using Global and then specify a different format for a Row. Or you may format a Row and a Column differently. Where formats differ, SuperCalc<sup>2</sup> uses the following order of precedence.

1. Entry
2. Row
3. Column
4. Global

Thus, if you specify options using the Global level, then later select different options for a column, the Column options override the Global options for that column. Similarly, if you select options for a row, the cell that intersects the column takes on the Row options. Finally, any cells specified using Entry override all other specifications.



## THE SLASH COMMANDS

### Format

---

SuperCalc<sup>2</sup> prompts with the format options.

(I,G,E,\$,R,L,TR,TL,\*,U(1-8),H,D,column width)

- I** Integer — Displays numbers as integers, rounding as necessary to produce whole numbers. No decimal point displays.
- G** General — Displays numbers as an integer if the number is an integral value, or in decimal format if the column width allows. Numbers larger than the column width display in Exponential format.
- E** Exponential — Displays numbers in exponential form using conventional scientific notation. Numbers are expressed as a power of ten containing one significant figure to the left of the decimal point. The letter "e" delineates the numeral from the order of magnitude. For example, 1776 is 1.776e3.
- \$** Dollar Sign — Displays numbers with two digits after the decimal point. The character [\$] does not display. To display the \$, use the "Floating \$" User-defined format option.
- R** Right justifies formula values including dates and textual values.
- L** Left justifies formula values including dates and textual values.
- TR** Right justifies text entries.
- TL** Left justifies text entries.
- \*** Graphic Format — Displays asterisks to represent numbers. Use this format to create a bar graph. For example the number 1 displays as 1 asterisk, the number 5 as five asterisks, etc.
- U(1-8)** User-defined format — Displays the cell value according to the characteristics defined in the selected column of the User-defined format table.
- H** Hide causes the cell to display as blank. The value does not display on screen nor print on the printer. The Cell Content is not affected.

## THE SLASH COMMANDS

### Format



**D** Default returns the display format to its initial settings. The default display format settings are:

**G** General  
**TL** Text Left Justification  
**R** Right numeric justification  
**9** column width

**(0-127)** Enter a number (0-127) to set the column width between 0-127. Column width can be set for **Global** and **Column** formats only, not for **Row** and **Entry** formats.

### User-Defined Formats

The Define option specifies seven display properties for eight User-defined formats. Any of the eight User-defined formats may contain any combination of properties.

The User-Defined format has two aspects.

1. You specify the properties for each format using a built-in table of options.
2. You assign the formats to the cells that you want to contain those properties. To change the properties of a group of cells, all you need to do is redefine the format in the format table. The displays are changed automatically.

The Define option shows you the default User-defined format table. You can move the cursor to any location in the format table and your choices display in the prompt line.

	User-defined formats							
	1	2	3	4	5	6	7	8
Floating \$	Y	Y	Y	Y	Y	Y	Y	Y
Embedded Commas	Y	Y	Y	Y	Y	Y	Y	Y
Minus in ( )	N	N	N	N	N	N	N	N
Zero as Blank	N	N	N	N	N	N	N	N
%	N	N	N	N	N	N	N	N
Decimal Places	2	2	2	2	2	2	2	2
Scaling Factor	0	0	0	0	0	0	0	0

CTRL-Z to return to spreadsheet.



## THE SLASH COMMANDS

### Format

---

The prompt line shows the valid choices, either Y/N or 0-7. Each property is described below.

#### Floating \$

**Y** Precedes numeric values with a Dollar Sign [\$].

**N** A Dollar Sign is not used.

Note: This property is not the same as the \$ option from the /Format options list, which displays numbers using 2 decimal places, but without a dollar sign.

#### Embedded Commas

**Y** Enters a comma between every third place to the left of the decimal for a numeric value.

**N** No commas are entered into numeric data.

#### Minus in ( )

**Y** Encloses negative numeric values in parentheses. Positive numbers are shifted one place to the left to align the decimal point with negative numbers in the same column. Note that on some equipment negative numbers also display in red.

**N** Precedes negative numeric values with a minus sign [-].

#### Zero as Blank

**Y** Displays a blank if the numeric value of the cell is zero.

**N** Displays a zero if the numeric value of the cell is zero.

#### %

**Y** Multiplies a numeric value by 100 and expresses it as a percent with a [%] appended.

**N** The numeric value is unaffected.

## THE SLASH COMMANDS

### Format



#### Decimal Places (Alignment)

**0-7** Specifies the number of digits displayed after the decimal point. Internally, SuperCalc<sup>2</sup> continues to work with 16 decimal places.

Note: Setting this value to 2 has the same effect as the Format,\$ option.

#### Scaling Factor

**0-7** Specifies the power of ten by which the number displayed is scaled down. The cell value is divided by the power of 10 indicated. For example, a scaling factor of 3 displays the actual cell value divided by 1000 (in "thousands").

#### Format Types

There are four types of display format characteristics. Each cell has one and only one format characteristic from each category in effect at any given time. When you assign a new display format option, it replaces the current one for that category.

The Format,Default option (category 5) resets the default display formats for each of the four categories.

##### 1. Numeric representation

I	Integer
G	General
E	Exponential
\$	Dollar format
*	Graphic display
U(1-8)	User-defined format
H	Hide (Note: Also hides "Text" and "Rtxt" entries).

##### 2. Formula justification, including numeric, date and textual values

R	Right numeric justification
L	Left numeric justification

##### 3. Text justification

TR	Right text justification
TL	Left text justification

##### 4. Column width

**(0-127)** Set the column width to the designated number.



## THE SLASH COMMANDS

### Format

---

5. The **Default** option sets the following options, one from each category.

<b>G</b>	General
<b>R</b>	Right numeric justification
<b>TL</b>	Left text justification
<b>9</b>	column width

#### *Examples:*

Format column E to be 12 characters wide:

**/Format,Column,E,12 [CR]**

Format rows 7 to 12 to be TextRight:

**/Format,Row,7:12,TextRight, [CR]**

Globally format spreadsheet for dollar format and 11 character column width:

**/Format,Global,\$,11, [CR]**

Format block for exponential format:

**/Format,Entry,A7:H8,Exponential, [CR]**

#### *Special Considerations:*

1. A cell takes on the format of the highest format option used to define it. The precedence order is:

**Entry**  
**Row**  
**Column**  
**Global**

When you select the **Format,Default** option, the cell takes on the properties of the level under it.

2. You may specify as many options as you wish on the Format command line. However, only the last option you specify from each format type category will be in effect.

## THE SLASH COMMANDS

Format



- 
- 3. When SuperCalc<sup>2</sup> first loads, all cells display as "Format,Global, Default". The default sets the following:

**G** General  
**R** Right numeric justify  
**TL** Left text justify  
**9** column width

- 4. To cope with "narrow" columns when displaying numeric values, SuperCalc<sup>2</sup> has several tactics:
  - a. Round off and drop the right most mantissa digits (the digits to the right of the decimal point).
  - b. Omit the decimal point, i.e. display in Integer format.
  - c. Display [>>>] characters when the integer will not fit in the column.
- 5. The number of decimal places displayed is affected by the display option and the column width selected. SuperCalc<sup>2</sup> always uses a full 16 digits when calculating. This may result in displayed numbers not "adding up," when, for example, the Format,\$ is used. The ROUND function (Chapter 8) may be used to force SuperCalc<sup>2</sup> to calculate to a certain limited precision (for example pennies).
- 6. The User-defined format table is Saved with the spreadsheet on disk, and is reset to the default state (all Floating Dollar, Embedded Commas and two decimal places) by Zap,Yes. Zap,Contents preserves the state of the table.



## THE SLASH COMMANDS

### Global

## GLOBAL

**Synopsis:** Set the spreadsheet global options.

```
/ Global      Formula display (on/off)
              Next move (on/off)
              Border display (on/off)
              Tab cursor lockout (on/off)
              Row or Column calc. order
              Manual or Auto recalculate
```

### **Command Description:**

The **Global** command specifies the global display and calculation options. These options specify settings for the entire spreadsheet.

- F** The **Form**. option alternates the spreadsheet between displaying the cell contents and the cell values. The cell contents is the literal data entered into the cell, such as a formula or a number. The cell value is the result of evaluating the cell content, such as the number produced by evaluating the formula.
  - When F is off, Formula cells display the cell values.
  - When F is on, Formula cells display the cell contents.
- N** The **Next** option turns off/on the spreadsheet cursor "auto-advance." The default is "on."
  - When Next is on, the spreadsheet cursor advances in the current direction after an entry of data with a [**CR**]. The current direction displays in column one of the Active Cell Status line. It is determined by the direction of the prior cursor move.
  - When Next is off, the spreadsheet cursor does not advance. The cursor direction indicator is absent from the Active Cell Status line.

## THE SLASH COMMANDS

Global



**B** The **Border** option turns on/off the display of the column/row borders. The border is the number column along the left side and the letter row along the top of the spreadsheet. The default is "on."

- When the border is on, it is displayed on the console and printed with the report.
- When the border is off, it does not display on the console, nor print with the report.

**T** The **Tab** option turns on/off the cursor lockout option. In the **Tab** mode, the cursor automatically jumps to only non-blank, non-protected cells. The **Tab** option is useful to speed data entry by skipping designated cells. The default is off.

- When the tab option is off, the spreadsheet cursor may be positioned in any cell.
- When the tab option is on, the spreadsheet cursor keys can position the cursor in non-blank, non-protected cells only.

See the **X(eXecute)** section for details on how to construct a "black box" or "canned" application using **Global**, **Tab** and **X(eXecute)**.

Note: The "Go To" [=] command can position the cursor at any cell, even when the **Tab** option is on.

**R,C** Specifying **Row** or **Column** determines the order that SuperCalc<sup>2</sup> calculates your spreadsheet. All calculations begin with cell A1. The default is Row-wise calculation.

- R** **Row** calculates cells across a row from left to right before moving down to the next row.
- C** **Column** calculates cells down a column from top to bottom before moving right to the next column.

**M,A** Specifying **Manual** or **Auto** determines when SuperCalc<sup>2</sup> recalculates your spreadsheet. The default is **Auto**.

- A** **Auto** automatically recalculates the entire spreadsheet each time new data are entered or after an **Arrange**, **Blank**, **Copy**, **Delete**, **Load**, **Move** or **Replicate** command is executed.
- M** **Manual** requires you to use the [!] command to force recalculation.



## THE SLASH COMMANDS

Global

---

Note that since the **Manual/Auto** status is saved with the spreadsheet on disk, the calculation after a **Load,All** depends on the state in which the spreadsheet was saved.

### *Special Considerations:*

1. The **Manual** option is especially helpful when you have a large spreadsheet and are entering a significant amount of data as you do not have to wait for recalculation each time. On the other hand, **Auto** recalculation always keeps your spreadsheet up-to-date.
2. When both the **Tab** option and **Next** option are on, the cursor moves automatically to the next unprotected, non-blank cell after data entry.
3. See the **X(eXecute)** command.

## THE SLASH COMMANDS

Insert



### INSERT

**Synopsis:** Inserts an empty row range or column range and adjusts formulas.

```
/ Insert ————— Row ————— row range CR  
                  Column ————— column range CR
```

#### **Command Description:**

The Insert command adds a row range or column range and adjusts the formulas for the remainder of the spreadsheet. Columns move to the right of the inserted columns and rows move down from the inserted rows. If there are cells in any row that would be pushed past 254 or column past BK, SuperCalc<sup>2</sup> won't allow the insert. You must first delete an appropriate number of rows/columns, then retry the insert.

