

## 8. SuperCalc2 Formulas

### SuperCalc2 Formulas

SuperCalc2 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

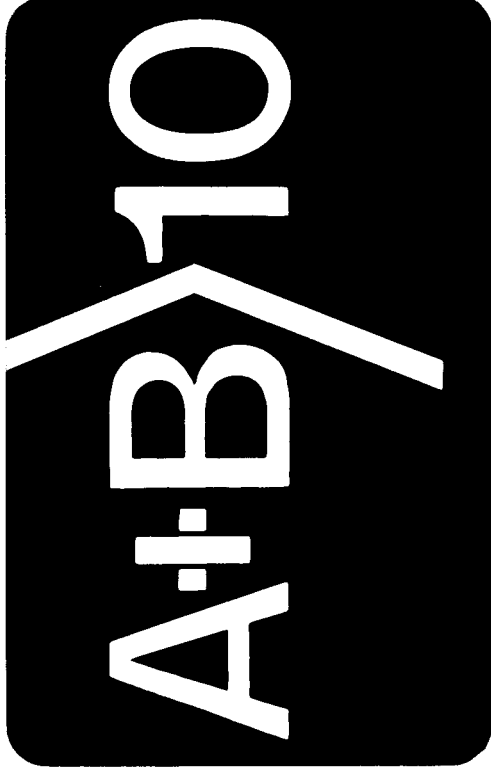
The value of a cell containing a formula is the result obtained by evaluating the content in the cell. A formula may take on five types of values.