#### **Examples:**

Insert a row between rows 4 & 5:

**/Insert,Row,5 [CR]**

Insert 3 columns between columns D & E:

**/Insert,Column,E:G [CR]**

#### **Special Considerations:**

1. There is no provision to not adjust formulas.

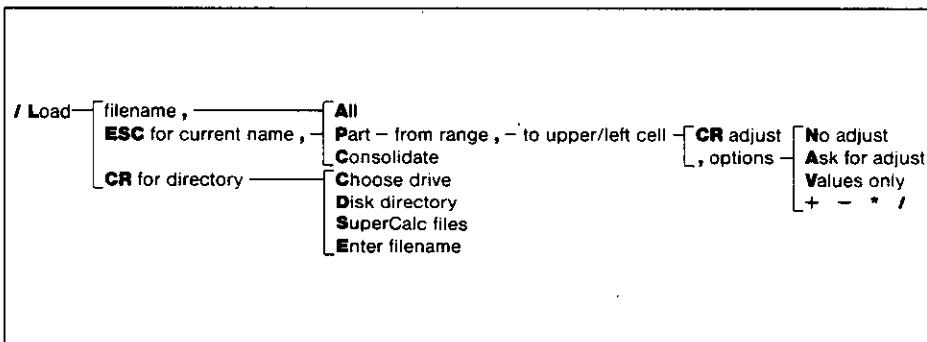


## THE SLASH COMMANDS

### Load

## LOAD

**Synopsis:** Load the spreadsheet contents, values and format settings from a disk file. You may load all or part of the spreadsheet at a location you specify. Options give a choice of formula adjustment or values only or consolidation arithmetic.



### Command Description:

The Load command reads the cell contents, cell values and format settings from a disk file into the current spreadsheet. You may load **All** or **Part** of a spreadsheet.

Enter the name of the file you wish to load preceded by the disk drive, if necessary. SuperCalc<sup>2</sup> looks for a file with the .CAL extension unless you specify otherwise.

If the [**ESC**] key is pressed in response to the filename prompt, the name of the last file Loaded is placed on the entry line. If a [**CR**] is entered, SuperCalc<sup>2</sup> allows you to examine the directory of files on your disk.

When you load **All** of the spreadsheet it loads exactly in the form that it was saved.

The **Consolidate** option sums the contents of corresponding cells of a disk file with the contents of the spreadsheet file. When you select the consolidate option, corresponding cells of the disk file are added to the value of the spreadsheet file and the sum replaces the contents of the spreadsheet cell.

To load a partial spreadsheet, first specify **Part**, then specify the source cell range. The destination cell becomes the upper left corner of the region to be loaded. SuperCalc<sup>2</sup> assumes that the range of the destination will be the same size as the source range. **Column**, **Row**, **Global**, **User-defined** formats and settings such as **Global**, **Manual**, **Active Cell** position, **Current cursor direction** and **Window** and **Title** information are not loaded with a partial load. **Cell Entry** formats are loaded.

## THE SLASH COMMANDS

Load



---

The options allow you to specify Formula Adjustment or Consolidation arithmetic for the Destination Range. A [CR] provides the default option, formula adjustment. To select another option, enter a comma [,] followed by the option.

### Formula Adjustment Options

[CR] **Formula Adjust** — The default selection copies and adjusts formulas to their new location.

- N No Adjust** — Copies cell contents literally with no formula adjustment.
- A Ask for Adjust** — Prompts for formula adjustment for each cell copied. The Command line displays the formula and the Prompt line displays the source cells. SuperCalc<sup>2</sup> prompts for each cell reference adjustment.
- V Values** — Copies cell values only as numeric constants. Formulas do not copy. Dates change to their DVAL function value.

### Consolidation Arithmetic Options

- +** Adds each source cell value to the corresponding destination cell value and enters the sum into the destination cell as a numeric constant.
- Subtracts each source cell value from the corresponding destination cell value and enters the difference into the destination cell as a numeric constant.
- \*** Multiplies each source cell value with the corresponding destination cell value and enters the product into the destination cell as a numeric constant.
- /** Divides each destination cell value by the corresponding source cell value and enters the quotient into the destination cell as a numeric constant.

The effect of a consolidation arithmetic operation depends upon the contents of the corresponding spreadsheet and disk file cells. There are four cases to consider.

- A blank spreadsheet cell and a blank disk file cell result in a consolidated blank cell.
- A blank spreadsheet cell and a non-blank disk file cell result in a consolidated blank cell.



## THE SLASH COMMANDS

### Load

- A non-blank spreadsheet cell and a blank disk file cell result in a consolidated cell that is unchanged from the formula spreadsheet cell.
- A numeric spreadsheet cell and a numeric disk file cell result in a consolidated cell that is the result of performing the selected operation.

The following table summarizes the above.

		DISK	
		Blank	Formula*
SPREADSHEET	Blank	Blank	Blank
	Formula*	Spreadsheet Content	Spreadsheet + Disk File Value

\*The following types of cells are not affected:

Text String cells  
Protected Formula cells  
Date cells  
Textual Value cells  
N/A cells  
ERROR cells

You can "Load" a disk file on top of a spreadsheet file. Corresponding cells of the disk file replace those of the current spreadsheet file. There are four cases to consider.

- A blank spreadsheet cell and a blank disk file cell result in a blank cell.
- A blank spreadsheet cell and a non-blank disk file cell result in the contents of the disk file cell.
- A non-blank spreadsheet cell and a blank disk file cell result in the contents of the non-blank spreadsheet cell.

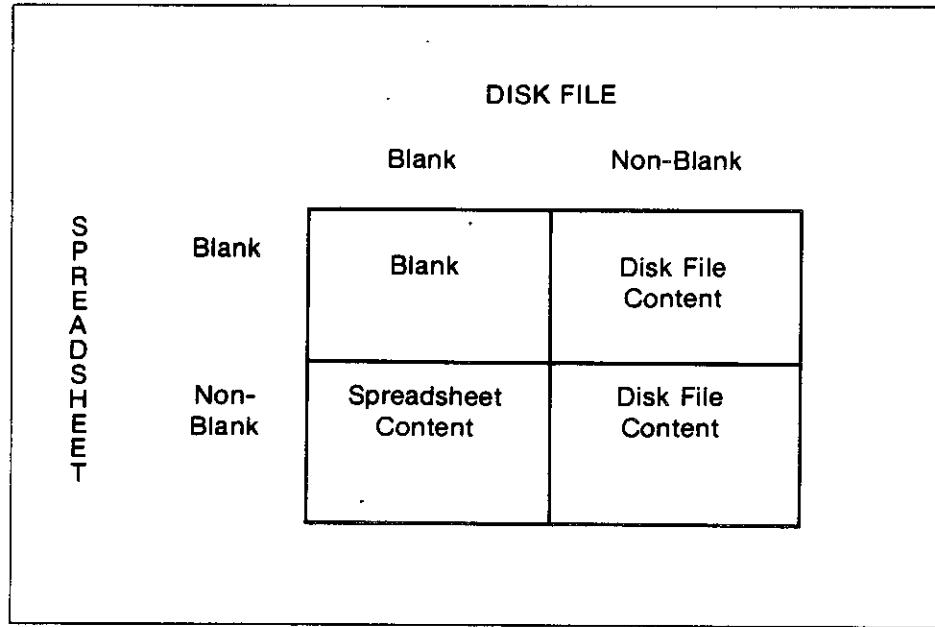
## THE SLASH COMMANDS

Load



- A non-blank spreadsheet cell and a non-blank disk file cell result in the contents of the non-blank disk file cell.

The following diagram illustrates each case:



### **Examples:**

To load an entire file from the system drive:

**/Load,QUARTER,All**

To load part of a file on drive B:

**/Load,B:INCOME,Part,F4:F25,A4,Values**

To replace a section of the current contents of the spreadsheet with that of a disk file:

**/Load,filename,Part,C3:F20,C3 [CR]**

To sum the values of the current spreadsheet with those of a disk file:

**/Load,filename,Consolidate**

To sum the values of a section of the current spreadsheet with those of a disk file:

**/Load,filename,Part,C3:F20,C3,+**



## THE SLASH COMMANDS

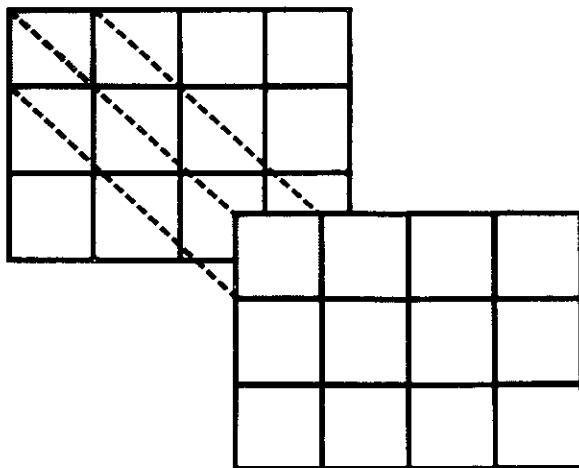
### Load

---

#### *Special Considerations:*

1. If there are protected cells in the destination area, they will remain unchanged.
2. See the SuperCalc<sup>2</sup> File Directory section at the beginning of this chapter.
3. The following two commands options produce identical results:

**/Load,filename,Consolidate  
/Load,filename,Part,A1:BK254,A1,+**



## THE SLASH COMMANDS

Move



### MOVE

**Synopsis:** Moves a row range or column range to a new location and adjusts the formulas.

```
/Move ————— [Row ——— from row range , ——— to row number CR  
Column ——— from column range , ——— to column letter CR]
```

#### **Command Description:**

The Move command transfers the column range or row range to a new location. The formulas adjust without destroying any data or formatting. You move a column range left or right. The columns between the old and new locations move in the opposite direction to fill in the space. You move a row range up or down. The rows between the new and old location move in the opposite direction to fill in the space.

Formulas on the spreadsheet adjust as necessary to preserve references to cell contents at the new locations.

#### **Examples:**

Move row 5 between rows 11 and 12:

```
/Move,Row,5, 12 [CR]
```

Move columns C to E between columns I and J:

```
/Move,Column,C:E, J [CR]
```

#### **Special Considerations:**

1. There is no provision to move without formula adjustment.
2. See the Delete and Insert commands.

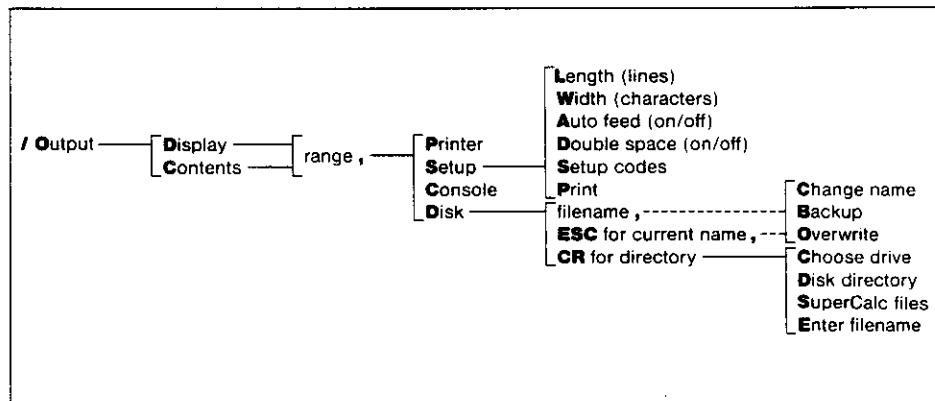


## THE SLASH COMMANDS

### Output

## OUTPUT

**Synopsis:** Writes all or part of the spreadsheet to the printer, the terminal or a disk file. Options allow writing the displayed information or the cell contents listing.



### Command Description:

The **Output** command writes all or part of the spreadsheet to the printer, the terminal, or a text file on disk. If you write your report to a disk file, you can use the SuperWriter™ program (or other word processing programs) to edit or reformat your report before printing. You can include SuperCalc<sup>2</sup> reports in other documents as you wish.

Your first option selects the mode of the output.

- D** The **Display** option outputs the spreadsheet as it displays on the terminal. You may display the cell values in any display format or display the cell content.
- C** The **Content** option lists the cell contents one per line. The information includes the display format (entry level only), the protection status, and the cell content.

Your next option selects the range to output. Specify a cell, partial row, partial column, block or "All" for the entire spreadsheet.

Your third option selects the output device.

- P** **Printer** sends your report to the printer. The default line length is 132 and the page length is 66. If your spreadsheet exceeds the line length, SuperCalc<sup>2</sup> prints as many columns as it can on one page and prints the excess columns on another page. Use **Setup** to alter the defaults before printing.

## THE SLASH COMMANDS

Output



- 
- S** Setup allows you to change the default printing specifications. You may change any or all of these specifications. Use this option before printing to change such things as print 80 columns and compressed format.
  - L** Length specifies the number of lines per page. The default is 66. You may select from 0-255 lines. If you specify zero, the report prints continuously with no top or bottom margins.
  - W** Width specifies the number of characters per line. The default is 132. You may select from 0-255 characters. Width does not affect the terminal display width. You can alter the display width on a file written to disk. See Special Consideration 4.
  - A** Auto Form Feed. When Auto Form Feed is off, you must press the space bar after each page to continue print. When auto form feed is on, the printer does not stop after printing each page. The default is off.
  - D** Double Space Report Setting. When Double Space is off, you get a single spaced report. When Double Space is on, you get a double spaced report. The default is off.
  - S** Setup specifies any initialization string to send to your printer to initiate special functions, such as compressed type or bold face type. These specifications remain in effect until you either change them or quit SuperCalc<sup>2</sup>, in which case the defaults are reset. They are not stored on disk with the file. When entering manual setup codes, enter the actual control sequences, not the Hex values for those sequences. The proper sequences are in your printer operator manual. Make sure your printer is turned on and on line before setting these options. For example, to put an Epson MX80 printer into compressed print mode, enter a [CTRL-O]. The screen does not display anything, but the [CTRL-O] is sent to the printer. You may send a string of any length, terminated with a [CR].
  - P** Print sends your report to the printer using the specifications you have set.
  - C** The Console option displays the output on your terminal or "console." This option is useful for checking your report before printing.



## THE SLASH COMMANDS

### Output

---

- D** Disk sends your report to a disk file. The report is saved on the disk in the same form as it appears on your console or prints on the printer. SuperCalc<sup>2</sup> gives the filename the .PRN extension unless you specify otherwise in the filename.

If the [ESC] key is pressed in response to the filename prompt, the name of the last file Loaded is placed on the entry line. If a [CR] is entered, SuperCalc<sup>2</sup> allows you to examine the directory of files on your disk.

If you specify the name of an existing file, SuperCalc<sup>2</sup> gives you the following options.

- C** Change Name. You may edit or change the name of the file here.
- B** Backup changes the extension of the existing file to .BAK and then writes your spreadsheet onto the disk using the .CAL extension. Your old file remains unchanged and is available as a backup. If a .BAK file already exists, it is deleted permanently from the disk prior to the renaming.
- O** Overwrite erases the old file from the disk and creates a new file of the same name containing your current spreadsheet.

A .PRN text file may be used in conjunction with other programs such as SuperWriter. You can enhance the report, include it in your documents and/or otherwise use the full range of editing capability of your text editor.

Note: The .PRN file produced is not the same as the .CAL file produced by the Save command. The .PRN file is an ASCII file that can be edited using SuperWriter or other text editor. SuperCalc<sup>2</sup> cannot "load" a .PRN file. A .CAL file is a binary file and cannot be edited with SuperWriter.

#### *Examples:*

Output display report to the printer:

**/Output,Display,ALL,Printer**

Output content report of row B to printer, changing to print on continuous forms:

**/Output,Contents,B,Setup,Length,O,[CR],Print**

## THE SLASH COMMANDS

### Output



---

Remove borders and output to a disk file:

```
/Global,Borders  
/Output,Display,A1:J23,Disk,B:WORK1 [CR]
```

To send an initialization string to your printer to perform special functions: (In this case [**CTRL-O**])

```
/Output,Display,ALL,Setup, [CTRL-O], [CR], Width, 233,Print
```

This command line sets some printers to print compressed type, increases the number of characters per line (if you want to print more than 132 characters), and prints. These parameters are in use until you change them or quit the SuperCalc<sup>2</sup> program. When entering manual setup codes, enter the actual control sequences, not the Hex values for those sequences. You will find these in the manual for your particular printer. Make sure your printer is turned on and on line.

#### ***Special Considerations:***

1. See **X(eXecute)** for .XQT files that can be created on a spreadsheet, then saved using the **/Output** command.
2. See **Load and Save** for .CAL files
3. See the SuperCalc<sup>2</sup> File Directory section at the beginning of this chapter.
4. You can alter the width on a file written to disk. Select the **Setup Option**, and specify the width. There is no disk file option here, so use [**CTRL-Z**] to go back to the spreadsheet. The width setting still is in effect, so now use **/Output** again and select the **Disk write option**.
5. The Automatic Carriage Return/Line Feed may be configured using the **INSTALL** program. This sets the default setting of the **Auto Form Feed Setup Option**.
6. Text cell entries that extend past the last column specified (or the last column that contains an entry if **All** is specified) are "clipped" to the end of the last column.



## THE SLASH COMMANDS

### Protect

## PROTECT

**Synopsis:** Protects the cell contents and formatting of a cell range from change.

```
/Protect [range CR]  
CR for active cell only
```

### **Command Description:**

The **Protect** command prevents the cell contents and display formats of non-blank cells in a cell range from change. Data may not be entered, edited or the format changed for cells that are protected.

Omit the range to protect the Active Cell singularly.

### **Examples:**

Protect a specified cell:

**/Protect,C3 [CR]**

Protect a partial column:

**/Protect,C3:C9 [CR]**

Protect a partial row:

**/Protect,C3:G3 [CR]**

Protect a block:

**/Protect,C3:G9 [CR]**

Protect the Active Cell:

**/Protect [CR]**

### **Special Considerations:**

1. **Blank, Copy, Replicate and Load** all bypass protected cells. The commands operate normally on surrounding cells but leave the protected cells unchanged.

## THE SLASH COMMANDS

Protect



- 
- 2. Delete does not work on rows or columns containing a protected cell.
  - 3. Zap overrides protected cells to delete the entire spreadsheet. Protect has no effect on Zap.
  - 4. There is no error if you attempt to Protect cells that are already protected.
  - 5. See the Unprotect command.
  - 6. Protected cells display with a different attribute (intensity, color) from non-protected cells on some computers.



## THE SLASH COMMANDS

Quit

---

### QUIT

**Synopsis:** Exits from SuperCalc<sup>2</sup> to the operating system.

/ Quit	-----	[ Yes to erase all not saved & exit No to cancel this command To erase all & run another program — program filename CR ]
--------	-------	--

#### **Command Description:**

The **Quit** command exits SuperCalc<sup>2</sup>, returning you to the operating system.

**Yes** returns you to the operating system. The spreadsheet is erased from the computer's memory. **Save** it before **Quit** if you want to keep it.

**No** cancels the **Quit** command and returns you to SuperCalc<sup>2</sup>.

**To** allows you to go directly from SuperCalc<sup>2</sup> to any other program. Specify the name of the file you want to run (precede the name with a disk drive if necessary). SuperCalc<sup>2</sup> exits and the program you name begins.

If the **[ESC]** key is pressed in response to the filename prompt, the name of the last file **Loaded** is placed on the entry line. If a **[CR]** is entered, SuperCalc<sup>2</sup> allows you to examine the directory of files on your disk.

#### **Special Considerations:**

1. You can also cancel the **Quit** command using **[CTRL-C]** or **[CTRL-Z]**. Both have the same result as a **No** reply.

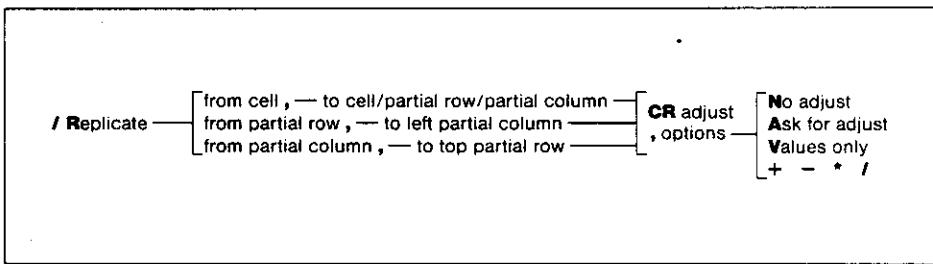
## THE SLASH COMMANDS

Replicate



### REPLICATE

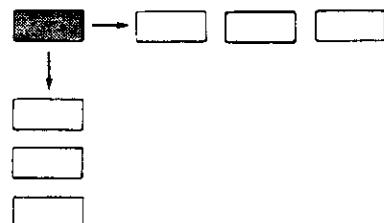
**Synopsis:** Makes a one-to-many copy of a cell to a group of cells, a partial column range to a group of partial columns, or a partial row range to a group of partial rows. Options give a choice of formula adjustment, values only, or consolidation arithmetic.



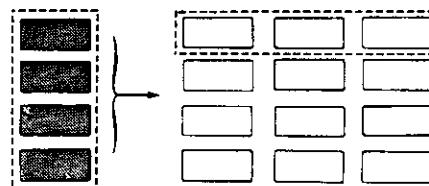
#### Command Description:

The Replicate command duplicates a one-to-many copy of the source range into a destination that is equal to or larger than the source. The source range may be a cell, partial row or partial column but not a block. Replicate can make the following duplications:

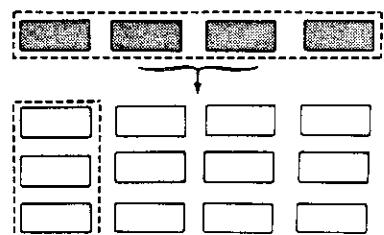
- A single cell into a partial column or partial row.



- A partial column into a group of partial columns. Specify the destination range by the left and right cells on the top row of the destination group.



- A partial row into a group of partial rows. Specify the destination range by the upper and lower cells for the left column of the destination group.





## THE SLASH COMMANDS

### Replicate

---

The options allow you to specify Formula Adjustment or Consolidation arithmetic for the Destination Range. A [CR] provides the default option, formula adjustment. To select another option, enter a comma [,] and the desired option.

[CR] **Formula Adjust** — The default selection copies and adjusts formulas to their new location.

- N** **No Adjust** — Copies cell contents literally with no formula adjustment.
- A** **Ask for Adjust** — Prompts for formula adjustment for each cell copied. The Command line displays the formula and the Prompt line displays the source cells. SuperCalc<sup>2</sup> prompts for each cell reference adjustment.
- V** **Values** — Copies cell values only as numeric constants. Formulas are evaluated and their values only (not the actual formulas) are copied. Dates change to their DVAL function value.
- +** Adds each source cell value to the corresponding destination cell value and enters the sum into the destination cell as a numeric constant.
- Subtracts each source cell value from the corresponding destination cell value and enters the difference into the destination cell as a numeric constant.
- \*** Multiplies each source cell value with the corresponding destination cell value and enters the product into the destination cell as a numeric constant.
- /** Divides each destination cell value by the corresponding source cell value and enters the quotient into the destination cell as a numeric constant.

#### ***Examples:***

Replicate a cell into a partial column:

**/Replicate,B12,E3:E8 [CR]**

Replicate a cell into a partial row:

**/Replicate,B12,E3:J3 [CR]**

## THE SLASH COMMANDS

Replicate



---

Replicate a partial column into a group of partial columns:

**/Replicate,B3:B7,D3:J3 [CR]**

In this example, the partial column is five cells deep. The result will be a block of cells repeating that partial column seven times. The top of that block is on row 3.

Replicate a partial row into a group of partial rows:

**/Replicate,B3:F3,G3:G5 [CR]**

The partial row here is five cells across. The result will be a block of cells repeating the partial row three times. The left side of that block is column G.