- 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 A 1 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))))
```



## SuperCalc2 Formulas

## 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.

## 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 cell content 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.

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.

## 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. The SuperCalc<sup>2</sup> operators are described below.

+	Addition
-	Subtraction
*	Multiplication
/	Division
%	PerCent
^ or **	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.

Examples:

- 1)  $4 + 5 * 2 \wedge 2$  is the same as  
 $4 + (5 * (2 \wedge 2))$  or  
24
- 2)  $-2 \wedge 2$  is the same as  
 $-(2 \wedge 2)$  or  
-4



**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 evaluating to a numeric value.
- Range – A group of cells specified by naming the top left-most cell and the bottom right-most 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**



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 Text Function. 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**

A SuperCalc<sup>2</sup> function returns the value of a calculation. There are four types of SuperCalc<sup>2</sup> functions:

- Arithmetic
- Logical
- Calendar
- Special

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.

**MAX(List)**

Returns the maximum value of the range. Non-numeric cells are ignored.

Example: **MAX(A1:A20)**

**MIN(List)**

Returns the minimum value of the range. 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

**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

**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.

### 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 valid. 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.

#### SQRT(Value)

Returns the square root of the value.

Example: **SQRT(4)** = 2

#### 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

#### Special Considerations:

- A formula may be used to produce a value. SuperCalc2 evaluates the formula and uses the value for the argument to the function.
- Specify a range of cells for Range.

#### 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*.

**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.

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))**

**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 true value of 1 if one or both values are true. Returns the value of 0 if both values are false.



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.



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.

Example:

**IF(NAD(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)**



### 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 Cell Reference functions. You specify the function first followed by the address of the reference cell. SuperCalc<sup>2</sup> places the formula in the active cell and returns the value. The 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).

### 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).



### 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)

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 message 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.



### 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 term *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 *hooked 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 are 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).

### Special Considerations

1. Lookup tables may be used to *convert* the numeric value of the Date Cell Reference functions to their corresponding names. Be sure to specify the names using the Text Function 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*.

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(15,0,82) 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.

## 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:

- Calendar functions -- The value of a calendar function may be used in the comparison expression.

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.

## NPV (Discount, Col/Row Range)

Returns the present value of a group of cash returns at the given rate of discount (for example, a discount rate of 10% would be entered as .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 an initial investment of \$10,000 (Cell A1) and returns of 200, 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.

$$NPV = \sum_{j=1}^k A_j (1 + r)^{-j}$$

j = Period number (from 1 to k)

Aj = Cash flow at period

r = Rate of interest (discount rate)

## ISERROR(Value)

Returns true (1) if the value of an expression is ERROR and returns false (0) if the expression has any value other than ERROR.

Ex: **IF(ISERROR(A14),expression2,expression3)**

If the contents of A14 are ERROR, then use expression 2, otherwise use expression 3.

## ISNA(Value)

Returns true (1) if the value of an expression is N/A and returns false (0) if the expression has any value other than N/A.

Ex: **IF(ISNA(C33),expression2,expression3)**

If the contents of C33 are N/A, use expression 2, otherwise use expression 3.



## SuperCalc<sup>2</sup> Formulas

### Special Considerations

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- **("Text")** -- A textual value may be used in a comparison expression.

#### **IF(A1 = ("Debit"),expression2,expression3)**

If the value of A1 is the textual value Debit, use expression 2, otherwise, use expression 3.

## A. 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 SuperCalc2: +, -, \*, /, %, ^ or \*\*.

**Arrow keys:** The four arrow keys. One of two sets of cursor movement keys for SuperCalc2. 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:** The unit on the spreadsheet into which you can enter a text string, repeating text or a formula. A cell is identified by its coordinates on the spreadsheet.

**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.

lu·ous · su'per·het'er·o·dync' ·  
 man · su'per·im·pose' · su'p  
 i'cial · su'per·in·duce' · su'per  
 in·tend'ent · su·pe'ri·or · su·p  
 e'ri·or'i·ty · su·per'la·tive · su  
 per·man · su'per·mar'ket · su  
 per·nu'mer·ar'y · su'per·scrib  
 per·scrip't · su'per·scrip'tion

## APPENDICES

### Glossary

# A

**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, 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.

**Disk:** A magnetically-coated storage medium for data and programs. Disks are either flexible (also called diskettes or floppies) or rigid (also called fixed or hard).

**Diskette:** See Disk.

**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.

**Drive (or disk drive):** The device used to write data to and read data from a disk.

**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 [:].

**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 numerical value obtained by evaluating the formula in the cell. A formula may have a numerical value, date value or textual value.

**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 [!], [;], [9], [&], 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.

## APPENDIX A

### Glossary

**Format Precedence:** The order of precedence that controls how a cell is formatted. The order of precedence is: Global, Column Row, Entry.

**Format a disk:** A procedure used to prepare a blank disk to receive data. Used disks can be re-formatted, but all programs or data on the disk will be erased in the process.

**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 three types of functions: Arithmetic, Date and Special functions.

**Global filename character (or wildcard):** The asterisk (\*) or question mark (?) used in place of filename or extension characters to define more than one file. Used in operating system commands.

**Global Status/Prompt Line:** The second of three screen lines in the Status Area. This line displays the global status and prompts.

**Hard disk:** See disk.

**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.

**Logged drive (or default drive):** The current drive identified by the operating system prompt displayed on the monitor screen. For example, A> means drive A is the current logged drive. Some systems also include the user area in the operating system prompt such as 0A>.

**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.

## APPENDIX A

### Glossary

**Drive name (or drive specifier):** Usually a single letter and colon, such as A: or B:, or a user area number followed by a letter and colon, such as 0A: or 3F: (see File ID).

**Edit Cursor:** The cursor on the Edit line. 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.

**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 (or disk file):** Data or program stored on a disk under a unique filename.

**Filename:** The one to eight character name defining a disk file. The characters can be capital or lower-case letters, numbers, or valid keyboard symbols, such as -, or &. Valid symbols vary from one operating system to another. Valid filenames include: SC2 or BUDGET or MEMO-8 (see File ID).

**Filename extension (or filetype):** An optional period (.) and one to three character extension to a filename. Use any valid filename character. SuperCalc<sup>2</sup> assigns a .CAL extension to any filename specified at the time a spreadsheet is saved. Abbreviations typically used to describe extensions are .ext or .typ (see File ID).

**File ID (or filespec):** The three parts to a complete file identification: Drive name, filename, and filename extension. Examples include B:BUDGET.CAL OR A:SC2.COM. Type the file ID when entering an operating system command, or type the filename and extension only if reading from or writing to the current logged drive.

## APPENDIX A

### Glossary

**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.

**Wildcard:** See Global filename character.

**Window:** See Display Window.

## APPENDIX A

### Glossary

**Numerical Constant:** A formula entry consisting of a decimal number only.

**Not Available Value:** A value obtained when data are 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 is displayed 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.

**Operating System:** A collection of commands and programs used to start ('boot') the system and display the system prompt (such as A>); manage disk files; perform additional internal and external functions, including resource management.

**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.

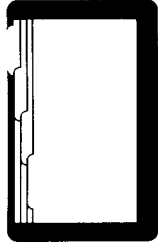
**Source Range:** The range of cells from which to get data.

**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 are 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.



## APPENDIX B

### Managing Your Disk Files

## B. Managing Your Disk Files

### Contents:

Purpose	B-1
What is a disk file?	B-2
Naming a file	B-2
File management guidelines	B-5
Five basic file management commands	B-6

### Purpose:

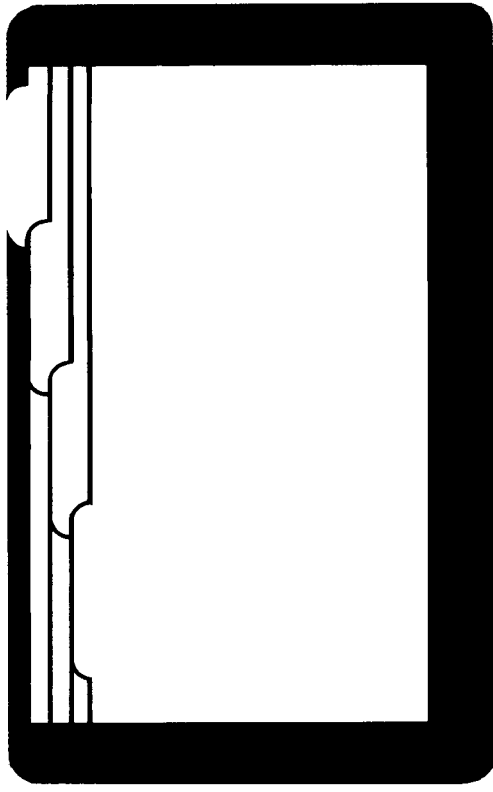
To show you how to manage your disk files with these five operating system commands:

MS-DOS Commands*	CP/M Commands**	Description (primary functions)
DIR	DIR	Displays disk file directory.
CHKDSK	STAT	Displays disk space available.
COPY	PIP	Copies disk files.
ERASE	ERA	Erases disk files.
RENAME	REN	Renames a disk file.

Everything covered in this Appendix is described in more detail in your operating system manual. Specific features of each operating system are subject to change as newer versions are released.

\* The MS-DOS commands listed above are the same as DOS commands for the IBM Personal Computer.

\*\* The CP/M commands listed above are the same for CP/M-86, Concurrent CP/M-86, MP/M and MP/M-86.



## APPENDICES

### Managing Your Disk Files



## NOTES:

- "B:" is the drive name for drive B. If MYP&L.CAL were in the logged drive (drive A in our example), you would not need to type the drive name. Your operating system searches the disk in your current logged (or "default") drive unless you specify a different drive name.
- When you type a filename with an operating system command, you need to include the extension, if any.
- ERASE is an MS-DOS command. The erase command for CP/M systems is ERA.

**Another example:**

You are logged onto drive A, and you have started SuperCalc<sup>2</sup>. Now you want to load a spreadsheet file named MYP&L.CAL from a disk in drive B (using the SuperCalc<sup>2</sup> / Load command).

When / Load asks for a filename, type: **B:MYP&L**

## NOTES:

- SuperCalc<sup>2</sup> looks in the logged drive by default. You do not need to type a logged drive name, but in our example the file you want to load is not in the current logged drive. MYP&L.CAL is in drive B ("B:").
- SuperCalc<sup>2</sup> automatically looks for the filename you specify, with a .CAL extension. You do not need to type the .CAL extension with SuperCalc<sup>2</sup> commands. (SuperCalc<sup>2</sup> assigns a .CAL extension to any filename specified at the time a spreadsheet is saved.)

**What is a disk file?**

A disk file, for our purposes, is any information you can store on a disk and define with a filename. When we use the word "file" we mean "disk file."

Examples of the "information" in a file include the data in a spreadsheet, or the text in a business letter, or the code in a program file.

**Naming a file**

A filename consists of one to eight valid characters, but no blank spaces.

Valid characters are letters (A-Z or a-z), numbers (0-9), and some special keyboard symbols (such as - or &).

Valid filename examples:

15	FB-23	MYP&L
JM-RPT	BALSHEET	SALESJUN

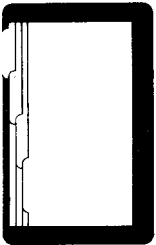
Note that valid special symbols differ from one operating system to another. Check your operating system manual if you need additional special symbols for your filenames.

At times you need to identify a file with more than a filename. You may need to add a drive name or a filename extension, or both, as described in the examples below.

**Example:**

You see the A> prompt on your display screen, meaning you are logged onto drive A. You want to erase a file named MYP&L.CAL in drive B. ("CAL" is the filename extension.)

At the system A>, type: **ERASE B:MYP&L.CAL** 



**.BAK**

Assigned to an existing file by SuperCalc<sup>2</sup> if you Output or Save a spreadsheet file to Disk with the Backup option. Selecting Backup assigns a .CAL extension to your new file, and a .BAK extension to the old file. See /Output in this manual for more information.

**CAUTION:** A .BAK file will overwrite any other .BAK file with the same filename on the same disk. Note that a .BAK file cannot be loaded by SuperCalc<sup>2</sup>, but you can rename a SuperCalc<sup>2</sup> .BAK file as a .CAL file.

**.XQT**

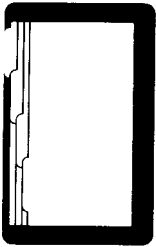
Used in conjunction with the /X (execute) command in SuperCalc<sup>2</sup>. An .XQT extension must be used when you Output an execute file to Disk. See /X (execute) in this manual for more information.

**File management guidelines**

- To log onto a different drive, type the other drive name at the system prompt. Example: At the A> prompt, type **B: (+)** to change the current logged drive from A to B.
- It is usually a good idea to keep your program files on a disk in the system startup drive (often drive A), and your data files (such as spreadsheets) on a disk in another drive. Otherwise you might run out of space on your program disk.
- If you have a hard disk, keep your data in your own user area.
- Write-protecting a disk: Write-protecting means your computer can not "write" data onto the disk or erase any of the disk files. Write-protecting is optional, and methods vary from one computer to another. Check your computer manual for specific instructions.
- Error messages: Here is a sampling of operating system error messages you might see on your monitor:

**FILE NOT FOUND, or NO FILE**

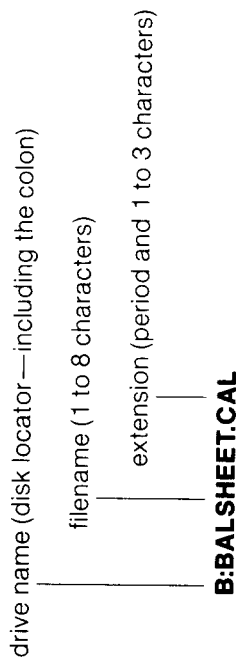
Means you probably forgot to type the drive name in front of the filename, or you typed the filename incorrectly, or put the wrong disk in the drive you specified.



**Summing it up**

A complete file ID (or "filespec") has up to three parts. The "filename" is the second part. You can type all three parts when you are asked to enter a filename, or you can type just one or two of the parts, as appropriate.

Here are the three parts to a file ID:



Note: An extension is also called a "filetype" or "typ."

**Reserved filename extensions:**

The following extensions are associated with programs or program-related files. Do not use these extensions with files you create:


- .COM**      **.CMD**      **.OVL**      **.O86**
- .HLP**      **.DAT**      **.PFK**      **.SYS**

The following extensions should be reserved for the purposes described:

- .CAL**      For standard SuperCalc<sup>2</sup> (or SuperCalc) spreadsheet files. Assigned automatically by SuperCalc<sup>2</sup> if no other extension is specified when a file is saved.
- .PRN**      Assigned automatically by SuperCalc<sup>2</sup> if you Output a spreadsheet file to Disk — if no other extension is specified. A .PRN file can be edited by SuperWriter (and many other word processing programs), or viewed with the operating system TYPE command. See /Output in this manual for more information about .PRN files.

## Five basic file management commands

We make the following assumptions in our examples:

- Commands are typed at the system prompt, such as A > for drive A, or B > for drive B.
- You will press your  key (labeled RETURN or ENTER on some keyboards) following any command.
- All commands are directed at files in the current logged drive, unless a different drive name (such as A: or B:) is specified.
- You have a two drive system, with drives named A: and B: (substitute your own drive names if they are different).

### NOTES:

CP/M calls the asterisk (\*), used in some command lines below, a wildcard. MS-DOS calls it a global filename character. In our examples, the \* means "any filename," or "any extension" (depending on where the \* is positioned). You can read more about the \* symbol in your operating system manual. The question mark (?), not used in our examples, serves a related function.

Use the **(BACKSPACE)** key to erase typing errors.

## SYNTAX ERROR, or INVALID FORMAT, or BAD COMMAND

Means you typed a command incorrectly. Are the elements of the command line in the right order? Did you forget to enter a blank space, or did you enter a space in the wrong location?

## BDOS ERR ON B: (or any other drive specified)

Usually means you forgot to put a disk in the drive, or forgot to close the drive door, or put a disk in upside-down. It can also mean the disk is improperly formatted.

If the message identifies certain bad "tracks" or "sectors", you may have some bad spots on the disk surface, or the read/write head may be dirty or out of alignment. Check the error message section of your operating system manual. It may tell you to copy all files you want to save onto another disk, then use an unimportant practice disk in the error drive to see if the head is reading and writing correctly.

**Disk and File Space**

CHKDSK

MS-DOS

A>CHKDSK  
179712 bytes total disk space  
22016 bytes in 2 hidden disk files  
138752 bytes in 24 user files  
18944 bytes available on disk

STAT

CP/M

A>STAT  
A:R/W, Space: 154k  
B:R/W, Space: 446k

**Illustration B-2: Display Disk Status**

- A. Display space available on disk:  
MS-DOS: **CHKDSK** CP/M: **STAT**
- B. Display space available on disk in drive B:  
MS-DOS: **CHKDSK B:** CP/M: **STAT B:**
- C. Display size of each disk file:  
MS-DOS: **DIR** CP/M: **STAT \*.\***
- D. Display size of each .CAL file:  
MS-DOS: **DIR \*.CAL** CP/M: **STAT \*.CAL**

**Disk Directory**

DIR

MS-DOS

A>DIR  
COMMAND COM 17664 4-15-83 11:15a  
CHKDSK COM 6400 4-22-83 13:20P

CP/M

A>DIR  
A:PIP COM :STAT COM :FORMAT COM :SYSGEN COM  
A:SC2 COM :SC2 OVL :SC2 HLP :SAMPLE CAL

**Illustration B-1: Display Disk Directory**

- A. Display a directory of disk files:  
MS-DOS: **DIR** CP/M: **DIR**
- B. Display a directory of files in drive B:  
MS-DOS: **DIR B:** CP/M: **DIR B:**
- C. Display a directory of files with .CAL extensions only.  
MS-DOS: **DIR \*.CAL** CP/M: **DIR \*.CAL**

NOTES: To stop a directory from scrolling, press (CTRL S).  
To restart the scrolling, press (CTRL S) or (CTRL Q).  
To cancel the command, press (CTRL C).

## APPENDIX B

### Managing Your Disk Files

#### Erase Files

ERASE  
ERA

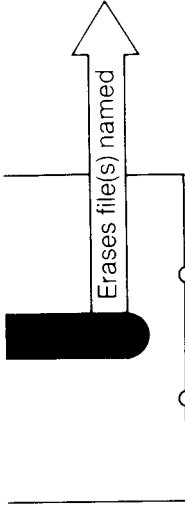


Illustration B-4: Erase a File

- A. Erase all disk files:  
MS-DOS: **ERASE \*.\*** CP/M: **ERA \*.\***
- B. Erase all .CAL files:  
MS-DOS: **ERASE \*.CAL** CP/M: **ERA \*.CAL**
- C. Erase a file:  
MS-DOS: **ERASE filename.ext** CP/M: **ERA filename.ext**

## APPENDIX B

### Managing Your Disk Files

#### Copy Files

COPY  
PIP

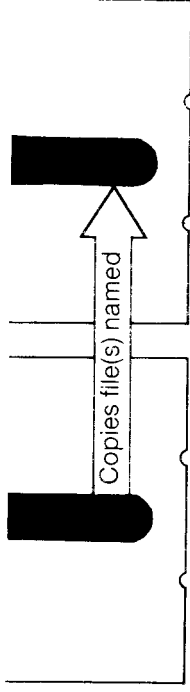
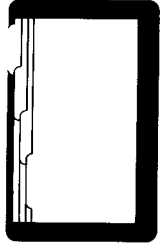


Illustration B-3: Copy a File

- A. Copy all files from drive A to drive B and verify:  
MS-DOS: **COPY A:\*. \* B:/V**  
CP/M: **PIP B:=A:\*. \*[V]**
- B. Copy .CAL files from drive A to drive B:  
MS-DOS: **COPY A:\*.CAL B:**  
CP/M: **PIP B:=A:\*.CAL**
- C. Copy a file from drive A to drive B:  
MS-DOS: **COPY A:filename.ext B:**  
CP/M: **PIP B:=A:filename.ext**

NOTE: The verify option used in example A is not required, but is recommended -- especially when copying program files. The verify option will notify you if the copy is incomplete.



## APPENDIX B

### Managing Your Disk Files

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#### **Rename Files**

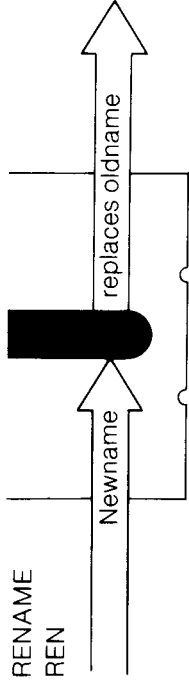


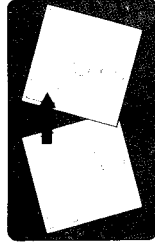
Illustration B-5: Rename a File

Rename a disk file:

MS-DOS: **RENAME oldname.ext newname.ext**

CP/M: **REN newname.ext = oldname.ext**

For instructions on how to prepare a blank disk for your computer, and how to prepare a SuperCalc<sup>2</sup> program disk for daily use, see Appendix C.



## C. Preparing Your Disks

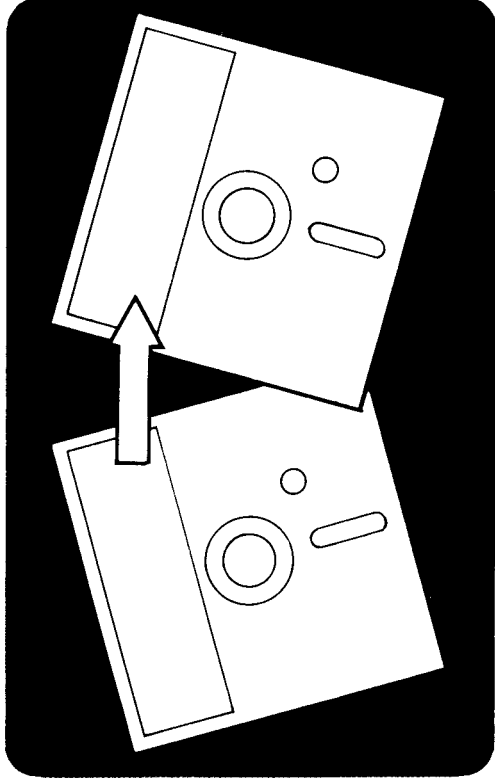
### Contents

PART 1 Preparing a SuperCalc<sup>2</sup> program disk for daily use

Purpose	C-2
A note to experienced computer users	C-2
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Procedure	C-5
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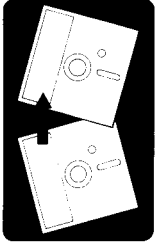


## APPENDICES

### Preparing Your Disks

## APPENDIX C

### Preparing Your Disks



#### “CP/M systems” vs. “MS-DOS systems”

In this Appendix, “CP/M systems” means the operating systems named CP/M, CP/M-86, Concurrent CP/M-86, MP/M and MP/M-86. “MS-DOS systems” means the operating systems named MS-DOS and the Disk Operating System (DOS) used with the IBM Personal Computer.

#### Before you begin:

If you are new to microcomputers, you need to read the instructions that came with your computer to learn how to:

- Set up your equipment.
- Put your disks into your disk drives properly, remove disks properly, and identify the system startup drive.
- Handle your disks with care. For example, do not touch the surface of the disk inside the slotted opening; do not write on an attached disk label with anything but a soft felt-tip pen (see other disk handling tips printed on the disk envelope).

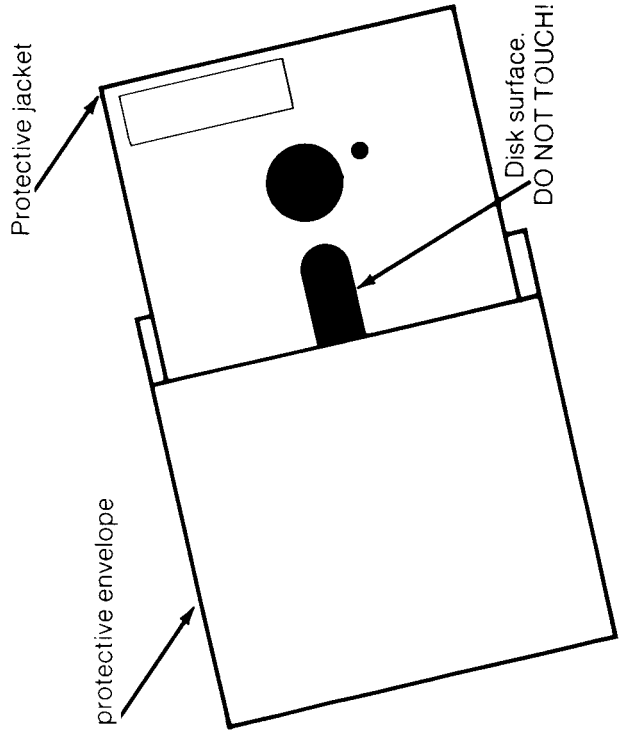
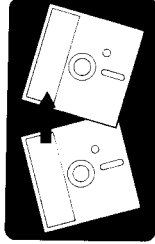


Illustration C-1: Disk and Envelope



## APPENDIX C

### Preparing Your Disks

#### PART 1

### Preparing a SuperCalc<sup>2</sup> program disk for daily use

#### Purpose:

To prepare a SuperCalc<sup>2</sup> program disk containing your operating system startup and file management utilities:



- To avoid altering or damaging the original disk(s) shipped with your SuperCalc<sup>2</sup> package.
- To be able to start your operating system, use the SuperCalc<sup>2</sup> program, and manage your disk files with a single program disk.

#### A note to experienced computer users:

You already know much of the information presented in this Appendix, but before you skip to Appendix D, please read this:

- If you use CP/M-86, Concurrent CP/M-86, or MP/M-86:  
Copy TOD.COMD from your operating system disk to your SuperCalc<sup>2</sup> program disk. TOD.COMD allows you to enter a system date, used by the TODAY calendar function in SuperCalc<sup>2</sup>. (Before you begin a SuperCalc<sup>2</sup> session, enter a date and time at the system prompt. Example: TOD 09/22/83 13:30)
- If you use an IBM Personal Computer, read PART 2 of this Appendix.

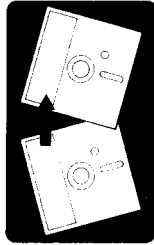
#### A note about the key:

Keyboards differ from one computer to another. We use the  symbol to represent the key that is variously labeled RETURN, ENTER, EXECUTE, or with a symbol similar to .



## APPENDIX C

### Preparing Your Disks



#### Procedure:

##### 1. Formatting a blank disk:

- Put a copy of your operating system disk into disk drive A. Put a blank disk into drive B. If you have one or more "floppy" or "hard" disk drives with different names, substitute your own drive names for those in the examples.

In our examples, the source drive is A and the destination (or target) drive is B. Make sure the disk in drive B, or whichever destination drive you specify, does not contain any files you want to keep:

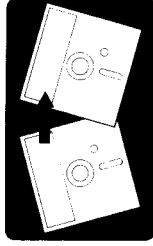
**FORMATTING WIPES OUT ALL DISK FILES** as it prepares the surface of the disk for data storage.

You can type system entries using capital or lower case letters. To erase typing errors, use the **(BACKSPACE)** key.