Replicate without adjustment:

**/Replicate,B12,E3:E8,N**

Replicate, ask for individual choice of adjustment:

**/Replicate,B12,E3:J3,A**

### ***Special Considerations:***

1. Using Replicate to make a one-to-one copy provides results identical to the Copy command.
2. Replicate can make multiple copies of a cell, row or column. Copy makes only single copies of a cell, row, column or block. Copy can do one thing Replicate cannot do. Copy can duplicate a block.

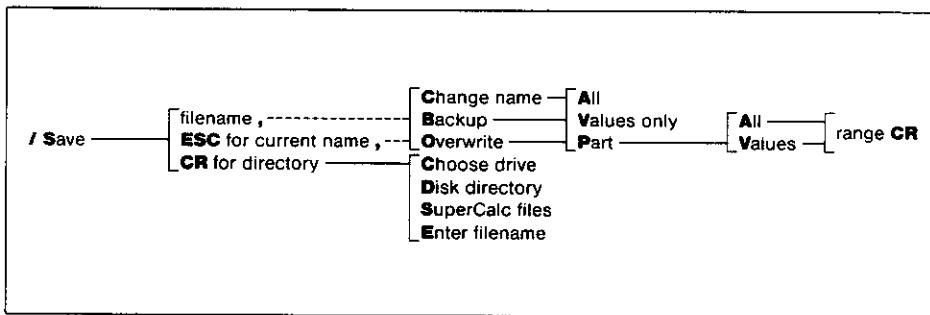


## THE SLASH COMMANDS

### Save

## SAVE

**Synopsis:** Writes the spreadsheet on a disk file. Options give a choice of saving the entire spreadsheet or values only.



### Command Description:

The **Save** command writes the spreadsheet onto a disk file while retaining it in computer memory. You may write the entire spreadsheet or only a portion of it. You may save the cell contents or only the values.

Enter the name for your file. SuperCalc<sup>2</sup> appends the file extension .CAL to the file unless you specify another.

SuperCalc<sup>2</sup> saves the file on the disk on which SuperCalc<sup>2</sup> resides unless you specify another. If the [ESC] key is pressed in response to the filename prompt, the name of the last file Loaded is placed on the entry line. If a [CR] is entered, SuperCalc<sup>2</sup> allows you to examine the directory of files on your disk.

If you specify the name of an existing file, the program gives you the following options.

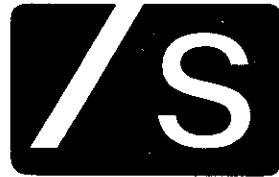
- C Change Name.** You may edit or change the name of the file here.
- B Backup** changes the extension of the existing file to .BAK and then writes your spreadsheet onto the disk using the .CAL extension. Your old file remains unchanged and is available as a backup. If a .BAK file already exists, it is deleted permanently from the disk prior to the renaming.

Note: To load a .BAK file, you must specify the .BAK extension.

- O Overwrite** erases the old file from the disk and creates a new file of the same name containing your current spreadsheet. Use with caution!

## THE SLASH COMMANDS

Save



---

You then specify the part of the file to save.

- A** All saves the entire file on disk. The cell contents, cell values and display formats are saved. Also, the global options, title locking, window splitting and Active Cell location are saved.
  - V** Values — The Cell Values are saved as numeric constants. Display formats are also saved. The Cell Contents are not saved.
  - P** Part saves the portion of the spreadsheet you specify.
    - A** All saves all the cell data for the partial spreadsheet.
    - V** Values saves only the values for the partial spreadsheet. Dates are stored as their DVAL value.
- SuperCalc<sup>2</sup> then prompts for the Cell Range.

### ***Examples:***

Save the entire file:

**/Save,WORK5,All**

Save the values of the spreadsheet on drive B:

**/Save,B:WORK5,Values**

### ***Special Considerations:***

1. See the SuperCalc<sup>2</sup> File Directory section at the beginning of this chapter.
2. For the Backup and Overwrite options, SuperCalc<sup>2</sup> deletes an existing file permanently from the disk, not just from the disk directory. Recovery is not possible, even with a disk utility program.
3. Save writes the file in binary format on the disk. That is, the file is readable by SuperCalc<sup>2</sup> but not by the SuperWriter program (or by other word processing programs). The file is readable by the SuperData™ program and the SuperChart™ program.
4. Use the Sorcim program "Super Data Interchange" to convert a .CAL file to a .CSV file. The .CSV file can be edited.
5. See the Output and X(eXecute) commands.



## THE SLASH COMMANDS

### Title

## TITLE

**Synopsis:** Locks columns, rows, or both into place on the display window.

```
/ Title [Horizontal lock  
Vertical lock  
Both  
Clear]
```

### **Command Description:**

The Title command locks columns/rows on the display window.

- A locked column scrolls vertically but not horizontally.
- A locked row scrolls horizontally but not vertically.
- A combination column/row lock does not scroll.

The Title options are:

- H** Horizontal locks the current row and all rows above it.
- V** Vertical locks the current column and all columns to the left of it.
- B** Both locks both the current row and column, and all rows above and columns to the left.
- C** Clears the title lock.

Specifying a new title lock replaces a prior one.

The cursor commands cannot move the spreadsheet cursor into a title lock area. Use the "GoTo" [=] command to do this.

### **Special Considerations:**

1. Any subsequent command that makes a title lock impossible to display, such as a /Format or /Window command causes SuperCalc<sup>2</sup> to clear the title lock. A message displays on the Active Cell Status line.

## THE SLASH COMMANDS



Title

- 
- 2. The title lock display is stored on a disk file. It does not transfer to the output such as to the printer or to a .PRN file. To print titles on other than the first page, you must move (or copy) the title column/rows to the desired location prior to printing. You will most likely need to print a rough draft to determine the proper column/row.
  - 3. An alternate method to print titles for other than the adjacent column to the title lock is to format "intervening" columns to a column width of zero, then print the spreadsheet.



## THE SLASH COMMANDS

### Unprotect

## UNPROTECT

**Synopsis:** Removes protection from a cell range.

```
/ Unprotect — [range CR  
CR for active cell only]
```

**Command Description:**

The **Unprotect** command removes protection from a range. There is no error if you attempt to unprotect cells that are not protected.

**Examples:**

To remove protection from a cell:

**/Unprotect,C3 [CR]**

To remove protection from a partial column:

**/Unprotect,C3:C9 [CR]**

To remove protection from a partial row:

**/Unprotect,C3:G3 [CR]**

To remove protection from a block of cells:

**/Unprotect,C3:G9 [CR]**

**Special Considerations:**

1. See the **Protect** command.

## THE SLASH COMMANDS

### Window



## WINDOW

**Synopsis:** Split the display window into two portions, horizontally or vertically.

```
/ Window — [Horizontal split  
Vertical split  
Clear to right or below split  
Synchronize split-wise scroll  
Unsynchronize split-wise scroll
```

### **Command Description:**

The **Window** command splits the display window into two separate parts. Each portion can have separate **Format** and **Global** options. **Window** uses the current row or column to determine where to split the display.

You move the cursor between windows with the **[;]** command from the spreadsheet mode.

The **Window** options are:

- H** Horizontally splits the screen. The current row moves down and the new border replaces it. The Active Cell moves down into the newly created screen.
- V** Vertically splits the screen. The current column moves right and the new border replaces it. The Active Cell moves right into the newly created screen.
- C** Clears the split screen. The window that is above or on the left displays in full. The global display options for that window remain in effect.
- S** Synchronizes scrolling in display windows when the cursor moves parallel to the split.
- U** Unsynchronizes scrolling. The display windows scroll independently.

Some global options can be set independently in each display window.



## THE SLASH COMMANDS

### Window

---

#### ***Special Considerations:***

1. Each portion has separate global display options (**Formulas**, **Next**, **Border**, and **Tab**) and **Title lock**.
2. Your spreadsheet can be **Saved** with the windows set, but cannot be **Output** showing both windows.

**Note:** You can print any or all of the spreadsheet regardless of which window contains the Active Cell. However, the window containing the spreadsheet cursor controls the print display format.

3. SuperCalc<sup>2</sup> can display the same cell in each window using different display **Formats** or **Global** display options, thus the same region of the spreadsheet may be viewed as formulas and values simultaneously.
4. Each **Window** of a split-screen display has its own **Title lock** specification. Any lock that is meaningful is retained in both windows after a screen is split.

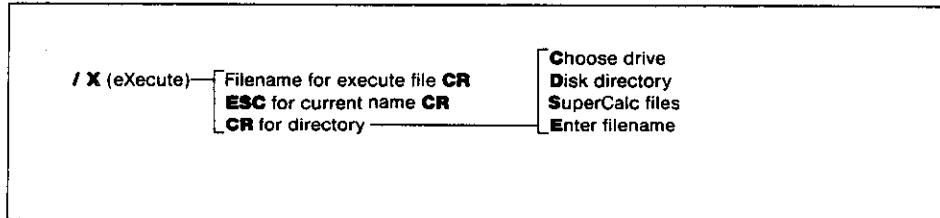
## THE SLASH COMMANDS

X (eXecute)



### X (eXecute)

**Synopsis:** Reads and executes commands from a disk file.



#### **Command Description:**

The X(eXecute) command enables you to create a disk file with commands and data that perform SuperCalc<sup>2</sup> operations automatically, without any keyboard entry. It has a suspend and resume feature that lets you pass control back and forth between the execute file and the keyboard (for example, to "black box" applications). By using X(eXecute) with suspend and resume, you can automate parts of the spreadsheet process such as loading and printing a pre-built file, while retaining the ability to accept keyboard entry, perhaps for data to be entered by an untrained user.

An execute file contains the exact characters you would type at your keyboard. Each line of the file contains exactly the characters you would press to execute a specific command. Characters that SuperCalc<sup>2</sup> supplies through its interpretive prompting must NOT be in the file. For example, for the Zap command, enter /Z into the execute file, not /Zap or /Z(ap). Every SuperCalc<sup>2</sup> operation is available, including cursor movement (represented by the keys ^, v, <, > for up, down, left, and right) and data entry.

#### **Execute Suspend/Resume**

To suspend automatic operation of an execute file and "unlock" the keyboard for data entry, include an ampersand [&] in the execute file. When the message "Awaiting keyboard entry" appears, the keyboard unlocks, and you can type in data or any SuperCalc<sup>2</sup> command.

There are two ways to resume automatic operation at the next character of the execute file:

1. Type an ampersand [&] command. The ampersand is recognized as a resume execute command when the SuperCalc<sup>2</sup> program is in Spreadsheet mode (i.e. such as when a [/] command would be recognized).



## THE SLASH COMMANDS

### X (eXecute)

---

2. When the last unprotected cell of the spreadsheet is entered, with Global Tabs and Next on (See the Global command), the execute file automatically resumes.

#### Creating An Execute File

Execute files may be created directly from SuperCalc<sup>2</sup>, or you may use SuperWriter or another word processing program. You may create "libraries" of execute files, and "call" them with the eXecute command.

To create an execute file from SuperCalc<sup>2</sup>, enter the command key strokes as text in column A, one command per cell. Output the file to disk giving it the .XQT extension. If you don't specify an extension, SuperCalc<sup>2</sup> automatically gives it the .PRN extension.

You can also specify an execute filename directly when you load SuperCalc<sup>2</sup> from your operating system. For example, to execute the file SAMPLE.XQT from the command line enter the following at your system prompt.

#### SC2 SAMPLE

SuperCalc<sup>2</sup> loads and executes the instructions located in the .XQT file. To stop execution, press [CTRL-C].

When you write an X(eXecute) command file to a disk, remember the following:

- The Border must be off. Use the /Global,Border command.
- The column width of Column A must be greater than the largest command string or commands will be truncated.
- Save the file as a .CAL file before outputting it in case you want to edit it later. Use the /Save command.
- Output the file to disk giving it the .XQT extension. Use the /Output command.

To start an X(eXecute) file, enter /X(eXecute) on the command line and then at the prompt specify the filename that you are using for your X(eXecute) file. The commands in the file will be carried out. You need only specify the name of the file since SuperCalc<sup>2</sup> will automatically seek that name in combination with the filename extension .XQT.

## THE SLASH COMMANDS

X (eXecute)

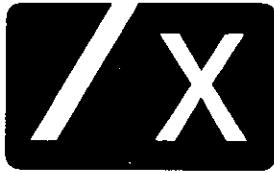


### **Examples:**

The first example shows a command file that consolidates twelve monthly statements into a yearly summary. First enter /Global, Border and /Format, Global,20 [CR]. Then enter the following data into column A as text. Remember that you begin a text entry with double quotes ["].

```
/ZY  
/FG$TR  
/FR51,TL  
/FCI,12  
=A1  
"JANUARY  
"FEBRUARY  
"MARCH  
"APRIL  
"MAY  
"JUNE  
"JULY  
"AUGUST  
"SEPTEMBER  
"OCTOBER  
"NOVEMBER  
"DECEMBER  
"TOTALS  
=A1  
/LJAN,PK2:K50,A2,V  
/LFEB,PK2:K50,B2,V  
/LMAR,PK2:K50,C2,V  
/LAPR,PK2:K50,D2,V  
/LMAY,PK2:K50,E2,V  
/LJUN,PK2:K50,F2,V  
/LJUL,PK2:K50,G2,V  
/LAUG,PK2:K50,H2,V  
/LSEP,PK2:K50,I2,V  
/LOCT,PK2:K50,J2,V  
/LNOV,PK2:K50,K2,V  
/LDEC,PK2:K50,L2,V  
=M2  
SUM(A2:L2)  
/RM2,M3:M50  
=A51  
'  
/FCL,12  
=L52  
"GRAND TOTAL  
SUM(M2:M50)  
/SYEAR1,A
```

Notice that at the end of our command file, we have saved the summary with the filename of YEAR1.XQT.



## THE SLASH COMMANDS

### X (eXecute)

The second example is a spreadsheet application that uses an execute file to load the model, await keyboard entry for sales and cost of sales figures, then print the calculated results and exit from SuperCalc<sup>2</sup>.

```
/LAUTOFIL,A  
/GB&  
/ODALL,P  
/QY
```

Spreadsheet before executing

	A	B	C	D	E
1					
2			Sample 'black boxed' file		
3			to be used with .xqt file		
4					
5		jan	feb	mar	qtr
6		---	---	---	---
7	sales				
8	cost percent				N/A
9	cost of sales				

Spreadsheet after executing

	jan	feb	mar	qtr
sales	\$5,555	\$6,666	\$7,777	\$19,998
cost percent	45%	45%	45%	N/A
cost of sales	\$2,500	\$3,000	\$3,500	\$8,999

## THE SLASH COMMANDS

X (eXecute)



---

Notice that:

1. Global Next is set on.
2. The entire spreadsheet is Protected except for the cells for which data are to be entered (cells B7, C7, D7 and B8). These cells require an initial value of zero for the Global Tabs to make the cursor stop in them.
3. User-defined formats are used to translate the initial zeros to blank, and the subsequent numbers to their proper format. In this example, the following User-defined settings were in effect:
  - U1 — floating dollars, commas, zeros as blanks, and 0 decimal places is used for Rows 7 and 9.
  - U2 — zeros as blank, 0 decimals is used for Row 8.

### *Special Considerations:*

1. See the SuperCalc<sup>2</sup> File Directory section at the beginning of this chapter.
2. See Output and Save.
3. An execute file must be an ASCII file. A binary file such as the .CAL files produced by the Save command cannot be executed.
4. [CTRL-D] in an execute file results in a 1/2 second delay in processing. You can use consecutive [CTRL-D]s to produce the delay time you want.

Note: SuperCalc<sup>2</sup> cannot enter a [CTRL-D] into an .XQT file. You can enter the [CTRL-D] using SuperWriter (or your text editor).

5. When the execute file operation is suspended, any SuperCalc<sup>2</sup> command can be typed from the keyboard; however, many will make no sense, or may even be destructive (for example, you could Zap the current spreadsheet, or Quit the program).
6. The ampersand can never be placed into a cell from the execute file. It is always interpreted as suspending operation and can never be used as a literal.
7. The ampersand can appear:
  - As many times as you want in the execute file.



## THE SLASH COMMANDS

### X (eXecute)

---

- At any place on any line in the execute file (in fact, if you put it on a separate line in the execute file, it will be interpreted as & [CR]).

8. An ampersand entered into a cell as text does not pass control back to the execute file.
9. When **Global Tabs** are on, you can use combinations of &s and GoTos to set up interactive prompting for data values by insuring that each GoTo expands the size of the spreadsheet. For example, the command file might look like this:

```
=A2&  
=B3&
```

If cells A1 and B2 contained prompts (such as enter sales — or cost of sales — now), after each prompt, the user would be allowed to type data, which would be in the last current open cell, and which would resume operation of the execute file at the next line, thus moving the cursor to the next prompt and data entry cell, and so forth.

10. To terminate the execution of an .XQT file; and return control to the keyboard, enter a [**CTRL-C**] from the keyboard.

## THE SLASH COMMANDS

Zap



### ZAP

**Synopsis:** Sets the entire spreadsheet to empty cells and resets all format settings. Equivalent to a fresh start.

/ Zap ————— [ Yes to erase all not saved  
[ No to cancel this command  
[ Contents to erase all but User-defined format table

#### **Command Description:**

The **Zap** command erases the cell contents and resets the display format for the entire spreadsheet. The User-defined format table is reset to the default settings. **Zap** overrides protected cells.

**Zap** is equivalent to a fresh start. All cells become empty and all format settings and modes of operation revert to their standard settings.

The **Contents** option erases the spreadsheet and resets the display format settings. The User-defined format table retains its current settings.

#### **Examples:**

/Zap,Y  
/Zap,N

#### **Special Considerations:**

1. **Zap** is the only command that overrides protection of cells.
2. Remember, when you zap the spreadsheet, nothing remains.

## **Notes**



## 8. SuperCalc<sup>2</sup> Formulas

### **SuperCalc<sup>2</sup> Formulas**

SuperCalc<sup>2</sup> formulas specify mathematical calculations and relationships. They consist of operands and operators combined in such a way as to produce a value. When entered into a cell, a formula becomes the cell content.

A maximum of 116 characters can be entered into any one cell. You can construct a longer formula by entering parts of it into separate cells, then referencing those cells.

### **Formula Values**

The value of a cell containing a formula is the result obtained by evaluating the content in the cell. A formula may take on five types of values.

- Numeric
- Date
- Textual
- Not Available
- Error

The type of value that a formula may compute is *not* fixed when the formula is entered. This is in contrast to the cell type that *is* fixed to the formula when the cell content is non-empty and does not begin with a "[" or "[" character.

To illuminate this difference, consider the following example. This formula defines a formula cell (Form=), but the dynamic value type is determined by the value of cell A1 and may be any of the five possible types of values.

`IF(A1=1,NA,IF(A1=2,ERROR,IF(A1=3,PI,IF(A1=4,("Textual"),TODAY))))`

This expression evaluates:

- If A1 = 1, the value is the Not Available value.
- If A1 = 2, the value is the Error value.
- If A1 = 3, the value is the numeric value 3.14159265358979
- If A1 = 4, the value is Textual.
- If A1 = 5, the value is the Date value representing today.



## SUPERCALC<sup>2</sup> FORMULAS

### Operators

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## Operators

SuperCalc<sup>2</sup> uses three types of mathematical operators.

### *Arithmetic Operator*

An arithmetic operator defines the arithmetic operation performed between two numeric operands. SuperCalc<sup>2</sup> uses the following arithmetic operators.

+	Addition
-	Subtraction
*	Multiplication
/	Division
%	PerCent
<sup>^</sup> or <sup>**</sup>	Exponent

The arithmetic operators are evaluated according to algebraic precedence. The exponent operator is evaluated first. The multiplication, division and percent operators are evaluated next. The addition and subtraction operators are evaluated last.

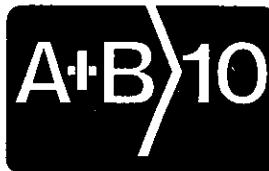
Parentheses ( and ) may be used to override the standard precedence and force a different calculation order.

Examples:

- 1)  $4 + 5 * 2 ^ 2$  is the same as  
 $4 + (5 * (2^2))$  or  
24
- 2)  $-2^2$  is the same as  
 $-(2^2)$  or  
-4

### *Relational operators*

A relational operator compares two operands and returns a value of true or false. A true comparison has a numerical value of 1, false a numerical value of 0.



The following sample compares terms "a" and "b" using the relational operators:

- a = b** Equal: The relation is true (1) if, and only if, "a" is equal to "b". All other cases are false (0).
- a <> b** Not Equal: The relation is true (1) if "a" does not equal "b". All other cases are false (0).
- a < b** Less Than: The relation is true (1) if the value of "a" is less than the value of "b". It is false (0) if the value of "a" is greater than or equal to "b".
- a > b** Greater Than: The relation is true (1) if the value of "a" is greater than the value of "b". It is false (0) if the value of "a" is less than or equal to "b".
- a <= b** Less Than or Equal To: The relation is true (1) if the value of "a" is less than or equal to the value of "b". It is false (0) if the value of "a" is greater than the value of "b".
- a >= b** Greater Than or Equal To: The relation is true (1) if the value of "a" is greater than or equal to the value of "b". It is false (0) if the value of "a" is less than the value of "b".

The relational operators = and <> can be used to compare any of the 5 types of values. The other relational operators <, >, <=, >= can be used to compare numeric and date values only.

### **Parentheses**

Parentheses operators define the precedence order of calculation within a mathematical formula. Operations enclosed within parentheses are calculated first. The use of parentheses overrides the algebraic precedence order of arithmetic operators. Parentheses can be nested.

### **Operands**

An operand is a numerical value. It may be obtained as the result of a constant, a cell reference, the evaluation of a formula or function.



## SUPERCALC<sup>2</sup> FORMULAS

### Operands

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#### ***Constants***

There are two types of constants, numeric and textual.

##### **Numeric Constant (Value)**

A numeric constant is any number such as an integer or decimal number or an exponential number. SuperCalc<sup>2</sup> accepts a maximum 16 decimal places for a numeric constant.

##### **Textual Constant (Value)**

SuperCalc<sup>2</sup> allows you to enter text (non-numeric characters) into a cell and subsequently reference the textual value in a formula expression. Enter the text as a textual value by enclosing it in double quotes and parentheses. For example, to enter the word Debit as a textual value, enter ("Debit").

This is quite different from text entered as a Text Cell. Such text has a value of zero when referenced in a SuperCalc<sup>2</sup> formula.

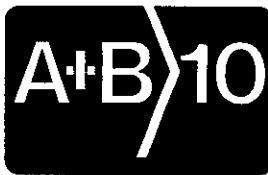
Text entered as a textual value may be referenced by other cells either singly or used to construct certain expressions. Such references may be used in the construction of lookup tables and conditional expressions.

A textual value has the following characteristics.

- A maximum of nine characters are accepted. If you attempt to exceed this limit, a Formula ERROR results.
- A textual value may contain any character including punctuation characters and numbers. Numbers in a textual value do not have any mathematical significance.
- Use the double quote character twice to enter it once into a Textual Value. For example:  
("“SELL”“") produces “SELL”
- A textual value is similar to a standard text entry except that a textual value can be propagated. That is, the value may be referenced by other cells. Because of this, SuperCalc<sup>2</sup> considers them to be FORMulas.

#### ***Cell References***

The value of a cell may be used as an operand by naming the coordinates of that cell in a formula.