- For most MS-DOS systems:  
You can combine steps 1 and 2 by using /S to transfer your operating system, as in our example. At the A > prompt type:  
**FORMAT B:/S** (↵)  
then respond to prompts.
- For CP/M systems:  
Formatting commands and procedures vary from one brand of computer to another.  
The procedure is often as simple as entering the filename of your formatting program, then responding to two or three program prompts. See the manual that came with your computer.

## APPENDIX C

### Preparing Your Disks



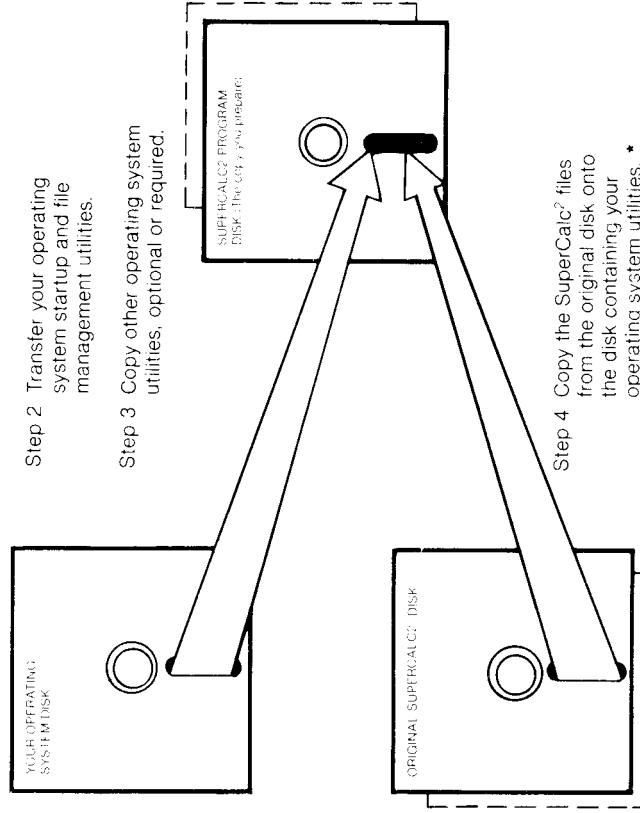
#### Overview:

In general, here is what you do to prepare a SuperCalc<sup>2</sup> program disk for daily use:

Step 1 Format a blank disk. \*

Step 2 Transfer your operating system startup and file management utilities.

Step 3 Copy other operating system utilities, optional or required.



Step 4 Copy the SuperCalc<sup>2</sup> files from the original disk onto the disk containing your operating system utilities. \*

Note: If you receive SuperCalc<sup>2</sup> on more than one original disk, make a copy of each of them. \*

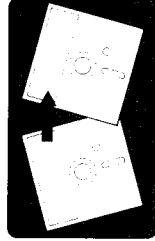
#### Illustration C-2: Prepare Program Disk

- \* Copy the original SuperCalc<sup>2</sup> disk files onto a fixed (or "hard") disk if you have one. Do not re-format a fixed disk.

**NOTE:** You might also need to use the SuperCalc<sup>2</sup> installation program to tailor SuperCalc<sup>2</sup> for your terminal. Appendix D tells you how to determine whether installation is required.

## APPENDIX C

### Preparing Your Disks



### 3. Copying additional system utilities

Here is an example of how to copy a file from a disk in drive A to a disk in drive B:

For MS-DOS systems, type: **COPY A:filename.ext B:/V**

For CP/M systems, type: **PIP B:=A:filename.ext[V]**

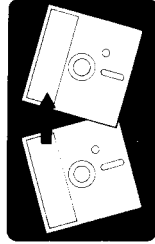
- Copy the appropriate utilities on the list below from your operating system disk to the disk you are preparing:

Operating System	Utilities to copy	Description
MS-DOS	CHKDSK.COM MODE.COM	Displays disk space status. Used by SuperCalc AUTOEXEC.
CP/M & MP/M	STAT.COM PIP.COM	Displays disk space status. Copies disk files.
CP/M-86, Conc. CP/M-86, & MP/M-86	STAT.COM PIP.COM TOD.COM	Displays disk space status. Copies disk files. Required to enter system date
CP/M-86 only	CPM.SYS	Required to start system.
MP/M-86 only	MPM.SYS	Required to start system.
Concurrent CP/M-86 only	FUNCTION.COM DATA.PFK	Assigns keyboard functions.* Restores keyboard functions.*

\* CONCURRENT CP/M-86 USERS ONLY: See "IBM Personal Computer special considerations," PART 2, for details about using FUNCTION.COM and DATA.PFK.

## APPENDIX C

### Preparing Your Disks



### 2. Transferring the operating system

Note that transferring does not remove any files from the source disk, it just copies the system files to the destination disk. At the A> prompt:

- For most MS-DOS systems:  
You already transferred your operating system (step 1 above) with the FORMAT B:/S command.
- For most CP/M systems type:

**SYSGEN** (then respond to prompts)

Your computer might require a different command or procedure.

#### A note about operating system commands:

In Appendix B we provide instructions for using the five basic "file management" commands.

You transferred these "built-in" file management commands with your operating system:

MS-DOS commands: DIR, COPY, ERASE, RENAME.

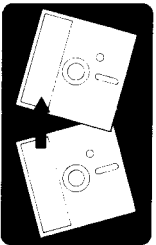
CP/M commands: DIR, ERA, REN.

The other file management commands must be copied with the COPY or PIP command, as described in step 3 below:

MS-DOS command: CHKDSK.

CP/M commands: STAT, PIP.

The other utilities you will copy at step 3 have special functions described elsewhere in this manual or in your operating system manual.



### Original SuperCalc<sup>2</sup> Disk Files

Listed by category and operating system

SuperCalc<sup>2</sup> Program Files

These are the files you must have on your program disk to run the SuperCalc<sup>2</sup> program.

CP/M & MP/M	CP/M-86 & Conc. CP/M-86	MS-DOS
SC2.COM	SC2.COMD	SC2.COM
SC2.OVL	SC2.O86	SC2.OVL
SC2.HLP	SC2.HLP	SC2.HLP

Sample Spreadsheet Files

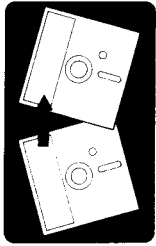
These are the files you need to be able to use the lessons provided in the SuperCalc<sup>2</sup> package. These files can be in any disk drive.

CP/M & MP/M	CP/M-86 & Conc. CP/M-86	MS-DOS
BRKEVN.CAL	BRKEVN.CAL	BRKEVN.CAL
BUDGET.CAL	BUDGET.CAL	BUDGET.CAL
CHECKS.CAL	CHECKS.CAL	CHECKS.CAL
SAMPLE.CAL	SAMPLE.CAL	SAMPLE.CAL
TENMIN.CAL	TENMIN.CAL	TENMIN.CAL

Installation Files

If you need to use the installation program (described in Appendix D), you will need these files in one of your drives: The installation files do not need to be on the disk with the SuperCalc<sup>2</sup> program files.

CP/M & MP/M	CP/M-86 & Conc. CP/M-86	MS-DOS
INSTALLS.COM or INSTALL.COM	INSTALLS.COMD or INSTALL.COMD	INSTALLS.COM
INSTALL.OVL	INSTALL86.OVL	INSTALL.COM or INSTALL.OVL
INSTALL.DAT	INSTALL86.DAT	INSTALL.DAT



### 4. Copying the SuperCalc<sup>2</sup> files

The final step in preparing your program disk is to copy the files from the original SuperCalc<sup>2</sup> disk to the disk you are preparing. Note that you might also need to install SuperCalc<sup>2</sup> so it works properly with your video terminal (see Appendix D for details).

- Remove your operating system disk from drive A and insert your SuperCalc<sup>2</sup> program disk (that is, the disk you are preparing).
- Put the original SuperCalc<sup>2</sup> disk into drive B.

Substitute your own drive names if different than A and B.

If you have more than one original SuperCalc<sup>2</sup> disk, repeat the disk preparation and copy procedures for each disk.

- CP/M system users only: Press **CTRL C** (press the keys labeled CTRL and C at the same time) to tell your system you changed disks.
- Copy the original SuperCalc<sup>2</sup> disk files to your program disk in drive A. At the A> prompt:

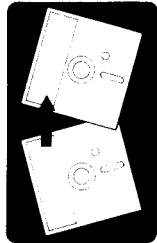
For MS-DOS systems, type: **COPY B:\*.\* A:/V** ↵

For CP/M systems, type: **PIP A:=B:\*.\*[V]** ↵

#### NOTES:

- The \* (asterisk) character allows you to copy an entire disk without naming every file.
- If you see "DISK FULL" or a similar message displayed during the copy procedure, you need to copy some files onto another disk.

The information on the following list will help you decide which files to put on which disk. The only files you need to run SuperCalc<sup>2</sup> are the "SuperCalc<sup>2</sup> Program Files." The other files serve useful support functions, as described below.



## APPENDIX C

### Preparing Your Disks

#### PART 2

### IBM Personal Computer special considerations

This section covers the following topics:

- Special-purpose files with IBM's DOS
- Special-purpose files with Concurrent CP/M-86
- Special keyboard functions

#### Special-purpose files with IBM's DOS

##### The AUTOEXEC.BAT file

Your SuperCalc<sup>2</sup> program disk contains an AUTOEXEC.BAT file that starts SuperCalc<sup>2</sup> when you switch on your computer (after the normal startup delay).

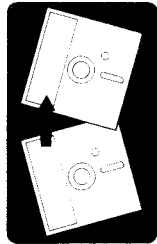
The AUTOEXEC.BAT file assumes you have the following:

An 80-column color monitor, and a color/graphics adapter board in your computer.

Or, an 80-column monochrome monitor, and a monochrome adapter board in your computer.

Most IBM PC owners have one of the above combinations. SuperCalc<sup>2</sup> works properly with either combination if you use the AUTOEXEC.BAT file as is (that is, without changing its contents), or if you start SuperCalc<sup>2</sup> at the system prompt (by typing SC2).

If you have a different monitor-adapter board combination, you can change the contents of AUTOEXEC.BAT to match it (see instructions below).



## APPENDIX C

### Preparing Your Disks

#### SuperData Interchange Files

These files are not required to use SuperCalc<sup>2</sup>. SDI is used for file conversions only. See the SuperData Interchange manual for program capabilities.

CP/M & MP/M	CP/M-86 & Conc. CP/M-86	MS-DOS
SDI.COM	SDI.COMD	SDI.COM
SDI.OVL	SDI.OVL	SDI.OVL

#### Special-Purpose Files

DATTIM allows CP/M-MP/M users to enter a system date.

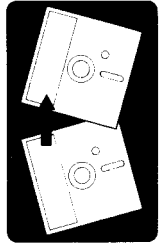
The other files perform special console functions for the IBM PC. See "IBM Personal Computer special considerations" below.

CP/M & MP/M	Concurrent CP/M-86 only	IBM PC And Compatibles
DATTIM.COM	SC2.PFK	COLOR.COM MONO.COM AUTOEXEC.BAT AUTOBW.BAT AUTO40.BAT AUTO40BW.BAT

#### Maintenance File

This file is not required to use SuperCalc<sup>2</sup>. MAINTAIN is a program that can check another program for certain kinds of damage, and make minor "repairs." The Maintain program is described in Appendix G.

CP/M & MP/M	CP/M-86 & Conc. CP/M-86	MS-DOS
MAINTAIN.COM	MAINTAIN.COMD	MAINTAIN.COM



## APPENDIX C Preparing Your Disks

### You might need to change the AUTOEXEC.BAT file

If you have one of the monitor-adapter board combinations described below:

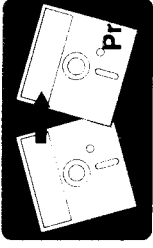
- Put your SuperCalc<sup>2</sup> program disk (your copy, not the original) in your system startup drive (usually drive A).
- Enter the command that matches your configuration from the following three options:
  - a. An 80-column monochrome monitor and a color/graphics adapter board.  
At the A>, type:  
**COPY AUTOBW.BAT AUTOEXEC.BAT** ↵
  - b. A 40-column color monitor and a color/graphics adapter board.  
At the A>, type:  
**COPY AUTO40.BAT AUTOEXEC.BAT** ↵
  - c. A 40-column monochrome monitor and a color/graphics adapter board.  
At the A>, type:  
**COPY AUTO40BW.BAT AUTOEXEC.BAT** ↵

### If you do not want SuperCalc<sup>2</sup> to start automatically:

Erase AUTOEXEC.BAT and the other .BAT files from your program disk: Use your operating system erase command.

To begin a SuperCalc<sup>2</sup> session without the AUTOEXEC.BAT file on your program disk, type **SC2** at the system prompt.

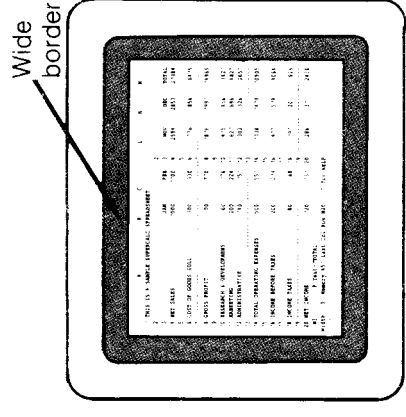
Exception: If you have a monochrome monitor and a color adapter board, type **SC2 /BW** at the system prompt to begin a SuperCalc<sup>2</sup> session.



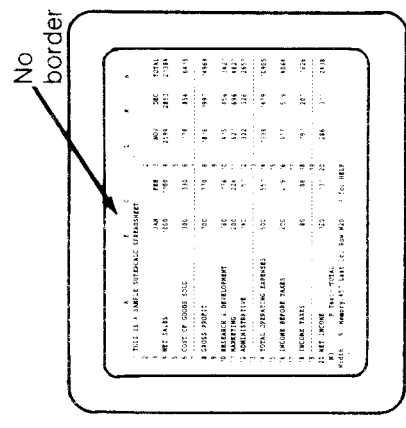
## APPENDIX C Preparing Your Disks

### Color or monochrome adapter board?

If you are not sure which kind of adapter board you have, SuperCalc<sup>2</sup> will show you: Your SuperCalc<sup>2</sup> spreadsheet will be framed within a border if you have a color adapter in your computer.



You have a color adapter board.



You have a monochrome adapter board.

Illustration C-3: Terminal Types

## APPENDIX C

### Preparing Your Disks

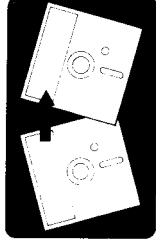
- HOME** Moves cursor to cell A1 (same as =A1); "re-paints" screen.
- INS** Insert mode on/off switch for data entry.
- DEL** Deletes character at data entry cursor (same as down arrow).

#### **CP/M-86 users only:**

To restore the original key functions, reset your system when you finish using SuperCalc<sup>2</sup>. To reset your system, press the **ALT**, **CTRL** and **DEL** keys at the same time.

You have finished copying files onto your program disk.

If "[Must Be Installed]" is printed on the original SuperCalc<sup>2</sup> disk label, you need to tailor SuperCalc<sup>2</sup> for your terminal. The procedure is described in Appendix D.



## APPENDIX C

### Preparing Your Disks

#### **If you have two monitors (color & monochrome) connected to your IBM PC:**

Use the files COLOR.COM and MONO.COM on your program disk to direct data to either monitor. When you start using SuperCalc<sup>2</sup>, data will be sent to your monochrome monitor automatically (by default).

To direct data to the color monitor, type **COLOR** at the system prompt (before you start SuperCalc<sup>2</sup>). To change back to monochrome without restarting your computer, type **MONO** at the system prompt.

#### **Special-purpose files with Concurrent CP/M-86**

If you are using SuperCalc<sup>2</sup> with Concurrent CP/M-86, you must use the FUNCTION command to assign special keyboard functions (see section 3 below). The FUNCTION command will also disable the unassigned function keys (F3-F10) so they will not cause problems if you press them by mistake.

#### **Concurrent CP/M-86 users only:**

At each SuperCalc<sup>2</sup> session, type the following command at the system prompt:

#### **FUNCTION SC2.PFK**

To restore the original keyboard functions when you finish using SuperCalc<sup>2</sup>, type the following command at the system prompt:

#### **FUNCTION DATA.PFK**

#### **Special keyboard functions**

With all versions of SuperCalc<sup>2</sup> for the IBM PC (IBM's DOS, CP/M-86, and Concurrent CP/M-86 versions) you can use the following special keys--in addition to the standard set of keys used by SuperCalc<sup>2</sup>:

- F1** AnswerKey. Displays current AnswerScreen (same as **?** key).
- F2** Clears data entry/command line (same as **CTRL Z**)

## D. Installing SuperCalc<sup>2</sup>

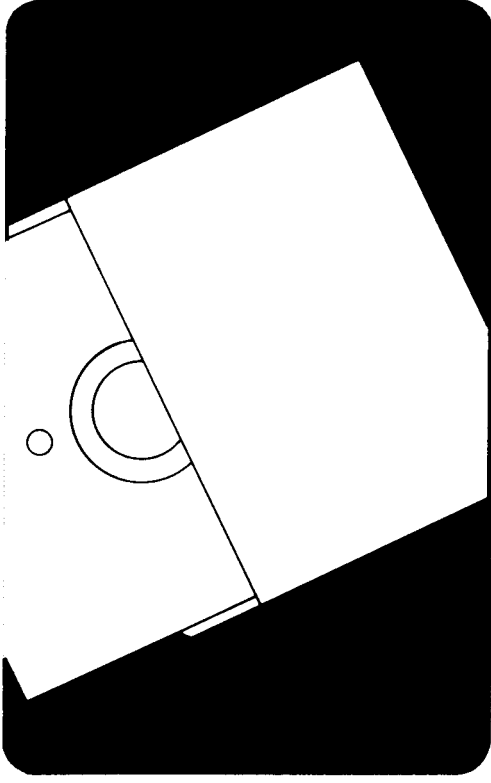
### Contents

PART 1 Tailoring SuperCalc <sup>2</sup> to your terminal (if required)	
Purpose	D-2
Procedure	D-2
Compatible terminals	D-5
PART 2 Changing screen or printer default settings (optional)	
Purpose	D-6
Default settings you can change	D-7
Procedure	D-9

#### Installation might not be required:

If you see "[Must Be Installed]" on your original SuperCalc<sup>2</sup> disk label, the procedure outlined in PART 1 is required. PART 2 is optional.

If you do not see "[Must Be Installed]" on your original SuperCalc<sup>2</sup> disk label, you can skip PART 1 and begin using SuperCalc<sup>2</sup>. Optionally, you can go on to PART 2.



## APPENDICES

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

**Note:** You can quit the program at almost any time — WITHOUT SAVING YOUR SELECTION — by pressing **CTRL-C** (press the keys labeled CTRL and C at the same time).

5. You see a list of brand names titled TERMINALS. Select the letter in front of the name of your terminal, then respond to prompts. If your terminal name is not displayed, see the list of "Compatible Terminals" at the end of PART 1.
6. After you select your terminal at Step 5, here are your choices:
  - Save your selection, then exit from the installation program. Information about your terminal is sent to SuperCalc<sup>2</sup>.
  - Exit without saving your terminal selection, if you wish.
  - Optionally, change some screen or printer default settings (usually not required for the proper functioning of SuperCalc<sup>2</sup>). Choose the "Modify" option at the TERMINALS screen, then change the settings at the MODIFICATIONS screen. See PART 2 for details.

After you save your terminal selection, you can start using SuperCalc<sup>2</sup>.

#### IF YOUR TERMINAL IS NOT LISTED ON THE TERMINALS SCREEN:

See the list of compatible terminals below, or see the manual that came with your terminal. The manual might provide the name of a listed terminal compatible to your own.

Select a compatible terminal if yours is not listed on the TERMINALS screen.

## PART 1

### Tailoring SuperCalc<sup>2</sup> to your terminal (if required)

#### Purpose:

To provide the SuperCalc<sup>2</sup> program with data about your terminal.

The installation files you need for this procedure are INSTALL.COM, INSTALL.OVL, and INSTALL.DAT (or INSTALL.COM, INSTAL86.OVL, and INSTAL86.DAT on some systems). Keep these files on the same disk.

If you have a file named INSTALLS (ending in "S") on your disk, it can be used to change default settings (described in PART 2), but SuperCalc<sup>2</sup> has already been tailored to your terminal.

#### Procedure:

1. Put your SuperCalc<sup>2</sup> program disk (the copy you prepared) into the system startup drive — drive A on many computers. If the INSTALL files are on a separate disk in drive B, for example, log onto drive B by typing **B:**. If your drives are not called A and B, substitute your own drive names.
2. To start (or "load") the installation program:
 

Type: **INSTALL**
3. You see the installation program sign-on display, ending with the prompt:
 

Do you wish to proceed (Y/N)? (for Yes or No)

Type: **Y** (no need to press the key)
4. You are asked to enter the name of the SuperCalc<sup>2</sup> program file (SC2), preceded by the name of the drive containing that file, such as "A:" in our example:
 

Type: **A:SC2**



**PART 2**

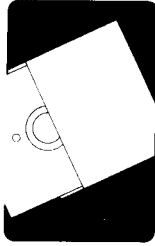
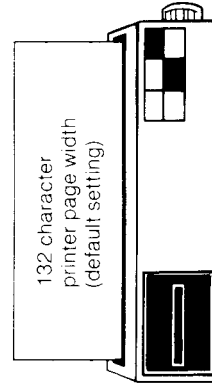
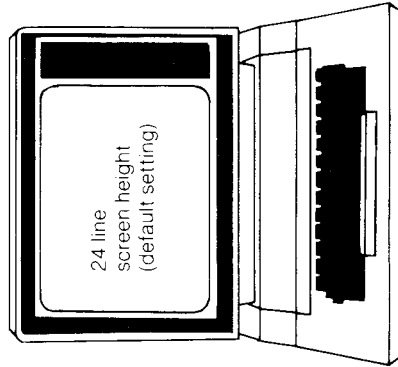
**Changing screen and printer default settings (optional)**

You can skip PART 2 until after you try using the SuperCalc<sup>2</sup> program. You can change certain screen or printer default settings at any time. Some settings, noted on the table below, can be changed in SuperCalc<sup>2</sup> each time you print a spreadsheet.

**Purpose:**

Though SuperCalc<sup>2</sup> is shipped ready to work with most display monitors and printers, you may want to change some default settings. You can change the settings with the SuperCalc<sup>2</sup> installation program.

For example, if your screen height or printer page width are different than the SuperCalc<sup>2</sup> defaults (illustrated below), you can change the defaults to fit your requirements.



**Compatible Terminals**

The following list contains the compatible terminals as of the date of this printing. This list is subject to change as new terminals are added.

Your Terminal	Compatible Brand	Compatible Model
IBM 80	DEC	VT-52
Direct 800	DEC	VT-100
Heathkit H19	Zenith	Z19
Heathkit H89	Zenith	Z19
Teleray 100	DEC	VT-100
Televideo 925	Televideo	920 or 950
Xerox 860	Xerox	820

**IF YOU CAN NOT FIND THE NAME OF A COMPATIBLE TERMINAL:**

Your SuperCalc<sup>2</sup> dealer might be able to custom install the program for your terminal.

Custom installation is a task for programmers or experienced custom installers. If you have the technical know-how to do a custom installation yourself, ask your dealer for a copy of the Dealer's Custom Installation Guide for SuperCalc<sup>2</sup>. You can ask Sorcim for a copy of the guide if your dealer does not have one.

## APPENDIX D

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

See the table of ASCII characters and corresponding hex values, Appendix I.

5. Printer initialization string \* **Unconfigured** or **0**  
Unconfigured means no control codes are sent at the start of a /Output (to printer) command. Control codes turn selected printer features on or off.

Example: For the Epson, the IBM PC, and some other dot matrix printers, the hex value for compressed print is 0F (zero F). The hex value for normal print is 12.

See your printer manual for control codes and hex values for printer capabilities such as compressed print, double strike, italics, etc.

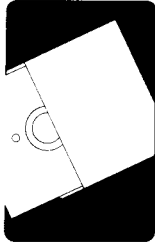
- \* Settings marked with an asterisk (\*) can also be changed within SuperCalc<sup>2</sup> whenever you print a spreadsheet (See /Output command, Setup option.)

#### Procedure:

Note that changing a default setting is not permanent. You can change a modified setting back to the way it was at any time. If you wish, you can exit from the installation program before saving your changes.

1. There are two ways to begin this procedure:
  - (1) From the TERMINALS screen, if you are proceeding from PART 1:

Type: **Z** (to display the MODIFICATIONS screen)



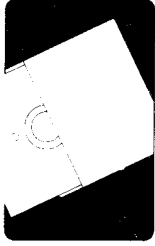
## APPENDIX D

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

#### Default settings you can change:

Original SuperCalc<sup>2</sup> default settings are printed in boldface.

1. Screen dimensions  
**24** lines.  
**80** characters per line.
2. Printer page dimensions \*  
**66** lines.  
**132** characters per line.
3. Printer status  
  
Auto form feed \* **NO** NO means printer pauses between pages till you press the space bar.  
  
Double spacing \* **NO** YES feeds paper without pausing between pages.  
  
NO single spaces printed lines.  
  
YES double spaces printed lines.  
  
Send carriage return & line feed **YES** YES sends both control codes to printer.  
  
NO sends a carriage return control code only (a few printers will double space if they receive the line feed code).
4. Border character **7C** (hex value)  
  
On most screens and many printers, 7C (hex) is the "I" character. If you see an odd-looking character or symbol on your spreadsheet row or column border, you can change this setting. For example, 3A (hex) sets the border character to "...".



## APPENDIX D

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

(2) From the system prompt, such as **A>**, your entry depends on the name of your installation program: if you selected a terminal (PART 1), your filename is **INSTALL**. If you were directed to skip PART 1, your filename is **INSTALLS**.

Reminder:

Your SuperCalc<sup>2</sup> program.disk must be in drive A (or the system startup drive for your computer).

If the installation files are on a separate disk in drive B, for example, log onto drive B by typing **B:** [↵].

- If you have the program named **INSTALL** (.COM or .CMD):

Type: **INSTALL** [↵]

Then respond to program prompts. Select **Z** at the **TERMINALS** screen.

- If you have the program named **INSTALLS** (.COM or .CMD):

Type: **INSTALLS** [↵]

Then respond to program prompts.

2. When you see the screen titled **MODIFICATIONS**:

Select the option corresponding to the screen or printer setting you want to change. Then respond to program prompts.

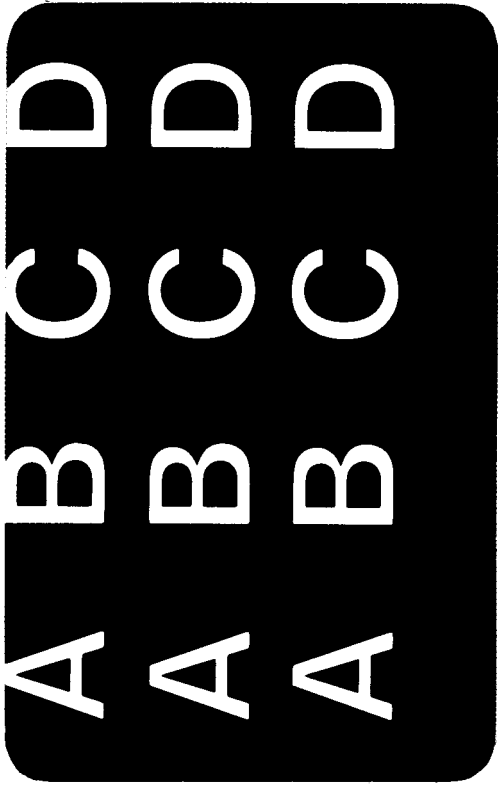
For details about each option, refer to the table above titled "Default settings you can change."

3. To save your changes — from the **MODIFICATIONS** screen:

Select the option beginning with the word "Save," then respond to program prompts. Your changes will be sent to SuperCalc<sup>2</sup>, and you will exit from the installation program.

Note: If you wish, you can choose an option to exit without saving your changes.

That ends the modifications procedure. For safekeeping, we suggest you make a backup copy of your installed SuperCalc<sup>2</sup> program disk(s).



## APPENDICES

### Sorcim Sort Collating Sequence





A B C D  
A B C D  
A B C D

**APPENDIX E**  
**Sorcim Sort Collating Sequence**

**E. Sorcim Sort Collating Sequence.**

The **A**rrange 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:

- space bar
  - !
  - "
  - #
  - \$
  - %
  - &
  - '
  - (
  - )
  - \*
  - +
  - ,
  - 
  - .
  - /
  - :
  - ;
  - <
  - =
  - >
  - ?
  - @
- (continued from previous column)
- [
  - \
  - ]
  - ^
  - \_
  - {
  - |
  - }
  - ~
  - aAbBcC...zZ
  - 0
  - 1
  - 2
  - 3
  - 4
  - 5
  - 6
  - 7
  - 8
  - 9

**F**

**APPENDICES**  
**Compatibility of Files**

revise

R

verify

V

## APPENDICES Software Maintenance for SuperCalc2

G

## APPENDIX F

### Compatibility of Files

## F. Compatibility of Files

When SuperCalc or SuperCalc<sup>2</sup> saves a file on disk, it writes the name of the program as part of the .CAL file. This is checked when SuperCalc or SuperCalc<sup>2</sup> attempts to load the file.

Any .CAL file prepared by SuperCalc can be used by SuperCalc<sup>2</sup> with no changes.

SuperCalc can load a file created by SuperCalc<sup>2</sup> provided that none of the following features of SuperCalc<sup>2</sup> were ever used in the creation of that file.

- Calendar Functions
- Textual values
- User-defined display format
- Hide display format

If the data file does contain data pertaining to these features, SuperCalc will give an error message and not load the file.





---

## G. Software Maintenance for SuperCalc2

MAINTAIN is a Sorcim program which:

- Verifies that the various parts of the SuperCalc<sup>2</sup> program are correct and have not been damaged in any way.
- Allows you to make minor revisions or corrections to the SuperCalc<sup>2</sup> program when these changes are authorized by Sorcim.

You should only use the MAINTAIN program when you suspect that your copy of SuperCalc<sup>2</sup> is damaged in some way, or when advised by Sorcim, either directly or through your dealer.

**CAUTION:** If you make any modifications to the program other than those discussed in this chapter and in the Installation Instructions, the VERIFY and REVISE features can not be used.

### Finding Program Errors

When programs do not function properly, there are at least three possible sources of error. First, the problem could be in the computer hardware. Second, the problem could be a "bug" or error in the program itself. And finally, the problem could be accidental damage to the specific copy of the program being run. Of the three problems, the final one can be extremely troublesome because of confusion with the first two. When something goes wrong, you do not always know where to look for errors.

Magnetic disks are very sensitive and errors can be introduced into a program without your knowledge. Disk errors can sometimes be caused by:

- Turning off the computer with a diskette in the disk drive. This may cause a random "write" to the diskette. If the "write" occurs in an unused part of the disk, there is no problem. But if the "write" occurs in a program, it is possible that part of the program will be changed. The program may not run correctly again.

To run the MAINTAIN program, type the word MAINTAIN (when the program MAINTAIN.COM is on the currently logged drive and no other program is currently running). The program starts with the following screen display:

```

( ( ( Copyright Screen ) ) )

PRESS  IN ORDER TO
-----
V      VERIFY integrity of a program bought from SORCIM
R      REVISE a program (requires Hard Copy Revision Sheet)
S      SHOW remedies for damaged programs
H      HELP - explain available functions
X      EXIT this program and return to System

*** A memory test is being run, please wait a few seconds ***
*** Your memory passed the test with no errors ***

-- Press Letter --) V

What is the NAME of the file for VERIFICATION?

-- Type file name or press Return. Key to EXIT --) SC2.COM

```

Screen G-1: MAINTAIN Main Menu

Select the VERIFY option by typing the letter V. MAINTAIN runs a test of RAM (main memory) in the Transient Program Area. If a bad memory location is found, MAINTAIN.COM prints its address.

Type the name of the program file you want to verify. SuperCalc<sup>2</sup> includes these program files:

```

SC2.COM Main program
SC2.OVL Overlay

```

In this example, we show MAINTAIN verifying the SC2.COM program file. After you give VERIFY the name of the program to check, the error checking procedure is begun. MAINTAIN determines during verification if any authorized revisions have been made to the program file. When a file is verified, the program will list the Revision Reference Number for any revision made to the original program in the same order as the revisions were made.

- Interference from other electrical appliances during disk operations. A small electrical appliance (e.g., a blender) operating on the same electrical circuit can sometimes cause havoc. Some computer systems are more prone to this interference than others.
- Power line fluctuations. Even though power line voltages in the U.S. are quite steady compared to some other countries, there sometimes is a sudden fluctuation that can introduce random errors if the fluctuation occurs during a disk operation.
- Memory chip failure. Hardware problems can cause damage to files before the problem is noticed or corrected.
- Another program which malfunctions and causes damage to files.

You need a reliable way of determining if the copy of SuperCalc<sup>2</sup> being used is running properly. The MAINTAIN program VERIFY option accomplishes this.

## The VERIFY Option

The VERIFY option can accurately determine if any SuperCalc<sup>2</sup> program has been damaged. VERIFY uses sophisticated error checking procedures. If there is a random error in a SuperCalc<sup>2</sup> program, there is less than one chance in one billion that VERIFY will fail to detect it. If VERIFY indicates that the copy of SuperCalc<sup>2</sup> is functioning properly, and there is still an apparent malfunction, it may be attributed to either an inherent flaw in the program or a problem with the computer equipment.







Select the REVISE option by typing the letter R. The screen scrolls, and MAINTAIN asks the following questions:

Type the name of the program file you need to revise. SuperCalc<sup>2</sup> includes these program files:

SC2.COM Main Program  
SC2.OVL Overlay

In this example, we show MAINTAIN revising the SC2.COM program file. After you give REVISE the name of the program to check, the error checking procedure is begun. Before revisions can be made in a file, the program must verify that there are no errors in the file.

MAINTAIN determines during verification what revisions have already been made to the program file. When a file is verified, the program will list the Revision Code for each revision made to the original program in the same order as the revisions were made.

This process follows the steps as the VERIFY option. As each section of the program is read, the computer types an asterisk. This lets you follow the program's progress. As long as the asterisks appear, the program is functioning. When REVISE finishes checking for errors, it tells you if the program on disk is free of errors.



Before using the REVISE option of MAINTAIN, a backup copy of the unrevise, old file should be made. Backup protection is very useful if you make any mistakes during revision. It is also a good practice to keep all Hard Copy Revision Sheets.

#### How To Use REVISE

1. Make an extra backup copy of SuperCalc<sup>2</sup> programs.
2. Run the MAINTAIN program by typing MAINTAIN.
3. Select the REVISE option by typing R.
4. Follow the instructions presented by the computer.

**NOTE:** Do not run the REVISE option unless you have a Hard Copy Revision Sheet from Sorcim.

Example of the REVISE option in MAINTAIN.COM

The program starts with the following screen display:

```

( ( ( Copyright screen ) ) )

PRESS  IN ORDER TO
-----
V      VERIFY integrity of a program bought from SORCIM
R      REVISE a program (requires Hard Copy Revision Sheet)
S      SHOW remedies for damaged programs
H      HELP - explain available functions
X      EXIT this program and return to System

*** A memory test is being run, please wait a few seconds ***
*** Your memory passed the test with no errors ***

-- Press Letter --) R

What is the NAME of the file for VERIFICATION?

-- Type file name or press Return Key to EXIT --) SC2.COM

```

Screen G-3: MAINTAIN Main Menu (repeated)



Following each input, the program will retype the input and ask you if this is correct. If you indicate that the input is correct, the program will go to the next step. If you say the input is incorrect, the program will let you re-type the information.

The program now asks you to input the first line of code. Each code line contains information that will allow the computer to determine if there have been errors in typing the line. The code can be typed in groups of three characters, or all at once with no spaces. Typing in groups of three letters is easiest for most people.

```

Please type Line Number 1 or press Return Key to EXIT
Line Number 1: --)CNA AAB AAA KBA BOF KLC
Your Input:  CNA AAB AAA KBA BOF KLC
-- Is this correct?  Press Y for Yes, N for No --)Y
Line #2: --)AOA CMN AFA AAD AAA EMN
Your Input:  AOA CMN AFA AAD AAA EMN
-- Is this correct?  Press Y for Yes, N for No --)Y
Line #3: --)X
Your Input:  X
-- Is this correct?  Press Y for Yes, N for No --)Y
    
```

Screen G-5: MAINTAIN — REVISE option continued

Your input is echoed back so that you can determine if you have made a typing error. Once you indicate that the line is correct, MAINTAIN will check it to see if it can find any errors. If an error is found, you will have the opportunity to re-enter the line.



```

MAINTAIN is now checking File "SC2.COM" for possible errors.
*****
*****
*****
*****
*****
*****
*****
*****
*****
*****
*****
*****
*****
*****
*****
*** File "SC2.COM" has NO errors ***
-- Press any KEY to continue --)

You should have an Sorcim HARD COPY REVISION SHEET.
Please type the revision carefully. There are
internal checks to find typing mistakes,
but be careful. MAINTAIN will only revise a program
when all revision lines have been typed correctly.

-- Type the Revision Code or Return Key to EXIT--)ABEI
Your Input: ABEI
-- Is this correct?  Press Y for Yes, N for No --)
    
```

Screen G-4: MAINTAIN — REVISE option

When you press any key, MAINTAIN will be ready to accept the revision information.

MAINTAIN instructs you to enter the Revision Code. This combination of letters is printed at the top of the Hard Copy Revision Sheet. The program makes certain checks on this reference code to determine if it is correct. This code must match a code built into the program to be sure that you do not inadvertently change the wrong program. If the program will not accept a Revision Code, contact Sorcim.

The file SC2.COM has now been revised. MAINTAIN has also included the name of the revision as part of the SC2.COM file. You can verify that the revision has been made at any time using the VERIFY option. The verify option lists all revisions made to a file. The following screen shows the revision that was just explained.

```
MAINTAIN is now checking File "SC2.COM" for possible errors.
*****
*****
*****
*****
*****
*****

*****
*****
*****
*****
*****

Revisions have been made to this file in the following order:

ABEI
*** File "SC2.COM" has NO errors ***
-- Press any KEY to continue --)
```

Screen G-7: MAINTAIN — VERIFY option after revision

If no errors are detected, continue with each line until you have entered all of the lines on the Hard Copy Revision Sheet.

NOTE: You can abandon the revision process and return to the MAINTAIN Master Menu at any time by pressing [ESC] before any letters have been typed.

After all lines are entered, MAINTAIN will make the necessary revisions in the SuperCalc<sup>2</sup> program. MAINTAIN keeps you informed of revision progress by typing an asterisk as each program record is changed.

```
The revision is being processed.
*****
*****
*****
*****
*****

File "SC2.COM" has check values placed
REVISION IS COMPLETED.
-- Press X to EXIT or any other KEY to continue --)
```

Screen G-6: MAINTAIN — REVISE option completed

When MAINTAIN has finished revising the SuperCalc<sup>2</sup> program, it tells you how to make backup copies (not shown here). It is important that all revised copies of SuperCalc<sup>2</sup> be clearly labelled so that another user can determine what revisions have been made to a particular copy. Keeping the Hard Copy Revision Sheets is also important, as is keeping a copy of the original unrevised program.

To avoid confusion, many users find it best to destroy old copies of SuperCalc<sup>2</sup> a few weeks after the revision has been made. The old copies, though, should be kept at least until you are certain that the revisions have been made correctly, and that no errors have been introduced to the program.

**NEVER DESTROY THE ORIGINAL DISTRIBUTED COPY OF SUPERCALC<sup>2</sup>.**

## APPENDIX H

### Error Messages

## H. 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**

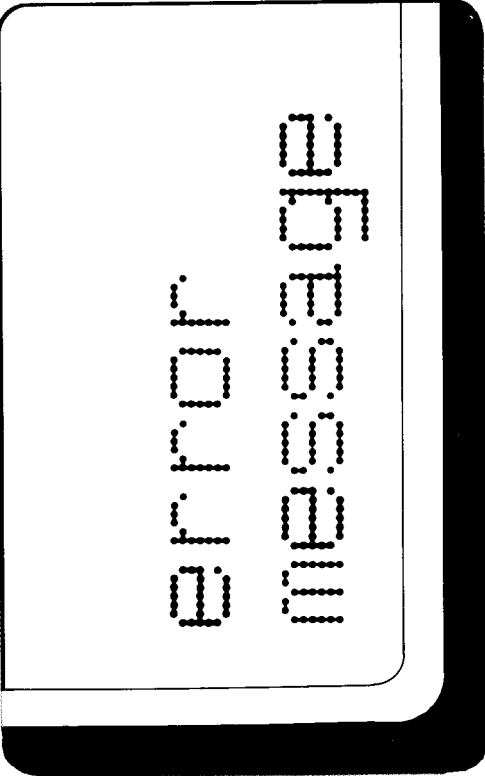
There is not enough room on the disk to write the file. Replace the disk with one that has room.

### **Filename ERROR**

The file name is not in proper format.

### **File not loadable**

The file is not in SuperCalc<sup>2</sup> format.



error  
message

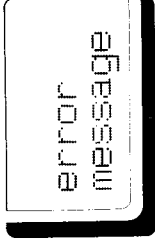
## APPENDICES

### Error Messages

# H

## APPENDIX H

### Error Messages



#### **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.

#### **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 disk 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**

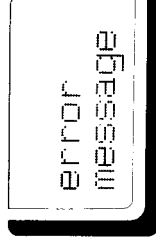
Occurs when you clear a title lock or set a new title lock.

#### **"To" must be cell**

The destination must be a cell. Correct the entry.

## APPENDIX H

### Error Messages



#### **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. C

#### **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 64K 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.

#### **No room (at edge) to display window**

Error is the result of attempting a /Window,Vertical at the left-most or right-most 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.

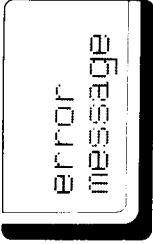
#### **Printer not ready or out of paper**

This error message is for IBM PC only. SuperCalc<sup>2</sup> 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.

## APPENDIX H

### Error Messages



error  
message

---

#### **"To" must be partial column**

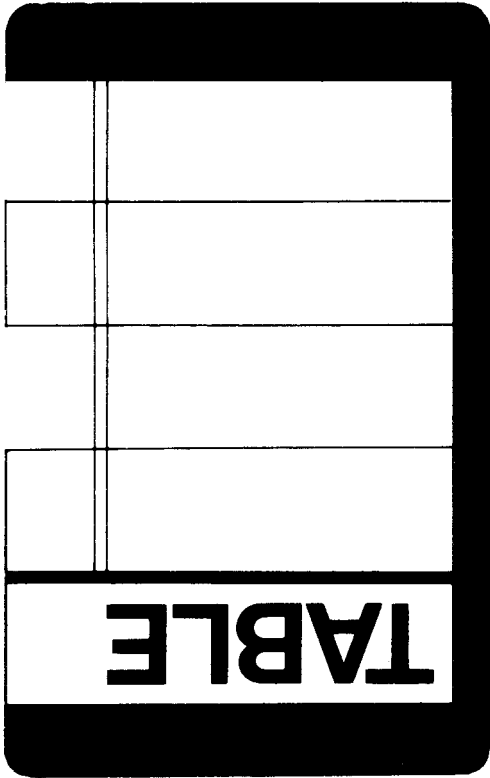
The destination must be a partial column.

#### **"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.



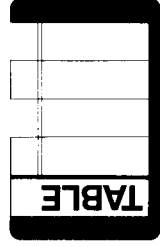
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## APPENDICES ASC11 Table



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00	CTRL @	NUL	SP	0	@	P	p
01	CTRL A	SOH	!	1	A	Q	q
02	CTRL B	STX	"	2	B	R	r
03	CTRL C	ETX	#	3	C	S	s
04	CTRL D	EOT	\$	4	D	T	t
05	CTRL E	ENQ	%	5	E	U	u
06	CTRL F	ACK	&	6	F	V	v
07	CTRL G	BEL	'	7	G	W	w
08	CTRL H	BS	(	8	H	X	x
09	CTRL I	HT	)	9	I	Y	y
0A	CTRL J	LF	*	:	J	Z	z
0B	CTRL K	VT	+	;	K	[	{
0C	CTRL L	FF	,	<	L	\	
0D	CTRL M	CR	-	=	M	]	}
0E	CTRL N	SO	.	>	N	^	~
0F	CTRL O	SI	/	?	O	_	DEL (RUBOUT)

### KEY

hex | 0D | 13 | CTRL M | GR | ASCII Name | decimal



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# **Super Data Interchange<sup>®</sup>**

## **User's Guide & Reference Manual**

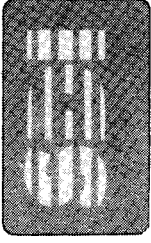
Documentation 1.13  
September 1983

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# WELCOME TO SUPERDATA INTERCHANGE™

## What is SuperData Interchange?

### 1. Welcome to SuperData Interchange™

SuperData Interchange allows you to convert a data file from another program into a SuperCalc data file or vice versa.

#### What is SuperData Interchange?

Without SuperData Interchange, exchanging information between SuperCalc and other programs can be difficult and time consuming. SuperCalc stores a data file on disk in a special binary format for efficient disk storage and quick loading of files. Only SuperCalc can read these files, other programs cannot use them.

SuperData Interchange converts SuperCalc's binary files to other formats that use ASCII characters and vice versa. ASCII (American Standard Code for Information Interchange) is an internationally recognized character set code. Appendix B contains an ASCII table.

SuperData Interchange can convert three types of ASCII files into SuperCalc binary files and can generate the first 2 types of ASCII files from a SuperCalc file.

1. *Comma Separated Value* — .CSV. A .CSV file contains numeric values or text strings from file items (fields). Each item is separated by a comma. A .CSV file does not contain formulas or display formatting characteristics.
2. *SuperData Interchange format* — .SDI. An .SDI file defines each cell using three fields.
3. *VisiCalc*™ — .VC. SuperData Interchange can convert a VisiCalc data file into SuperCalc format, retaining formulas and display format characteristics.

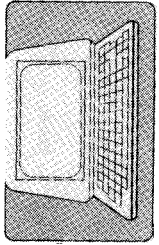
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## USING YOUR SUPERDATA INTERCHANGE PROGRAM

### A Sample File Conversion



## 2. Using Your SuperData Interchange Program

### A Sample File Conversion

A sample file (BUDGET.CAL) is provided on your SuperCalc distribution disk. When loaded into the SuperCalc program, the display looks as follows:

```

1:  A      B      C
2:  1:SAMPLE BUDGET
3:  3:DESCRIPTION      AMOUNT      BALANCE
4:  5:-----
6:  6:STARTING BALANCE      250.00
7:  7:PAYDAY      800.00
8:  8:RENT      -350.00      450.00
9:  9:UTILITIES      -75.00      375.00
10: 10:FOOD      -200.00      175.00
11: 11:AUTO      -100.00      75.00
12: 12:-----
13:

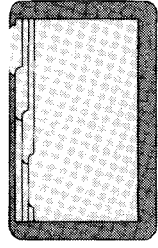
```

Screen 2-1: Budget.Cal

If you attempt to display the file contents by typing:

```
A > TYPE BUDGET.CAL
```

you will see only the title line (the contents of cell A1) and the SuperCalc version number which created the file. A ".CAL" file is "Binary" and the TYPE command does not display the data. Most other programs are not able to use this data because it is stored in a program-specific format.



## WELCOME TO SUPERDATA INTERCHANGE™

### Why Use SuperData Interchange?

### Why Use SuperData Interchange?

Converting data created by one program for use by another program saves time and money.

Suppose you have your most recent Profit and Loss Statement in .CSV format from your General Ledger package and want to do a little "what if" modeling with SuperCalc. Or perhaps you want to transfer some data in a SuperCalc spreadsheet to a program that uses .SDI format to further analyze the data and produce various reports.

With SuperData Interchange there's no need to key in the information a second time. You save time and avoid errors by converting the existing file.

SuperData Interchange displays a menu on the screen for selecting the type of conversion you want. The program prompts for the name of the file to be converted (the source file) and the name for the file to be created by the conversion (the destination file). The source file contents are NOT altered.

Here are some examples of the ways SuperData Interchange can convert data to and from different programs.

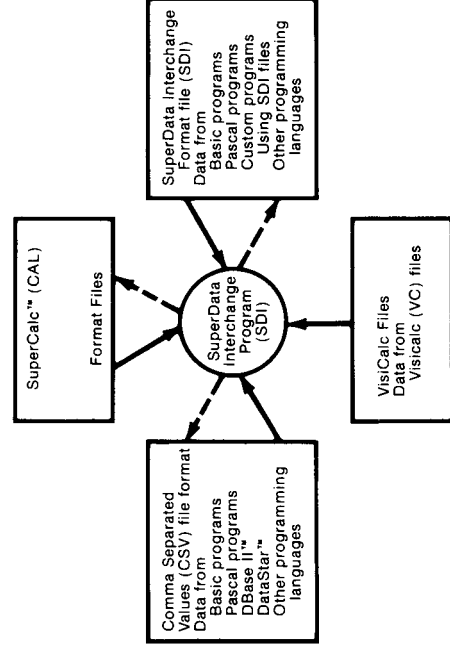


Illustration 1-1: SuperData Interchange

## USING YOUR SUPERDATA INTERCHANGE PROGRAM

### Specifying Filename and Extensions

### Specifying Filename and Extensions

There are two methods of specifying a filename and extension. You can use the built-in default filenames and extensions or you can specify any filename and extension that conforms to your operating system requirements.

Default filenames can be used in two ways:

1. When you enter a source filename without an extension, SuperData Interchange automatically appends the appropriate extension — .CAL, .CSV, .VC or .SDI.
2. A **SDI** at the destination filename automatically uses the source filename for the destination filename with the correct output extension.

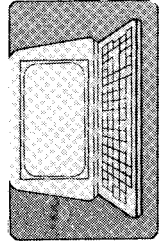
You may not want to use these defaults. To override the defaults, specify an exact file extension or an exact destination filename.

The default filename extensions are *only a convenience*. They contain no significance other than to help you identify the contents of the file. You are free to alter both the source filename and the destination filename.

**Note:** When you convert a .CAL file to another format the formulas are lost. Converting that file back to a .CAL file produces a .CAL file that contains only values, not formulas. To prevent destroying your original .CAL file rename the file and do not accept the default filename. This will help to prevent accidentally overwriting the file. After typing in the new filename you can still press **SDI** to accept the default file extension.

### Converting Files

To use SuperData Interchange, select the desired conversion type from the main menu. Specify the source and destination files. SuperData Interchange creates a new file containing the conversion and leaves the source file intact. The following examples demonstrate how to use SuperData Interchange.



## USING YOUR SUPERDATA INTERCHANGE PROGRAM

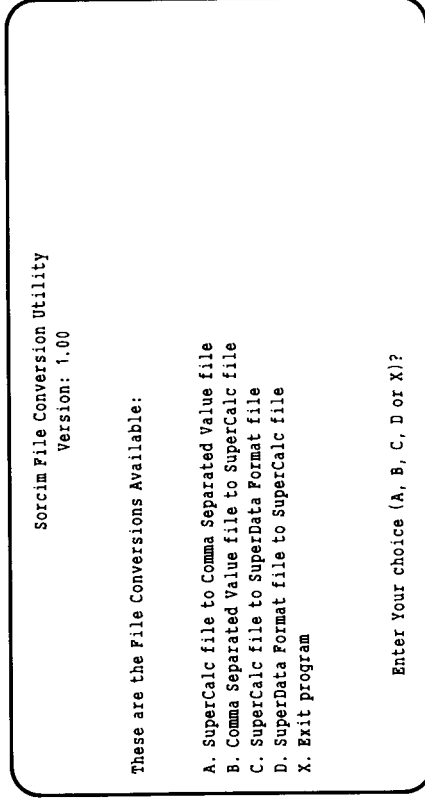
### Selecting the Type of Conversion

These examples demonstrate SuperData Interchange's quick and easy method of converting files. But don't let its simplicity fool you — SuperData Interchange is a powerful conversion tool. Before you convert actual data there are several things to consider.

### Selecting the Type of Conversion

You first must decide what kind of data file your program uses. Consult the documentation that comes with the program or talk to your dealer.

To use SuperData Interchange, enter **SDI** from your operating system prompt. The SuperData Interchange Main Menu displays on your monitor.

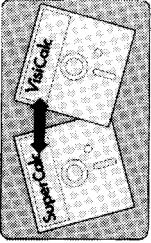


Screen 2-2: Main Menu

If your program reads files as *Comma Separated Values* you can use menu selections A and/or B. If your program uses .DIF format, the file might be eligible for selections C and/or D. Use selection E to convert a VisiCalc file to a SuperCalc file.

## USING YOUR SUPERDATA INTERCHANGE PROGRAM

### Converting Files



Now that the file BUDGET.CSV exists, consider the conversion process in reverse.

1. Press **B** to select conversion from Comma Separated Value to SuperCalc format (.CSV → .CAL).
2. Enter the Source filename.  
Enter Source filename: **BUDGET**   
Opening file: BUDGET.CSV
3. SuperData Interchange appends the .CSV extension.  
Enter the Destination filename.

Enter Destination filename: **BUDGETV**   
Opening file: BUDGETV.CAL

You have overridden the default filename BUDGET with BUDGETV and SuperData Interchange appends the default .CAL extension. The V in the filename serves as a reminder that BUDGETV.CAL contains values only.

When the File Exists--Safety Check

SuperData Interchange includes a safety check to help avoid writing over an existing file. Suppose you had entered a  requesting the default for the destination file in Step 3. This is the equivalent of entering BUDGET.CAL, your original SuperCalc data file. SuperData Interchange warns you with this message:

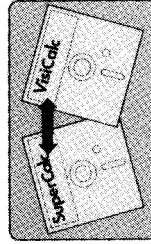
File Already Exists!  
Okay to Overwrite the file (y/n)?

Any key but "Y" or "N" will be ignored. The "N" key will abandon the conversion process and redisplay the menu.

If you press "Y" the existing file is deleted and the new file created with the name of the old file.

## USING YOUR SUPERDATA INTERCHANGE PROGRAM

### Converting Files



### SuperCalc file to Comma Separated Value file

(.CAL → .CSV)

This example uses all SuperData Interchange defaults. Follow along at your terminal and key in only the **Bold** characters. You may type either upper or lower case characters. SuperData Interchange automatically converts to upper case.

1. Select Menu Item **A** to convert from SuperCalc format to Comma Separated Value format (.CAL → .CSV).
2. Enter the source filename.

Enter Source filename: **BUDGET**   
Opening file: BUDGET.CAL

Enter only the filename. SuperData Interchange appends the default .CAL extension.

3. Enter the Destination filename.

Enter Destination filename:   
Opening File: BUDGET.CSV

SuperData Interchange uses the filename BUDGET and appends the .CSV extension.

SuperData Interchange begins the conversion with the screen message:

Converting BUDGET.CAL to BUDGET.CSV

Your disk should be active for a time, and then the screen displays the message:

Conversion complete

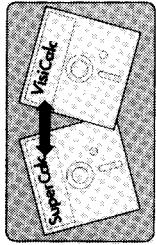
The SuperData Interchange Main Menu then redisplay on the screen.

### Comma Separated Value file to SuperCalc file

(.CSV → .CAL)

## USING YOUR SUPERDATA INTERCHANGE PROGRAM

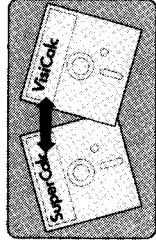
### Converting Files



5. A text string that exceeds 116 characters is truncated during conversion. If the original formula or the formula after conversion exceeds 116 characters, ERROR is output to the destination file. A warning message displays on your monitor.
6. Boolean formulas that evaluate TRUE or FALSE in VisiCalc result in 1 or 0 in SuperCalc.
7. The formula prefix "+" in VisiCalc is removed when converted to SuperCalc. For example the VisiCalc formula  $+A1+B1$  is converted to the SuperCalc formula  $A1+B1$ .
8. VisiCalc displays 21 rows per screen while SuperCalc displays 20 rows per screen. If a worksheet was saved with the cursor at the 21st row of a screen in VisiCalc, then converted to a SuperCalc worksheet, the cursor stays in the same cell with the screen scrolling up one row, i.e., the first row scrolls off the top of the screen. Whenever there is a conflict between retaining original screen and original cursor position, the original cursor position prevails.
9. Window split with title lock is handled differently by SuperCalc and VisiCalc. VisiCalc always carries the title lock in the second window. SuperCalc does not carry the title lock in the second windows as if the user also set that title lock in the second window.
10. Repeated text in VisiCalc repeats across the column width only. When converted to SuperCalc, VisiCalc repeated text expands across the row until column BK or a non-empty cell, whichever comes first.

## USING YOUR SUPERDATA INTERCHANGE PROGRAM

### Converting Files



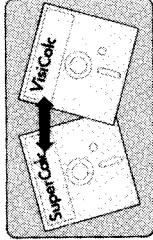
### VisiCalc™ files

SuperData Interchange converts VisiCalc data files to SuperCalc data files. All formulas and values are converted with the following exceptions.

1. The @CHOOSE( switch, value1, value2, . . . ) function in VisiCalc is interpreted in SuperCalc as  $(INT( switch ) = 1) * value1 + (INT( switch ) = 2) * value2 + \dots$ . If the converted expression exceeds 116 characters, a warning message displays on your monitor and ERROR is output to the .CAL file. If the switch has a negative value or 0 or greater than the number of values provided in the CHOOSE function, the resulting NA in VisiCalc is converted to 0 in SuperCalc. No warning message displays on your monitor.
2. Both the @AND and @OR functions in VisiCalc allow any number of arguments while the same functions in SuperCalc take only two arguments. In order to retain the accuracy of these functions, nested AND or OR functions are generated during conversion. If the converted formula exceeds 116 characters in length, ERROR is output to the destination file. A warning message displays on your monitor.
3. For the AND, OR, and NOT function, VisiCalc takes logic expressions, i.e., 1 or 0, as arguments. SuperCalc takes logic expressions plus zero or non-zero situation as arguments. Therefore, an expression such as  $AND(A1,B1)$  is evaluated as ERROR in VisiCalc, but when converted to SuperCalc is evaluated as 1 or 0.
4. The maximum number of nested parentheses in expressions which can be evaluated by SuperCalc is 7 while the corresponding number in VisiCalc is 9. SuperData Interchange converts the expression from VisiCalc to SuperCalc as long as the converted expression does not exceed 116 characters. If the expression is not a valid SuperCalc expression, SuperCalc will evaluate it to ERROR.

## USING YOUR SUPERDATA INTERCHANGE PROGRAM

### Summary of SuperData Interchange Conversions

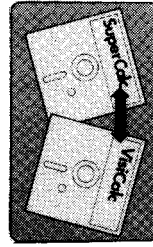


#### Special Considerations:

1. If there are warning messages during conversion, SuperData Interchange pauses after the conversion is completed and displays *Press Return to Continue*. This pause allows you to read warning messages before the screen scrolls back to the main menu.
2. A date function, e.g., DATE(mm,dd,yy) in a .CAL file converts to an integer value in a .CSV or .SDI file. This value is a modified Julian date, as if JDATE(date value) had been used on the date.
3. Textual Values are output as text. When converting from .SDI to .CAL, textual values or date values will only be recognized by SuperCalc<sup>2</sup> or SuperCalc<sup>3</sup> if a formula is provided with the -4 type. Use your word processor such as SuperWriter to insert the formula.

## USING YOUR SUPERDATA INTERCHANGE PROGRAM

### Summary of SuperData Interchange Conversions



## Summary of SuperData Interchange Conversions

Use the other SuperData Interchange Main Menu options in a similar manner. A summary of the options follows:

Option A converts a SuperCalc file to a Comma Separated Value file. Only values are converted. Formulas and display format characteristics are not converted.

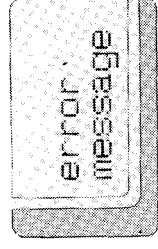
Option B converts a Comma Separated Value file to a SuperCalc file. Since a .CSV file contains only values, no formulas appear in the .CAL file. When you load the file into SuperCalc, the default display format is in effect.

Option C converts a SuperCalc file to an .SDI file. Only values are converted. Display format and formulas are lost.

Option D converts an .SDI file to a SuperCalc file. Formulas, display format and values are converted.

**Note:** Options C and D are not strictly opposite operations of each other. Although SuperData Interchange does not convert formulas and display format characteristics using Option C, Option D does recognize and convert both formulas and display format from an .SDI file containing them. How they get into the .SDI file does not matter to SuperData Interchange. For example, you could use another program to produce the data file, or you could use a text editor such as SuperWriter on an .SDI file to put in the formulas and display characteristics. Appendix B contains a technical description of the .SDI file structure.

Option E converts a VisiCalc file to a SuperCalc file. There is no comparable option that converts a SuperCalc data file into a VisiCalc data file.



---

## **A. Warning and Error Messages**

### **Error Messages**

#### **Column out of range.**

This can happen when converting to .CAL files. The number of columns in the source file is greater than 63.

#### **Row out of range.**

This can happen when converting to .CAL files. The number of rows in the source file is greater than 254.

#### **No COL:ROW string in Origin Specifier.**

This can happen when converting from .SDI files to .CAL files. Correct the error.

#### **Ill-formed COL:ROW string in Origin Specifier.**

Correct the source file.

#### **No ROW string in Origin Specifier.**

Correct the source file.

#### **Missing arg. in Type Ind/Numeric Value line.**

This can happen when converting from .SDI to .CAL files. A data item does not contain a valid type indicator.

#### **Improper or no DATA header in file.**

The .SDI file does not have a valid "DATA" header item in the header.

#### **Multiple Origin Specifiers in a tuple.**

The .SDI file has more than one origin data item in one tuple (row).

#### **Invalid Type Ind./Data Definition.**

The .SDI file has an invalid type indicator or data definition.

## WARNING AND ERROR MESSAGES

### Warnings Issued by SuperData Interchange

#### String too long, truncation occurs.

This can happen when converting to .CAL file. It means the original file has string(s) longer than 115 characters.

#### Formula too long, will output ERROR.

This can happen when converting to .CAL file. It means the original file has formula(s) longer than 116 characters.

#### Column out of range in Header.

This can happen when converting from .SDI file to .CAL file. It means that column or row specifier is out of range in SDI header items. Column range is 1..63. The erroneous header item will be ignored.

#### Row out of range in Header.

This can happen when converting from .SDI file to .CAL file. It means that column or row specifier is out of range in SDI header items. Row range is 1..254. The erroneous header item will be ignored.

#### Null data cannot have formula.

This can happen when converting from .SDI to .CAL file. If a data item in the .SDI file is a null data item followed by a formula data item, the formula is illegal and will be ignored.

#### Illegal format letter.

This can happen when converting from an .SDI to a .CAL file. The .SDI file data item has invalid format letter(s) other than those defined by SuperCalc. The letter(s) will be ignored.

#### Bad integer number.

This can happen when converting to .CAL file. It means the file has an invalid integer, i.e., integers which have characters other than 0..9, one sign character or a blank.

#### @AND cannot convert successfully.

This can happen when converting from .VC to .CAL files. If the converted @AND formula exceeds 116 characters, an ERROR will be output.



error  
message

## WARNING AND ERROR MESSAGES

### Warnings Issued by SuperData Interchange

#### Fmt/Formula/Rpt Count without prior data.

An .SDI file contains a -3, -4, -5 data type indicator without a preceding numeric data or text data.

#### Bad file name.

This can happen if you enter a filename containing a reserved character as part of the destination file name, i.e., BUDGET.\* or specify an invalid drive reference, i.e., v:BUDGET.

#### Source file not found.

Correct the error.

#### File is empty.

Self-explanatory.

#### File is not a .CAL file.

Self-explanatory.

#### File is not VisiCalc file.

Self-explanatory.

## Warnings Issued by SuperData Interchange

These warnings are issued by the SuperData Interchange Program to inform you when an unusual action has taken place or when data are found that have not been correctly formed. In the latter case, no action is usually taken by the SuperData Interchange program. In either case, the converted file may be inaccurate.

#### Closing quote found, truncating string.

This can happen when converting from .CSV to .CAL files. It means that .SDI has found a closing quote for a quoted string, however, there is something left out after the quote and before the field delimiter ','. Those left-out characters will be truncated.

## ADVANCED TOPICS

### Special Data Formats

## B. Advanced Topics

### Special Data Formats

In the early days of microcomputers, program developers wrote programs to solve specific problems. The data produced and processed by these programs were usually unique to the program. The data had to be printed out, then rekeyed to be useful to another program.

Many programs produce the same kinds of data, that is, rows and columns of headings, numbers, blanks, etc. However, the file structure differs depending on the program.

Developers were interested in a storage format that permitted reconstruction of the data into its original appearance, no matter what the source of the information.

To help solve this problem Software Arts, Inc. defined the "Data Interchange Format" (DIF™). The SuperData Interchange format is an *extended version or superset* of the DIF format file.

**Note:** The definition of that solution is found in Software Arts Technical Note: SATN-18 "PROGRAMMERS GUIDE TO DIF."

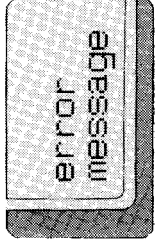
SuperData Interchange permits transferring data to and from SuperCalc without retyping.

### Conversion Considerations

The next section explores data formats in detail.

Three terms are important to SuperCalc data files.

1. Values — The actual numbers or strings of characters displayed from within SuperCalc. In SuperCalc a value may be a numeric constant or the result of calculating a formula.



## WARNING AND ERROR MESSAGES

### Warnings Issued by SuperData Interchange

#### @OR cannot convert successfully.

This can happen when converting from .VC to .CAL files. If the converted @OR formula exceeds 116 characters an ERROR will be output.

#### @CHOOSE cannot convert successfully.

This can happen when converting from .VC to .CAL files. If the converted @CHOOSE formula exceeds 116 characters, an ERROR will be output.

P.S.: When warning messages occur during .VC to .CAL conversion, cell reference will always precede the messages.



## ADVANCED TOPICS

### Comma Separated Value format

Numeric values must be in SuperCalc readable form: Integers, Real numbers and Exponential numbers.

Examples of numbers:

123	123.345	-123	-123.345
12E4	123E-12	-12E5	

String values consists of characters enclosed in double quotes (" "). A string may contain blanks, commas and special characters like /, \*, etc.

Examples of strings:

"This is a string."  
"This too!"  
"123,234,45 is a string also"

#### Note:

Many programs that use .CSV data files do not require quotes around a string field unless there is a comma as part of the string. When SuperData Interchange creates a .CSV file, it encloses all strings in quotes, whether or not the string contains a comma. If there is a quote in the string, it is represented by two consecutive quotes, i.e. "" Quotes around strings that do not contain commas are not required to convert a .CSV file to a .CAL file properly.

### Summary of .CSV Format

1. A line or row consists of data items (string and/or numeric) separated by commas.
2. Each line is terminated by a carriage return/line feed pair.
3. A **CTRL-Z** (hex 1A, decimal 26) terminates the file.
4. A string is surrounded by a double quote mark ("string").
5. There are no other control characters in the file.

Examples of .CSV files:

This file contains only numbers.