### *SuperCalc<sup>2</sup> Functions*

The SuperCalc<sup>2</sup> functions return the value of a calculation. There are four types of functions:

- Arithmetic functions
- Logical functions
- Calendar functions
- Special functions

To use one of these functions, you enter its name, possibly followed by arguments. The arguments specify the values that you want to apply to the function.

#### *Arithmetic functions:*

The following functions are the SuperCalc<sup>2</sup> arithmetic functions. An argument may consist of a value, a range or a list.

- Value — An expression with a numeric value.
- Range — A group of cells specified by naming the top-leftmost cell and the bottom-rightmost cell, separated by a colon.
- List — One or more ranges and values separated by commas.

#### **ABS (Value)**

Returns the absolute value of the Value given.

- Equivalent to the value itself if positive.
- Equivalent to the value without its negative sign if negative. This is the additive inverse.
- Equivalent to Zero if the expression is zero.

Example: **ABS(-237) = 237**

#### **ACOS(Value)**

Returns the radian angle of the cosine value given.

Example: **ACOS(1) = 0**

#### **ASIN(Value)**

Returns the radian angle of the sine value given.

Example: **ASIN(.2) = .2013579207903336**

**ATAN(Value)**

Returns the radian angle of the tangent value given.

Example: **ATAN(2)** = 1.107148717794091

**AVERAGE (List)**

Returns the average (mean) of the range given. This function is equivalent to the SUM of the list divided by the COUNT of the list.

Example: **AVERAGE(H2:H20)**

**COS(Value)**

Returns the cosine of the radian angle value given.

Example: **COS(PI)** = -1

**COUNT (List)**

Returns the number of non-blank, non-text cells described by the range.

Example: **COUNT(H2:H20)** = 18 if the list is full.

**EXP(Value)**

This function raises the number e exponentially to the "value". The value of e is 2.718281828459045.

Example: **EXP(2)** = e^2 or 7.38905609893064

**INT(Value)**

Returns the integer of the value given, the value is not rounded.

Example: **INT(2.5832)** = 2

**LN(Value)**

Returns the natural log, log base e, of the value given.

Example: **LN(5)** = 1.609437912434

**LOG10(Value)**

Returns the common log, log base 10, of the value given.

Example: **LOG10(12)** = 1.079181246047594

**MAX(List)**

Returns the maximum value of the list. Non-numeric cells are ignored.

Example: **MAX(A1:A20)**

**MIN(List)**

Returns the minimum value of the list. Non-numeric cells are ignored.

**MOD(value1,value2)**

The MOD function produces the remainder that results from the division of 'value1' by 'value2'.

**MOD(10,7)** produces 3

The remainder when dividing 10 by 7 is 3.

**PI**

Returns the value of Pi to 16 significant digits.

Example: **PI** = 3.141592653589793

**ROUND(value,places-value)**

Use ROUND to round a value to a specified number of places. First specify the value to be rounded, then the place holder where the rounding is to occur. Use - to designate positions to the left of the decimal and + to designate positions to the right of the decimal. The + sign is optional; if it is omitted, a positive number is assumed. For example:

**ROUND(1234.5678,2)** = 1234.57

**ROUND(1234.5678,-2)** = 1200.00

**SIN(Value)**

Returns the sine of the radian angle value given.

Example: **SIN(PI/2)** = 1

**SQRT(Value)**

Returns the square root of the value.

Example: **SQRT(4)** = 2



## SUPERCALC<sup>2</sup> FORMULAS

### Operands

---

#### **SUM(List)**

Returns the sum of the values in the range. Non-numeric cells are ignored.

Example: **SUM(A4,B15,C15:C20)**

#### **TAN(Value)**

Returns the tangent of the radian angle value given.

Example: **TAN(.75\*PI) = -1**

#### *Logical Functions:*

A logical function consists of a relational comparison connected by a logical operator. Complex logical expressions may be formed by using parentheses.

#### **IF(expression1,value2,value3)**

If expression 1 is true, enter value 2 into the cell. If expression 1 is false, enter value 3.

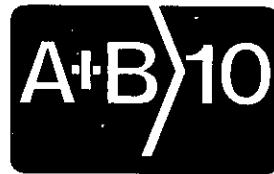
If an expression is entered into an IF function, the expression must evaluate properly to a value in order for the IF function to be value. That is, the expression must not result in a Formula ERROR.

Value 3 may be omitted. In that case, the value of the expression is zero if value 1 is false.

#### **AND(value1,value2)**

A logical "AND" function has a value of true (numerical value of 1) if both value 1 and value 2 are true. If either value is false, the AND function is false (numerical value of 0).

AND(True, True)	True
AND(True, False)	False
AND(False, True)	False
AND(False, False)	False

**Example: AND(H6=5,B3<>8)**

Returns the value of 1 if both conditions are true. Returns the value of 0 if either condition is false.

**OR(value 1,value 2)**

A logical "OR" function has a value of true (numerical value of 1) if either value 1 or value 2 is true. If both values are false, the OR function is false (numerical value of 0).

OR(True, True)	True
OR(True, False)	True
OR(False, True)	True
OR(False, False)	False

**Example: OR(B1>=74.2,C3=3)**

Returns the value of 1 if one or both values are true. Returns the value of 0 if both values are false.

**NOT(value)**

The NOT function returns the opposite truth value as the stated value.

NOT (True)	False
NOT (False)	True

**Example: NOT(B5>=5.9)**

Returns the value of 1 if the value is false. Returns the value of 0 if the value is true.

**Additional Examples:**

IF functions are easy to work with when you remember these few simple pointers.

1. IF Functions look like this:

**IF(Expression A,Expression B,Expression C)**

2. They read as follows:

If Expression A is true, then use Expression B.

If Expression A is false, then use Expression C.

**Operands**

3. In other words:

If Expression A, then Expression B, otherwise, Expression C.

Consider the IF function:

**IF(A1>=5000,10,5)**

If the cell A1 contained the value 455, the cell this formula resided in would show the value 5.

Now, suppose that you need to evaluate two IF functions at the same time. Consider this example:

**IF(A1=5000,5,IF(A1=4000,25,0))**

Notice that the IF function still reads "If Expression A, then Expression B, otherwise Expression C." It just happens that Expression C is another IF function.

Expression B or Expression C can be a formula or another IF function. You can continue to build your formula up to 116 characters.

Note: There must always be as many closed parentheses as there are open. This is important.

Let's look at two more analogies that may also be useful.

**IF-AND Combinations**

1. IF-AND combinations look like this:

**IF(AND(Exp Aa, Exp Ab), Exp B, Exp C)**

2. They read as follows:

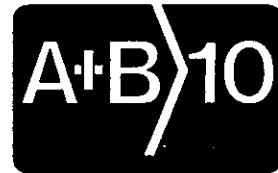
If Aa and Ab are both true, then use Expression B. If either Aa or Ab is false, then use Expression C.

3. In other words:

If Expression Aa and Ab are both true, then Expression B, otherwise Expression C.

## SUPERCALC<sup>2</sup> FORMULAS

Operands



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Example:

**IF(AND(A1>500,A1<1000),5,0)**

Both functions in Expression Aa and Ab must be true in order to evaluate Expression B.

### IF-OR Combinations

1. IF-OR combinations look like this:

**IF(OR(Exp Aa, Exp Ab), Exp B, Exp C)**

2. They read as follows:

If either Aa or Ab are true, then use Expression B. If Aa and Ab are both false, then use Expression C.

Example:

**IF(OR(A1>5000,B1<100),5,0)**

Only one of the functions, Expression Aa or Ab has to be true in order to use Expression B.

***The SuperCalc<sup>2</sup> Calendar Functions:***

SuperCalc<sup>2</sup> features a calendar that allows you to enter a date into your spreadsheet, then reference that date in calculations for other cells.

SuperCalc<sup>2</sup> uses a Modified Julian Calendar that ranges from March 1, 1900 to February 28, 2100. Days in this 200 year range are numbered sequentially from 1 through 73049.

The SuperCalc<sup>2</sup> calendar functions fall into two categories: (1) Date Entry functions and (2) Date Reference functions.

SuperCalc<sup>2</sup> displays a date according to the conventional format MM/DD/YY. Although expressed using numbers, it does not constitute a numeric entry. A date value is a special value and can only be referenced by the Date Reference functions. The other functions of SuperCalc<sup>2</sup> treat the Date as a text entry; i.e., it has a numerical value of 0.

Date values can be used with some arithmetic operations.

1. You can add a number to a date with the result being a date value.

Example: If Cell A1 has the date value 3/13/83, the formula **A1 + 45** produces the date value 4/27/83.

2. You can subtract a number from a date with the result being a date value.

**Date Entry Functions**

You enter a Date into your spreadsheet using one of the following three Date Entry Functions.

**DATE(MM,DD,YY)**  
**DATE(MM,DD,YYYY)**

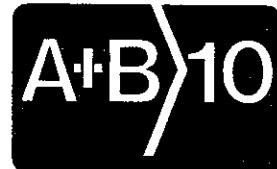
Enter the month, day and year in that order separated by commas. The year may be entered either as a two digit or four digit number. SuperCalc<sup>2</sup> assumes two digit years are 20th Century and adds 1900 to the entry. You must enter a 21st Century date using 4 digits.

You may enter single digit values without a leading 0. For example, the date for February 8, 1905 could be entered as:

**DATE(2,8,5)**

## SUPERCALC<sup>2</sup> FORMULAS

### Operands



For the default column width (9), SuperCalc<sup>2</sup> will display the date showing only the last 2 digits of the year, even if you enter a 4 digit value. There is no distinction on screen between centuries, even though SuperCalc<sup>2</sup> keeps track of them internally. The column width must be at least 11 to see all four digits. Then, you will see a 4 digit year, even if you enter it as a 2 digit number.

Only those dates within the 200 year range of the SuperCalc<sup>2</sup> calendar are accepted. If you attempt to enter a date that is not valid, a Formula ERROR will result.

#### TODAY

The TODAY function reads the system date into the Active Cell. The date must be previously entered into your system. If not, the value N/A displays in the cell.

A disk file containing a TODAY cell looks for the current system date when loaded into your spreadsheet. Of course, any other cells that reference a TODAY cell will be evaluated based on the current date. If you don't want the date to be dependent on the system date, use the DATE function.

#### DVAL(Value)

The DVAL function returns the date of the value specified. The value must be an integer between 1-73049. DVAL is the inverse of JDATE.

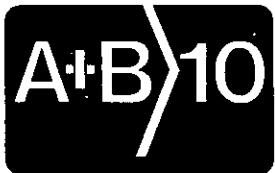
#### Date Reference Functions

SuperCalc<sup>2</sup> contains six Date Reference functions. You specify the function first followed by the date value. SuperCalc<sup>2</sup> places the formula in the active cell and returns the numeric value. A referenced cell must contain a valid DATE or an ERROR will be indicated. This value can be used as any other value in SuperCalc<sup>2</sup>.

Note: The Date reference functions return normal numeric values as distinguished from the Date Entry functions which return special date values.

#### MONTH(Date Value)

The MONTH function returns the number of the month of the date value (1 for January, 12 for December).



## SUPERCALC<sup>2</sup> FORMULAS

### Operands

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#### **DAY(Date Value)**

The DAY function returns the number of the day of the month of the date value.

#### **YEAR(Date Value)**

The YEAR function returns the number of the year of the date value.

#### **WDAY(Date Value)**

The WDAY function returns the Julian number of the day of the week of the date value (1 for Sunday, 7 for Saturday).

#### **JDATE(Date Value)**

The JDATE function returns the Modified Julian Date of the date value. This number ranges from 1 (March 1, 1900) through 73049 (February 28, 2100).