```
123.45,456.77,4322.56,837.233,9198.0,3444.94  
323.45,8989.84,3939.93,39.8,3494.343,343.99
```

## ADVANCED TOPICS

### Detailed File Formats

2. Display format — The instructions SuperCalc executes when formatting values in individual cells, rows, columns or global conditions.
3. Formulas — Expressions assigned to cell locations specifying calculations or comparisons which are resolved by SuperCalc into values. The formulas may reference constants, built-in functions, or the contents of other cells.

### Detailed File Formats

This section gives the advanced SuperData Interchange user an understanding of what the files contain and how to create them from "scratch".

#### Creating an .SDI or .CSV File

An .SDI or .CSV data file may be created in many ways. One way is to use a program that reads and writes the .SDI or .CSV file format such as a BASIC program.

Another way is to use a word processor such as SuperWriter®. Be careful that the file contains alpha-numeric characters only. Yet another method is to generate the information on a mainframe computer and download this information to your system. This data can either be written on the mainframe in the format needed, or manipulated by an editor or another program.

#### Comma Separated Value format

A Comma Separated Value data file consists of rows of data, each terminated by a carriage return and a line feed character. The data items in each row are separated by commas, with string data enclosed in double quotes.

A .CSV file contains no other control characters except the End-Of-File file character **CTRL-Z** (represented as 1A in hex or 26 in decimal).

## ADVANCED TOPICS

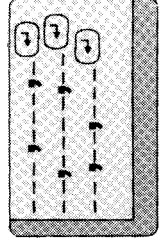
### SuperData Interchange format

Between the TABLE and DATA fields the following optional fields are also allowed: COL-FORMAT, ROW-FORMAT and GDISP-FORMAT. These optional fields define the display formatting characteristics for Global, Row and Column formats. The Entry format is defined in the data section for each cell. These three fields are not part of the DIF format, only the .SDI format.

#### Formatting Strings

Consider the format strings used in the HEADER section. This unquoted string may contain one or more of the following format options with no spaces between them.

- L Indicates that numeric values are to be left justified when displayed in a cell, column or row.
- R Indicates that numeric values are to be right justified when displayed in a cell, column or row.
- TL Indicates that text values are to be left justified when displayed in a cell, column or row.
- TR Indicates that text values are to be right justified when displayed in a cell, column or row.
- \$ Indicates that numeric values are to be displayed with the decimal point fixed at 2 places with trailing zeros to fill up the 2 places to the right of the decimal place if needed.
- \* Indicates that numeric values are to be displayed as asterisks (\*). One asterisk displays for each integer count in the cell; i.e., 1 displays 1-\*, 10 displays 10-\*. If the cell contents equal 0, then the cell is blank.
- I Indicates that numeric value of the cell is displayed as an integer with no decimal point and no places to the right of the decimal place.
- G Indicates that a numeric value displays as *general* format with the *best-fit* possible.



## ADVANCED TOPICS

### SuperData Interchange format

This file contains numbers and strings.

123,"John Smith", "ground beef", 12.45  
124,"Betty Jones", "top sirloin", 34.54  
125,"Jane Johnson", "chicken", 4.67

**Note:** The  $\square$  means the carriage return and line feed characters.

### SuperData Interchange format

The SuperData Interchange format (.SDI) is simple in concept, more complex in implementation. The file may contain information about the general appearance of the spreadsheet as well as the data in the spreadsheet.

The SuperData Interchange format (.SDI) is a superset of the DIF structure used with Visi-series software products. .SDI incorporates the major components of a DIF file and then has added other DATA and HEADER items to enable a file to carry more information. The original DIF specification contained only numeric and string data. The .SDI format may also contain information on the formulas and formatting characters of the SuperCalc spreadsheet.

A DIF file produced by VisiCalc can be used with SuperCalc after conversion with SuperData Interchange.

### SuperData Interchange .SDI File Layout

There are two major components of a .SDI data file, the HEADER section and the DATA section.

#### HEADER Section

The HEADER consists of two required and three optional fields. The required fields are TABLE and DATA. The TABLE field must be the first field in the file and the DATA field must be the last field of the HEADER section.

## ADVANCED TOPICS

### SuperData Interchange format

ROW-FORMAT — Specifies the formatting of a particular row. This is the same as COL-FORMAT but for rows. The Row number must be in the range 1-254 rows. As many ROW-FORMAT fields as necessary may be included in the header.

<i>FORMAT</i>	<i>SAMPLE ENTRY</i>
ROW-FORMAT	ROW-FORMAT
row #,0	14,0 (row 14)
format string	TL\$ (textleft,\$ formatting)

DATA — This item must be the last field in the header. It signifies the end of the header section and the beginning of the data section. The DATA field looks like this:

<i>FORMAT</i>	<i>SAMPLE ENTRY</i>
DATA	DATA
0,0	0,0
" "	" "

Below are some valid .SDI headers.

#### Minimal Header:

This header contains only the TABLE section and the DATA section:

TABLE
0,1
" "
DATA
0,0
" "

## ADVANCED TOPICS

### SuperData Interchange format

D Indicates that formatting for the cell, column or row should be removed. At the global level, SuperCalc reverts to the default format.

E Indicates that numeric values display in an exponential (n 10x) format. For example, 1.23e2 is equivalent to 123.

Format String Examples:

\$TL	TR*	D
GTLR	L\$	

#### Header Items

TABLE — The first three lines of an .SDI data file indicate the beginning of the file and must appear exactly as shown here:

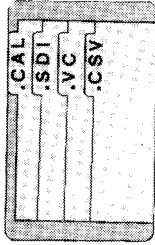
TABLE
0,1
" "

GDISP-FORMAT — Specifies the GLOBAL display format settings of the SuperCalc spreadsheet. Only one GDISP-FORMAT definition is allowed for a data file.

<i>FORMAT</i>	<i>SAMPLE ENTRY</i>
GDISP-FORMAT	GDISP-FORMAT
width,0	9,0 (global column
format string	\$TL width of 9, textleft, \$
	format)

COL-FORMAT — Specifies the formatting of a particular column. The Column number must be in the range 1-63 columns. As many COL-FORMAT fields as necessary may be included in the header.

<i>FORMAT</i>	<i>SAMPLE ENTRY</i>
COL-FORMAT	COL-FORMAT
col#,width	3,12 (column C is 12
format string	characters wide and
	integer format)



## ADVANCED TOPICS

### Types of Data Fields

The second line contains a string variable.

field-3                      string value

This could also be shown like this:

type indicator, numeric value  
string value

### Types of Data Fields

The type indicator must be an integer from 0 to 1 or -1 to -5. Each indicator is identified in the following table and described in detail below.

0	Numeric Data
1	Text String
-1	Data Definition
-2	Origin Specifier
-3	Entry level display formatting
-4	Formula
-5	Repeat Count

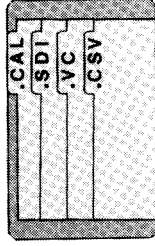
### Numeric Data

A zero (0) in field #1 means that the cell contains numeric data. Numeric data is derived from the value that a SuperCalc Formula cell contained. The numeric value is stored in field #2. Field #3 contains the value indicator.

Example:            0,123.45  
                          V

The value indicator can be one of four values. When the value indicator is "V", the number is *valid*, and appears in field #2 as a decimal number. When the value indicator is anything else, the numeric data field is zero. Possible types of data and the contents of the numeric field is presented in the following table:

V                      Indicates that the numeric data field contains a *valid* decimal number.



## ADVANCED TOPICS

### SuperData Interchange format

### Optional Field Header:

This header contains the required TABLE and DATA sections as well as two COL-FORMAT and one GDISP-FORMAT definition.

```

TABLE
0,1
" ,"
Begin Header Section

COL-FORMAT
1,40
" ,"
Column width of A is 40
No special display formatting

COL-FORMAT
2,15
$
Column width of B is 15
Money format

GDISP-FORMAT
9,0
GTL
Global column width is 9
General format with Text Left

DATA
0,0
" ,"
Begin Data Section

```

### DATA Section

The format of data items differs from that of header items. SuperData Interchange organizes data by rows. Within the rows, values are arranged according to the order of the columns.

Each data entry consists of three fields on two lines. For example:

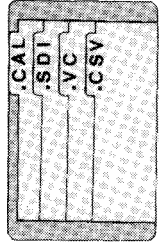
```
Line 1            field-1, field-2
Line 2            field-3
```

The first line contains two numeric values:

```
field-1            a type indicator
field-2            a numeric value
```

## ADVANCED TOPICS

### Types of Data Fields



Example of a text cell:

1,0  
Check Register

Example of a repeating text cell:

1,1  
=

#### Data Definition

A -1 in field #1 indicates that the data item contains data that defines the data file structure. There are two types of data definitions and they appear in field #3. Field #2 is not used and always contains zero. The two types of data definitions are:

**BOT** Marks the beginning of a SuperCalc Row. Note that this is functionally equivalent to a carriage return in Comma Separated Values format in that it separates rows (or records).

Example: -1,0  
BOT

**EOD** Marks the end of data. No further data is interpreted past the EOD by SuperData Interchange.

Example: -1,0  
EOD

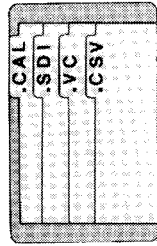
#### Origin Specifier

A -2 in field #1 indicates an origin specifier. Field #2 is always zero. Field #3 contains the address of a cell.

The origin specifier indicates the cell where the next data item starts. This action is equivalent to a *skip to* command to avoid a long series of NULL entries. SuperData Interchange does not create this type of entry when converting from .CAL to .SDI formats, but does interpret it correctly when converting from .SDI to .CAL format.

## ADVANCED TOPICS

### Types of Data Fields



NA

The value for the cell is not available. The numeric data field is zero.

NULL

The value of the cell is NULL or unoccupied. The numeric data field is zero.

ERROR

The value is in Error, perhaps due to an invalid calculation such as dividing by zero.

The numeric data field can contain decimal numbers with signs (+ or -). One or more blanks may precede or follow the number value. If the data value contains an exponent of a power of ten, the value is followed by the letter "e" and the signed or unsigned exponent.

The numeric field is the only place that the .SDI file format allows a non-integer value.

#### Text string

A one (1) in field #1 indicates that the data item is either a *Text* string or a *Repeating Text* string. The contents of field #2 indicated the type of text. The text string appears in field #3.

0

When field #2 is 0, the contents of field #3 is *Text*. The *Text* may be optionally enclosed in double quotes.

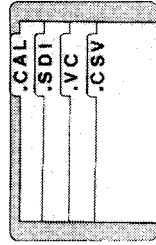
1

When field #2 is 1, the contents of field #3 is *repeating text*.

If the text contains blanks only (not blanks between words), then the string must be enclosed in quotation marks. A text value that is empty contains only quotation marks: i.e. " " .

## ADVANCED TOPICS

### Types of Data Fields



Example:

-4,0  
A1+B1\*4

### Repeat Count

The repeat count is specified by -5 in field #1. The *previous* data item is to be repeated into the next sequential cells for the number of times specified by the number in field #2. Field #3 must contain R only. If there is no previous data item for that cell, an error occurs.

This is useful especially for padding a section of a spreadsheet with either NULL data or zeros. An example of filling a line of the spreadsheet with 10 zeros is:

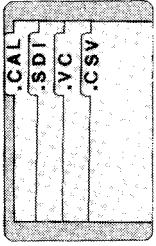
-1,0  
BOT  
0,0  
V  
-5,9  
R

Example of a simple but complete .SDI File:

TABLE  
0,1  
" "  
DATA  
0,0  
" "  
-1,0  
BOT  
0,123.45  
V  
0,25.62  
V  
0,355.42  
V  
-1,0  
EOD

## ADVANCED TOPICS

### Types of Data Fields



The cell address in field #3 contains two numbers separated by a colon. The first number is the column location (1-63). Although the columns are specified by an alphabetic notation in SuperCalc, the letters must be converted to their numeric equivalents here. The second number is the row number as used in SuperCalc (1-254).

The following examples compare SuperData Interchange notation with SuperCalc notation.

SuperCalc	SuperData Interchange
C20	3:20
AB74	28:74
BK254	63:254

### Entry level display formatting.

A -3 in field #1 indicates Entry level display formatting. Field #3 contains the formatting specification for the previous cell. Field #2 is always zero (0).

Note: Global, Column and Row formats are specified in the HEADER section.

The display formatting codes are the same as for the Global Display item in the header section: i.e. I, \$, TL, etc. If there is no previous data item, an error occurs.

### Formula

A -4 in field #1 specifies a formula. The formula is in field #3 and must be a valid SuperCalc formula. Field #2 is always zero. If there is no previous data item for that cell, an error occurs.

SuperData Interchange does not convert formulas from .CAL to .SDI format. However, you can create or edit formulas in an .SDI file with a text editor. SuperData Interchange will interpret them properly in a .SDI to .CAL conversion.

## ADVANCED TOPICS

### Types of Data Fields

```

-1,0
BOT
1,1
=
0,0
NULL
0,0
NULL
-1,0
BOT
1,0
STARTING BALANCE
0,0
NULL
0,250
V
-1,0
BOT
1,0
PAYDAY
0,550
V
0,-100
V
0,75.0
V
-1,0
BOT
1,1
=
0,0
NULL
0,0
NULL
-1,0
BOT
1,0
FINAL BALANCE
0,0
NULL
0,75.0
V
-1,0
EOD
    
```

## ADVANCED TOPICS

### Types of Data Fields

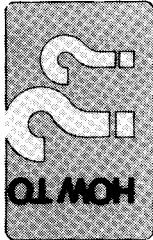
This will create a file of 3 data items located on a single row.

The following page shows the file BUDGET.SDI. Notice that the values are converted and that the formulas and display format characteristics are not included.

This example is Budget: (BUDGET.SDI)

```

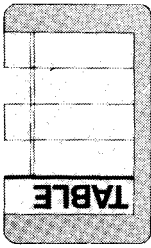
TABLE
0,1
" "
DATA
0,0
" "
-1,0
BOT
1,0
SAMPLE BUDGET
0,0
NULL
0,0
NULL
-1,0
BOT
0,0
NULL
0,0
NULL
0,0
NULL
-1,0
BOT
0,0
NULL
0,0
NULL
0,0
NULL
-1,0
BOT
1,0
DESCRIPTION
1,0
AMOUNT
1,0
BALANCE
0,800.0
V
-1,0
BOT
1,0
RENT
0,-350
V
0,450.0
V
-1,0
BOT
1,0
UTILITIES
0,-75
V
0,375.0
V
-1,0
BOT
1,0
FOOD
0,-200
V
0,175.0
V
-1,0
BOT
1,0
AUTO
    