#### Special Considerations

1. Lookup tables may be used to "convert" the numeric value of the Date Reference functions to their corresponding names. Be sure to specify the names using the textual value format. For example, to convert WDAY functions to the day of the week, set up a lookup table as follows:

1	(“Sunday”)
2	(“Monday”)
~~~	
7	(“Saturday”)

2. You can perform 2 types of calculations using Date values.

- A. You may add (or subtract) a numeric value to a date. The number is assumed to represent days and the result produces a new date. For example:

12/25/82 + 7 produces 1/1/83  
2/25/86 - 365 produces 2/25/85

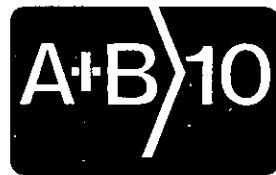
- B. You may subtract one date from another. The result is expressed as a numeral representing the number of days separating the two dates.

10/31/83 - 7/4/83 produces 119

Note: A number minus a date produces an ERROR.

## SUPERCALC<sup>2</sup> FORMULAS

### Operands



- 
- 3. SuperCalc<sup>2</sup> accepts numbers outside the legitimate range of dates. Such dates are converted to their legal counterparts if possible. If this is not possible, a Formula ERROR results.

Ex: DATE(6,60,83) is converted to 7/30/83

Ex: DATE(15,01,82) is converted to 3/1/83

This feature allows you to conveniently create dates that span logical new months or years using the Replicate command.



## SUPERCALC<sup>2</sup> FORMULAS

### Operands

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#### *Special Functions*

The SuperCalc<sup>2</sup> program has four Special Functions.

#### **ERROR**

Displays "ERROR" in a cell that returns a value that cannot be calculated. You can enter the value ERROR into a cell by typing it on the data entry line.

#### **LOOKUP(Value, Col/Row Range)**

Searches for the last value in the range of numbers that is less than or equal to the search value given and returns the adjacent value to the right of the search column or below the search row. This function assumes that the search range is in ascending order of values.

A lookup table consists of two adjacent rows or columns containing data. A lookup table can be either horizontal or vertical. SuperCalc<sup>2</sup> searches the left column of a vertical lookup table and returns the adjacent value in the right column. SuperCalc<sup>2</sup> searches the top row of a horizontal lookup table and returns the adjacent value in the bottom row.

Note: Text strings cannot be "looked up" in a lookup table. Only values can be looked up. To look up text, enter it as a textual value. For example: ("Debit").

#### **N/A**

Displays N/A in a cell for which data is not available. You can enter the value N/A into a cell using **NA**. Note: You enter **NA** (without a slash) and SuperCalc<sup>2</sup> displays N/A (with a slash).

#### **NPV (Discount, Col/Row Range)**

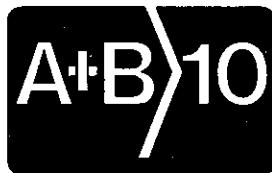
Returns the present value of a group of cash returns at the given rate of discount (discount rate .10 or 10%). The cash amounts are assumed to be projected for equal time periods, such as yearly, and the discount rate is for that interval. The first cash entry is discounted once, the second twice and so forth and added to the total value. Net present value is the present value of future cash flows, discounted at the appropriate cost of capital, minus the cost of the investment.

For example, with initial investment of \$10,000 (Cell A1) and returns of 2000, 2400, 2800, 3450 and 2800 in cells B1 through F1 and a discount rate of 8% calculate net present value in cell A2 as  $A2 = NPV (.08, B1:F1) + A1$  which would yield  $NPV = 573.68$ .

j = Period number (from 1 to k)

Aj = Cash flow at period

r = Rate of interest (discount rate)



## Special Considerations

### 1. Textual Values in Formulas and Functions

A textual value is used like other operands in the construction of expressions for lookup tables (the LOOKUP function) and logical functions. Due to the nature of a textual value however, it may not be used in some situations where a numeric expression would be appropriate. The rules for operators with textual values are as follows.

Arithmetic operators (+, -, \*, /, ^ or \*\*)

Textual values may not be used with arithmetic operators.

Relation operators (=, <>, <, >, <=, >=)

Textual values may be used to create expressions using the relation operators equal and not equal (=,<>).

Textual values may not be used with the remaining relation operators (<, >, <=, >=).

Valid relational expressions involving textual operands may appear in more complex expressions, such as logical function references.

The IF function may contain expressions with textual values as the second ("true case") or third ("false case") parameters.

Lookup tables may be constructed using expressions containing textual values.

### 2. IF Functions:

- **ERROR** — The cell content of the specified cell is tested for an error value.

**Ex: IF(A14=ERROR,expression2,expression3)**

If the contents of A14 are ERROR, the use expression 2, otherwise use expression 3.

- **N/A** — The "not available" value is compared to the content of a cell.

**Ex: IF(C33=NA,expression2,expression3)**

If the contents of C33 are N/A, use expression 2, otherwise use expression 3.

**Special Considerations****2. IF Functions:**

- Calendar functions — The value of a calendar function may be used in a logical function.

**IF(B20=DATE(02,25,47),expression2,expression3)**

If the value of B20 is the date 2/25/47, use expression 2, otherwise use expression 3.

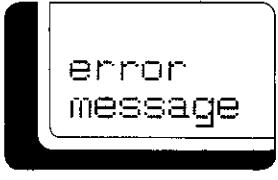
- ("Text") — A textual value may be used in a comparison expression.

**Ex: IF(A1=("Debit"),expression2,expression3)**

If the value of A1 is the textual value Debit, use expression 2, otherwise, use expression 3.

## APPENDIX A

### Error Messages



error  
message

---

# Appendix A

## Error Messages

### *Cannot delete file*

The file is write-protected. Use your operating system command to delete the write-protection.

### *CLEAR Current Split*

The split window has been cleared.

### *Column BK contains data*

You cannot insert a column because column BK contains data. Delete or move the column to another location, then retry the insert.

### *Column ERROR*

Indicates that a single Column entry is required.

### *Column Range ERROR*

The Column range is not specified properly. Correct the error and reenter the range.

### *Command aborted due to disk error*

Indicates a problem with the disk or disk drive.

### *Copy won't fit*

There is not enough room on the spreadsheet for the Copy. Correct the error and retry the command.

### *Disk FULL, command aborted.*

There is not enough room on the disk to write the file. Replace the disk with one that has room.



## APPENDIX A

### Error Messages

---

#### *Filename ERROR*

The file name is not in proper format.

#### *File not loadable*

The file is not in SuperCalc<sup>2</sup> format.

#### *File NOT on Disk*

The file is not on the disk specified.

#### *File SC2.HLP not installed.*

Indicates that the help file SC2.HLP does not contain the screen called for by the AnswerKey.

#### *Formula ERROR*

SuperCalc<sup>2</sup> checks formulas to see if they are complete and legitimate mathematical formulas before entering them into a cell. Locate and correct your error, then reenter the formula.

#### *From can't be block.*

The source cannot be a block.

#### *Insufficient memory to operate SuperCalc<sup>2</sup>.*

SuperCalc<sup>2</sup> requires a minimum of 48K for 8080 and Z80 and 64 K for 8086 systems.

#### *Memory FULL*

The computer memory is full. You cannot add anything to the spreadsheet. Save the spreadsheet on a disk file, or delete portions of it to continue.

## APPENDIX A

### Error Messages



#### *No room (at edge) to display window*

Error is the result of attempting a /Window, Vertical at the leftmost or rightmost column of display or /Window,Horizontal at the first or last row of the display.

#### *No SC2.hlp file on SuperCalc<sup>2</sup> disk.*

Copy the file SC2.HLP onto your SuperCalc<sup>2</sup> disk.

#### *Printer not ready or out of paper.*

This error message is for IBM PC only. SuperCalc checks the printer for ready status. If the printer does not return the ready status, this message occurs.

Note: Set location 2B4 to non-zero to avoid checking the printer for ready status.

#### *Protected Entry*

The cell is protected. Unprotect the cell to alter the contents.

#### *Range ERROR*

The cell range is not specified properly. Correct the error and reenter the range.

#### *Remount and press "RETURN" to continue.*

Indicates an error in loading the overlay file, SC2.OVL.

#### *Row ERROR*

Indicates that a single Row entry is required.

#### *Row Range ERROR*

The Row range is not specified properly. Correct the error and reenter the range.



## APPENDIX A

### Error Messages

---

#### *Row 254 contains data*

You cannot insert a row because row 254 contains data. Delete or move the row 254 to another location, then retry the insert.

*SuperCalc<sup>2</sup> not properly installed on current default drive. See SuperCalc<sup>2</sup> manual for further assistance.*

SuperCalc<sup>2</sup> must be installed on some computers to work properly.

#### *SuperCalc<sup>2</sup> program diskette MUST remain on disk drive*

Make sure that the disk containing the SuperCalc<sup>2</sup> files are on the program disk.

#### *Target is within move range*

You have specified a move that is inside the source range.

#### *Title Cleared*

Occurs when you clear a title lock or set a new title lock.

#### *"To" must be cell.*

The destination must be a cell. Correct the entry.

#### *"To" must be partial column.*

The destination must be a partial column.

#### *"To" must be partial row.*

The destination must be a partial row.

#### *User abort*

Indicates that execution of an .XQT file has been interrupted with CTRL-C.

**APPENDIX B****Sorcim Sort Collating Sequence**

A	B	C	D
A	B	C	D
A	B	C	D

## **Appendix B**

### **Sorcim Sort collating sequence**

The Arrange command uses a sort order that is different from the ASCII sort order. This sort order is unique to Sorcim products and more closely arranges the characters in dictionary order.

The order is:

Space.

Other non-numeric, non-alpha characters in ASCII order.

Alpha characters, with lower case characters preceding their upper case counterparts.

Numeric characters.

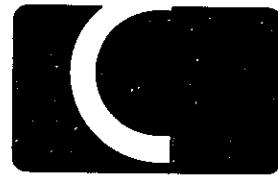
Specifically, the order is:

!	[
"	\
#	]
\$	-
%	-
&	-
,	{
{	-
}	-
*	-
+	^
-	aAbBcC...zZ
.	0
/	1
:	2
;	3
<	4
=	5
>	6
?	7
@	8
	9

## **Notes**

## APPENDIX C

### Compatibility of Files



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## Appendix C Compatibility of Files

When SuperCalc<sup>2</sup> or SuperCalc saves a file on disk, it writes the name of the program as part of the .CAL file. This is checked when SuperCalc<sup>2</sup> or SuperCalc attempts to load the file.

Any .CAL file prepared by SuperCalc can be used by SuperCalc<sup>2</sup> with no effect.

SuperCalc can load a file created by SuperCalc<sup>2</sup> provided that the file does not contain any date values, textual values, or cells with the User-defined or Hide display formats. If the file does contain these values or formats, SuperCalc will give an error message and not load the file.

## **Notes**



## Appendix D

### Glossary

**Active Cell Status Line:** The first of three lines in the Status Area. Displays the status of the active cell.

**Active Cell:** The cell in which the cursor is currently positioned.

**Argument:** Instructions that a function needs to be evaluated.

**Arithmetic operator:** A symbol that represents one of the calculations possible with SuperCalc<sup>2</sup>: +, -, \*, /, %, ^ or \*\*.

**Arrow keys:** The four arrow keys. One of two sets of cursor movement keys for SuperCalc<sup>2</sup>. See the Cursor Diamond Keys.

**Backup:** The process of duplicating a file to protect against possible loss. It is a good practice to backup all work onto a separate disk. Always backup a program distribution disk before using the program. Store the original in a safe place and use the copy.

**Blank Cell:** A cell without contents, but formatted at the Entry level. A blank cell requires a small amount of computer memory for the format data. See Empty Cell.

**Block:** A rectangle of cells specified by naming the upper left and lower right corner cells, separated by a colon.

**Byte:** Storage space for one character.

**Cell Address:** The coordinates that identify a cell. For example: A1 and AS187.

**Cell Contents:** The data that a cell contains. A cell may contain a text string, repeating text or a formula.

**Cell Display Format:** The format that determines how the cell value displays on screen and prints on reports.

**Cell Location:** The cell coordinates.

**Cell Range:** A rectangular group of cells consisting of a partial row, partial column or a block. A range is specified by naming the upper-left most and lower-right most cells, separated by a colon [:].



## APPENDIX D

### Glossary

---

**Cell Reference:** The instruction to substitute the cell value of another cell for the cell reference. A cell reference is made by naming the cell coordinate.

**Cell Value:** The value of the cell contents. A text string and a repeating text cell have a numerical value of zero. A formula cell has a value obtained by evaluating the formula in the cell. A formula value may be numeric, date, textual, error or not available.

**Cell:** The unit on the spreadsheet into which you can enter a text string, repeating text or a formula. A cell is identified by its coordinate on the spreadsheet.

**Column:** All cells in a vertical line, including empty cells. Columns are designated with the letters A-BK for a total of 63 columns. See Row.

**Command Mode:** The mode in which you enter commands to SuperCalc<sup>2</sup>.

**Command:** An instruction to SuperCalc<sup>2</sup>. Commands begin with [I], [;], [=], [&], or [/].

**Consolidate:** The process of combining data from different spreadsheets or from different parts of the same spreadsheet.

**Contents:** See Cell Contents.

**Coordinate:** The intersection of a column and a row on the spreadsheet, identified by the column letter and row number.

**Copy:** A command to copy the contents of one cell range into another. See replicate.

**Current Cell Key:** The ESC key places the current cell address on the Data Entry line. At the same time the ESC key activates the cursor movement keys for moving the spreadsheet cursor. The current cell address on the Data Entry line changes as the spreadsheet cursor is moved. Press the ESC key again to leave this mode.

**Current Cell:** The cell in which the cursor is currently positioned.

**Current Column:** The column containing the current or Active Cell.

**Current Direction:** The direction in which the spreadsheet cursor is set to move. The direction is set by the last movement of the cursor movement keys and can be turned on/off with /Global,Next.



**Current Row:** The row containing the current or Active Cell.

**Cursor Diamond Keys:** The set of cursor movement keys (CTRL-S, CTRL-E, CTRL-X, CTRL-D). The cursor diamond keys are equivalent to the arrow keys.

**Data Entry Mode:** The mode in which you enter data directly into the Data Entry line.

**Data Entry/Command Line:** The third of three lines in the Status Area.

**Data:** A string consisting of numbers and characters of information.

**Date value:** A value obtained by evaluating one of the date functions. A date value displays in the form MM/DD/YY.

**Default:** The setting that the SuperCalc<sup>2</sup> program assumes unless you change it. The default settings are in effect when SuperCalc<sup>2</sup> is first started. For example, the default display format settings are: General, Text Left, Right, column width 9.

**Destination Range:** The range of cells in which to put data.

**Directory:** The list of filenames kept on a disk by the operating system.

**Diskette:** A medium that stores computer data and programs.

**Display Format:** The Cell Display Format that controls how the value is displayed on screen and how it will be printed on paper.

**Display Window:** That portion of the spreadsheet that is currently displayed on the screen. The window may be split to display two portions of the spreadsheet at the same time.

**Edit Cursor:** The cursor on the Edit line that indicates where the next character will be entered.

**Edit Line:** The bottom line of the Status Area.

**Edit:** To modify or alter the contents of a cell or command.

**Empty Cell:** A cell that has nothing in it, either contents or formatting at the Entry level. All cells are empty when SuperCalc<sup>2</sup> is first started. No computer memory is used for empty cells. See Blank Cell.

**Entry:** Format settings of highest priority that cannot be overridden by lower level global, row or column formatting.

**Error Value:** A value obtained when a formula cannot be calculated. An error value may be entered directly into a cell as ERROR and be used to construct logical functions.



## APPENDIX D

### Glossary

---

**Exponential Display:** Displays a numerical value in scientific notation.

Numbers are displayed with one digit to the left of the decimal point raised to a power of 10. The letter "e" separates the significant figures from the power of 10. Example: 3.15e3 is the exponential display format for 3,150.

**File:** A collection of data stored together on a diskette.

**Filename:** The name given a diskette file in the form filename.ext. The name contains a maximum 8 characters and the extension of up to 3 characters. SuperCalc<sup>2</sup> data files are automatically given the extension .CAL.

**Format Precedence:** The order of precedence that controls how a cell is formatted. The order of precedence is: Global, Column, Row, Entry.

**Format a diskette:** Prepare a new diskette to receive data.

**Format:** See Display Format.

**Formula:** A mathematical statement that calculates a number. It can consist of numbers, arithmetic operators, coordinates, or functions.

**Function:** A built-in mathematical calculation. SuperCalc<sup>2</sup> has four types of functions: Arithmetic, Logical, Date and Special functions.

**Global Status/Prompt Line:** The second of three screen lines in the Status Area. This line displays the global status and prompts.

**Help:** Press the SuperCalc<sup>2</sup> AnswerKey [?] at any time for onscreen information about your current options. Press any key to return to the spreadsheet.

**Interpretive prompting:** You only need to type enough of most commands to uniquely identify it and SuperCalc<sup>2</sup> immediately fills in the rest of the command.

**Kilobyte:** Storage space for 1024 characters.

**Load:** To read a program or data into the computer memory.

**Model:** The application of arranging a problem onto a spreadsheet to manipulate data. See Template.

**Nesting:** One function used as an argument to another function.

**Numerical Constant:** A formula entry consisting of a decimal number only.



**Not Available Value:** A value obtained when data is not available. This value may be entered directly into a cell and be used to construct logical functions. Enter the not available value as NA. It displays as N/A.

**Numerical value:** A value that can be expressed as a decimal number. A numerical value can be a numeric constant or the result of evaluating a formula.

**Partial Column:** An adjacent group of cells within a column.

**Partial Row:** An adjacent group of cells within a row.

**Range:** See Cell Range.

**Replicate:** To copy an entry or range of entries to another part of the spreadsheet. See Copy.

**Row:** All cells in horizontal line, including empty cells. Rows are designated with the numbers 1-254. See Column.

**Scroll:** The apparent movement of the display window over the spreadsheet to display a different part of the spreadsheet. See display window.

**Source Range:** The range of cells from which to get data.

**Spreadsheet Cursor:** The active cell contains the spreadsheet cursor. Data entered into the Data Entry line will go into this cell when [CR] is pressed.

**Spreadsheet:** A grid containing cells arranged in columns and rows on which data is entered.

**Status Area:** The bottom three lines of the screen containing the Active Cell Status, Global Status /Prompt, and Data Entry/Command lines.

**Target Range:** The range of cells in which to put data. See Destination Range.

**Template:** A structured spreadsheet containing formulas and formatting instruction used for entering and/or displaying data. See Model.

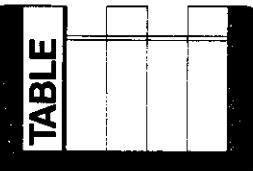
**Textual value:** The value obtained by enclosing text in double quotes and parentheses. A text value displays as text.

**Value:** See Cell Value.

**Window:** See Display Window.

## **Notes**

**APPENDIX E**  
**ASCII Codes**



## ASCII Codes

CONTROL		NUMBERS SYMBOLS			UPPER CASE			LOWER CASE		
<b>NUL</b> 00	<b>DLE</b> CTRL P 01	<b>SP</b> 20	<b>0</b> 32	<b>@</b> 40	<b>P</b> 64	<b>\</b> 80	<b>p</b> 96	<b>a</b> 97	<b>q</b> 71	<b>b</b> 112
<b>SOH</b> 01	<b>DC1</b> CTRL Q 11	<b>!</b> 21	<b>1</b> 33	<b>A</b> 41	<b>Q</b> 65	<b>a</b> 97	<b>r</b> 113	<b>b</b> 98	<b>s</b> 72	<b>c</b> 114
<b>STX</b> 02	<b>DC2</b> CTRL R 12	<b>"</b> 22	<b>2</b> 34	<b>B</b> 42	<b>R</b> 66	<b>b</b> 98	<b>t</b> 116	<b>d</b> 100	<b>s</b> 73	<b>c</b> 115
<b>ETX</b> 03	<b>DC3</b> CTRL S 13	<b>#</b> 23	<b>3</b> 35	<b>C</b> 43	<b>S</b> 67	<b>c</b> 99	<b>u</b> 117	<b>f</b> 102	<b>v</b> 76	<b>v</b> 118
<b>EOT</b> 04	<b>DC4</b> CTRL T 14	<b>\$</b> 24	<b>4</b> 36	<b>D</b> 44	<b>T</b> 68	<b>d</b> 100	<b>t</b> 74	<b>g</b> 103	<b>w</b> 77	<b>w</b> 119
<b>ENQ</b> 05	<b>NAK</b> CTRL U 15	<b>%</b> 25	<b>5</b> 37	<b>E</b> 45	<b>U</b> 69	<b>e</b> 101	<b>u</b> 75	<b>j</b> 106	<b>z</b> 7A	<b>z</b> 122
<b>ACK</b> 06	<b>SYN</b> CTRL V 16	<b>&amp;</b> 26	<b>6</b> 38	<b>F</b> 46	<b>V</b> 70	<b>f</b> 102	<b>v</b> 76	<b>k</b> 107	<b>{</b> 7B	<b>{</b> 123
<b>BEL</b> 07	<b>ETB</b> CTRL W 17	<b>'</b> 27	<b>7</b> 39	<b>G</b> 47	<b>W</b> 71	<b>g</b> 103	<b>w</b> 77	<b>l</b> 108	<b>:</b> 7C	<b>:</b> 124
<b>BS</b> 08	<b>CAN</b> CTRL X 18	<b>(</b> 28	<b>8</b> 40	<b>H</b> 48	<b>X</b> 72	<b>h</b> 104	<b>x</b> 78	<b>m</b> 109	<b>}</b> 7D	<b>}</b> 125
<b>HT</b> 09	<b>EM</b> CTRL Y 19	<b>)</b> 29	<b>9</b> 41	<b>I</b> 49	<b>Y</b> 73	<b>i</b> 105	<b>y</b> 79	<b>n</b> 110	<b>-</b> 7E	<b>-</b> 126
<b>LF</b> 0A	<b>SUB</b> CTRL Z 1A	<b>*</b> 2A	<b>:</b> 3A	<b>J</b> 4A	<b>Z</b> 5A	<b>j</b> 106	<b>z</b> 7A	<b>o</b> 111	<b>DEL (RUBOUT)</b> 7F	<b>o</b> 127
<b>VT</b> 0B	<b>ESC</b> CTRL [ 1B	<b>+</b> 2B	<b>;</b> 43	<b>K</b> 48	<b>[</b> 75	<b>k</b> 91	<b>]</b> 6B	<b>~</b> 112		
<b>FF</b> 0C	<b>FS</b> CTRL \ 1C	<b>,</b> 2C	<b>&lt;</b> 44	<b>L</b> 4C	<b>\</b> 76	<b>l</b> 92	<b>l</b> 6C	<b>l</b> 108	<b>l</b> 7C	<b>l</b> 124
<b>CR</b> 0D	<b>GS</b> CTRL ] 1D	<b>-</b> 2D	<b>=</b> 45	<b>M</b> 4D	<b>J</b> 77	<b>m</b> 93	<b>m</b> 6D	<b> }</b> 109	<b> }</b> 7D	<b> }</b> 125
<b>SO</b> 0E	<b>RS</b> CTRL ^ 1E	<b>.</b> 2E	<b>&gt;</b> 46	<b>N</b> 4E	<b>^</b> 78	<b>n</b> 94	<b>n</b> 6E	<b>~</b> 110		
<b>SI</b> 0F	<b>US</b> CTRL - 1F	<b>/</b> 2F	<b>?</b> 47	<b>O</b> 4F	<b>-</b> 79	<b>o</b> 95	<b>o</b> 6F	<b>DEL (RUBOUT)</b> 111		

## KEY

hex	CTRL M OD	control character
	CR 13	ASCII character
		decimal

## **Notes**



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