```



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ASCII TABLE

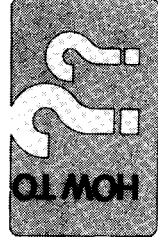
ASCII Table

CONTROL		NUMBERS SYMBOLS		UPPER CASE		LOWER CASE	
00	CTRL @	0	SP	@	P	~	P
01	CTRL A	1	!	A	Q	a	q
02	CTRL B	2	"	B	R	b	r
03	CTRL C	3	#	C	S	c	s
04	CTRL D	4	\$	D	T	d	t
05	CTRL E	5	%	E	U	e	u
06	CTRL F	6	&	F	V	f	v
07	CTRL G	7	'	G	W	g	w
08	CTRL H	8	(	H	X	h	x
09	CTRL I	9	)	I	Y	i	y
0A	CTRL J	:	*	J	Z	j	z
0B	CTRL K	;	+	K	[	k	{
0C	CTRL L	<	,	L	\	l	
0D	CTRL M	=	-	M	]	m	}
0E	CTRL N	>	.	N	^	n	~
0F	CTRL O	?	/	O	_	o	DEL (RUBOUT)

KEY

hex	ASCII Name
CR	CTRL M
OD	decimal





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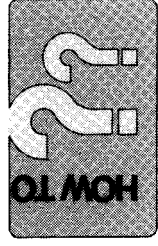
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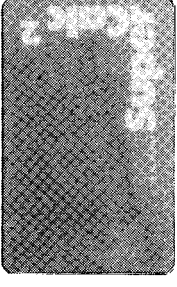
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# **10 Minutes to Supercalc 2**

---

*A Beginner's guide to SuperCalc2*

**Create your first  
spreadsheet  
in 10 minutes....**



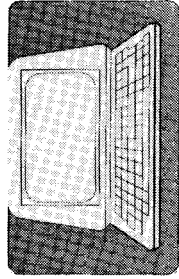
---

# Supercalc<sup>®</sup>2

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---



## GETTING STARTED

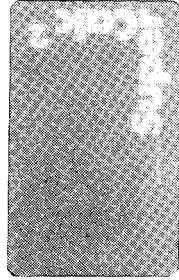
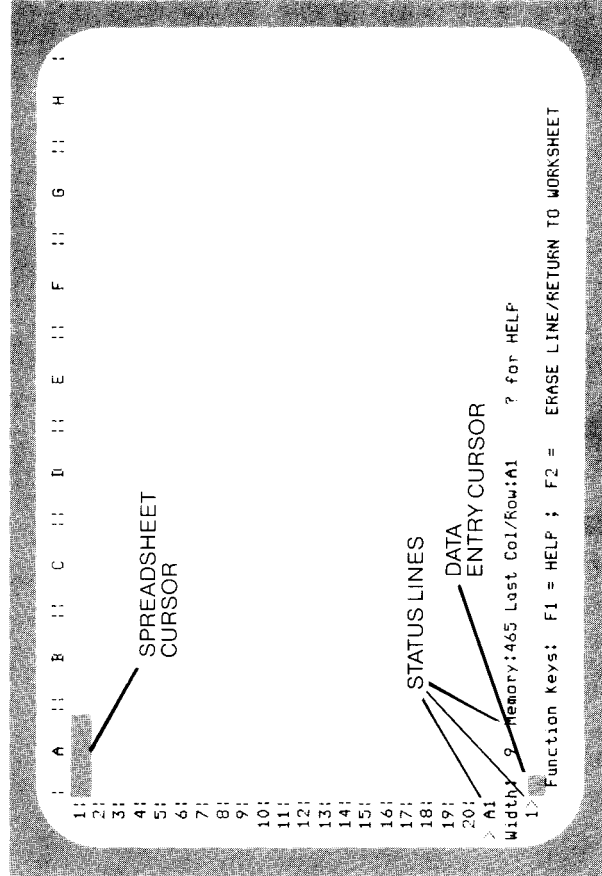
1. Place your SuperCalc<sup>2</sup> disk in the A drive of your computer.
2. Type **SC2** and press the **↵** (or Return or Enter) key to start the SuperCalc<sup>2</sup> program.

NOTE: In this booklet, the symbol **↵** means "Press the key labeled Return or Enter or **↵**."

3. You will see an initial screen with the SuperCalc<sup>2</sup> version number, and a copyright notice.

OK? Now press **↵**.

Your screen shows the SuperCalc<sup>2</sup> equivalent of a blank page, a clean slate to start scribbling on. But before you start typing, let's see what we've got.



## INTRODUCTION

SuperCalc<sup>2</sup>—the easy-to-use super-powered spreadsheet.

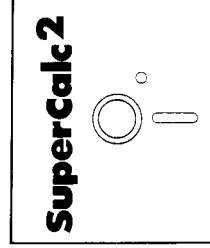
These few pages will get you started in the SuperCalc<sup>2</sup> program. The only computer knowledge we assume you have is how to turn on your computer and use its disk drives.

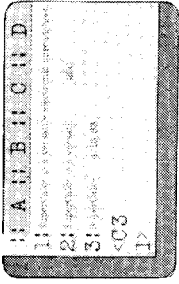
You will find SuperCalc<sup>2</sup> is so easy to learn that in just 10 minutes you will be able to set up a spreadsheet and see how you can make better, faster decisions.

Of course, there is a lot more to the program than we can cover here. In fact, the SuperCalc<sup>2</sup> program and the spreadsheet concept can be used for an almost unlimited range of financial, engineering, and scientific applications.

In this booklet, we will show you how to build a trial spreadsheet and ask "What if I change this number or revise that approximation?" Then you can save your work and even print out a copy of the 10 Minute SuperCalc<sup>2</sup> Solution.

Ready? Start up your computer as described in your owner's manual, turn on your timer, and try it for yourself.





Now, let's try it without the quote. Type.

**Date** ←

You see a formula error message. Since there is no quote before the first character, SuperCalc<sup>2</sup> determines that you are trying to enter a formula, rather than text.

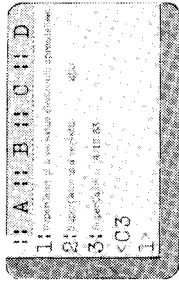
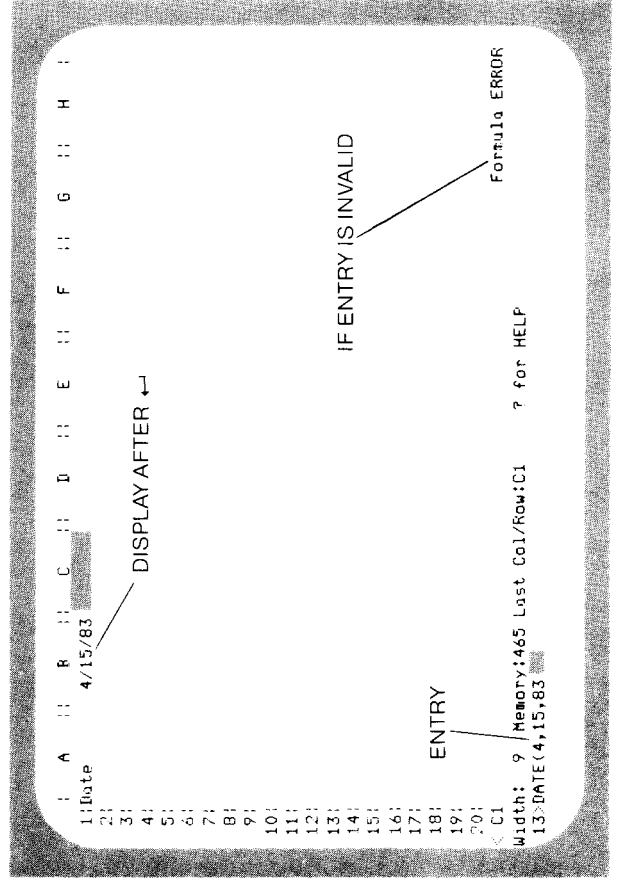
SuperCalc<sup>2</sup> does include a date function, though. Continue to type (after **Date**):

( the number of the current month (**1-12**)

, the day of the month (**1-31**)

, the year

) ←



## CELLS AND THE CURSOR

The SuperCalc<sup>2</sup> spreadsheet is a grid or matrix of cells. These cells are arranged in rows (numbered 1 through 254) and columns (lettered A through BK).

A CELL is a slot for one piece of information, such as a word or label, a number, or the result of a mathematical calculation or formula.

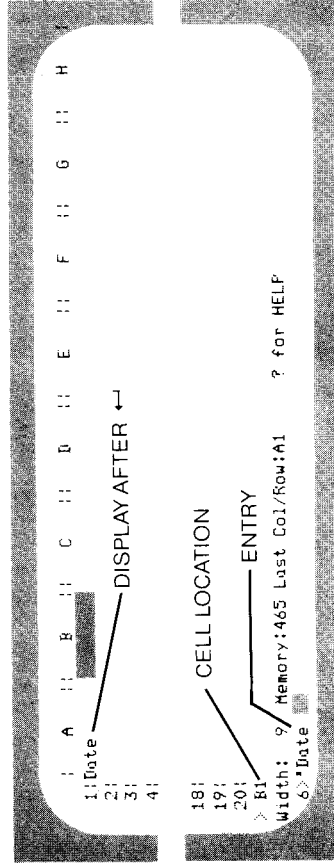
## CREATING A SPREADSHEET

Try typing some characters. Type:

**"Date**

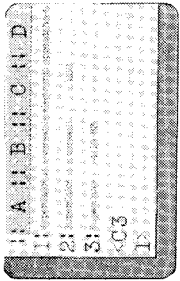
and press ←. If you make a typing mistake, before pressing ← just backspace (with the Backspace or left arrow key) and retype.

Be sure to type the quote before the first letter of Date. The quote tells the program that the following characters are text or words.



The word **Date** shows in the upper left cell, without the quotation mark.

If you forgot the quote, you got a formula error message. You could have backspaced until the beginning of the line and re-typed the entry.

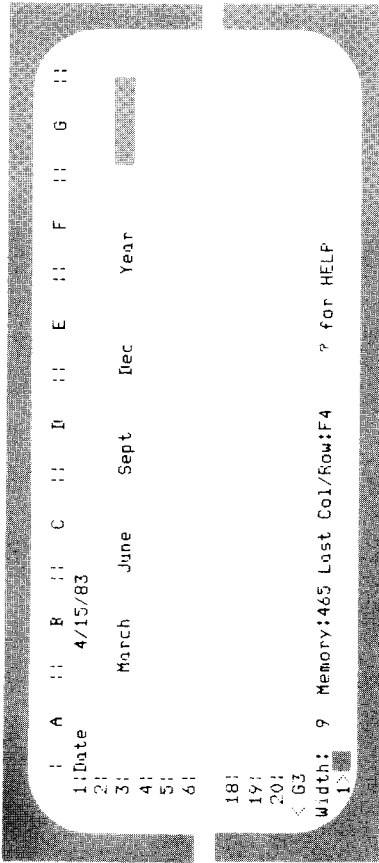


As you might expect, we are going to set up a simple spreadsheet—the Ten-Minute Quarterly Income Statement.

Move the Spreadsheet Cursor to the Cell C3, to the right of March. Type:

**“June**

Press **↵** and then type in the other period names: **“Sept ↵** in D3, **“Dec ↵** in E3, and **“Year ↵** in F3. The spreadsheet will now look like this.



Getting the hang of it? Try something new. Without the **↵**, type:

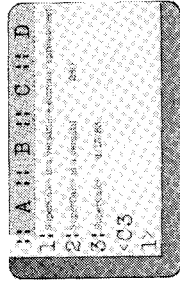
**=A4**

Here's what the entry line looks like.

**5 > => A4**

Press **↵**.

The equal symbol means, “Move the Spreadsheet Cursor directly to the cell specified.”



## WORDS AND LABELS

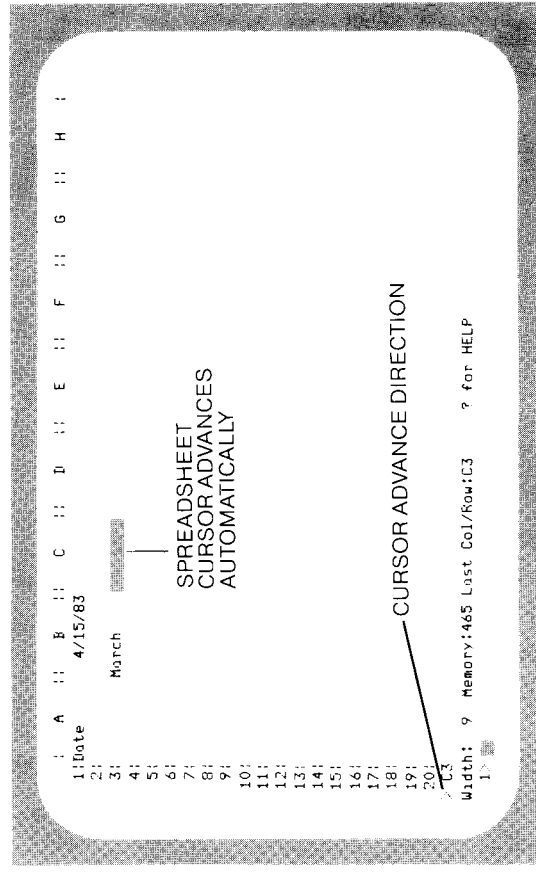
How do you enter something in a different position in the spreadsheet? Press one of the Arrow keys. (If you have already typed anything on the Entry line at the bottom of the screen, you will have to press the Ctrl and Z keys simultaneously to “Zap” or clear the entry.)\*

Move the Spreadsheet Cursor down to the Cell labeled B3.

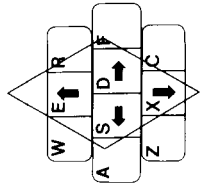
Now make another entry.

**“March ↵**

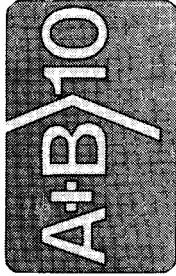
Be sure to type in the double quote.



\* If your computer has a Num Lock key, you may have to press it before the arrows will work. Some keyboards don't have arrow keys. If yours doesn't, you can always move the cursor like this:



Press the key marked Ctrl while also pressing the key marked



## NUMBERS AND FORMULAS

Go to A5 (type **=A5** ←), and enter **"Sales** ←. Now let's enter some sales numbers. In B5, type:

**3000** ←

Though this is a dollar amount, you can (and must) enter it as whole dollars without the \$ or commas. But be patient. We'll put those in later.

Fill in C5 with 5000 (type **5000** ←), D5 with **4500**, and E5 with **6000**.

Now in F5 we want the totals for the row. In F5, type:

**SUM(B5:E5)** ←

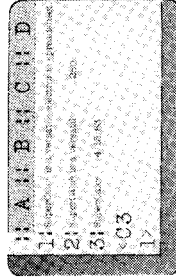
SUM is a special SuperCalc<sup>2</sup> function that adds up all cells in the specified range. The way you specify a range of cells in SuperCalc<sup>2</sup> is:

First cell location: Last cell location

**B5:E5** includes cells B5, C5, D5, and E5.

You will see the total displayed in cell F5.

1: Date	2:	3: March	4: June	5: Sept	6: Dec	7: Year
1: A	2: B	3: C	4: D	5: E	6: F	7: G
1: Date	2:	3: March	4: June	5: Sept	6: Dec	7: Year
5: Sales	3000	5000	4500	6000	18500	



Here's another feature. Type (using the single quote):

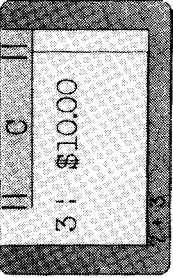
' ←

See what happens?

1: Date	2:	3: March	4: June	5: Sept	6: Dec	7: Year
1: A	2: B	3: C	4: D	5: E	6: F	7: G
1: Date	2:	3: March	4: June	5: Sept	6: Dec	7: Year
5: Sales	3000	5000	4500	6000	18500	

The single quote means "repeat the following text until you bump into a cell that isn't empty." Stop the line by going to cell G4 (type **=G4** ←), and by entering a double quote ("**"** ←). You are filling G4 with blanks, which will turn the underline off.

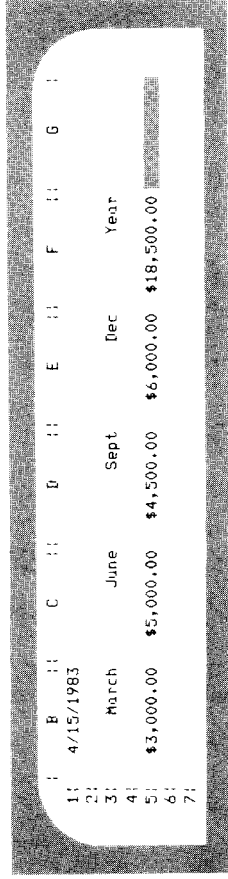
1: Date	2:	3: March	4: June	5: Sept	6: Dec	7: Year
1: A	2: B	3: C	4: D	5: E	6: F	7: G
1: Date	2:	3: March	4: June	5: Sept	6: Dec	7: Year
5: Sales	3000	5000	4500	6000	18500	



What happened to our numbers? Well, when the Format added those extra characters (\$, and .00) the numbers got too big for the cells. We need to increase the cell width. Type:

- /F** (for the Format command)
- G** (for Global, changing the entire spreadsheet)
- 12** (the new cell width)
- TR** (for TextRight, right justifying text for better appearance)

**S** (so numbers are shown in dollar format) and press **↵**.



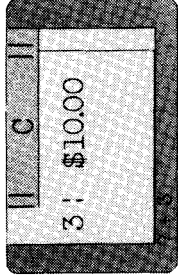
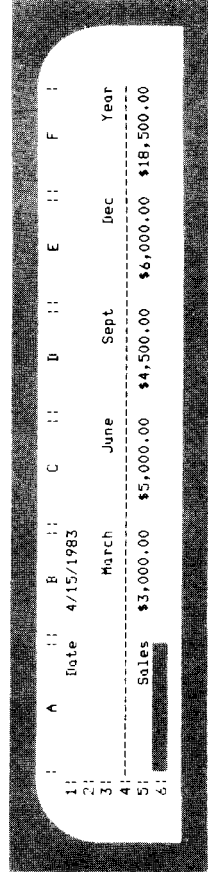
That solves our problem, but creates another. Part of the spreadsheet moved off the screen, and the line in row 4 doesn't repeat with TextRight. So move the cursor to cell A6 with the arrow keys, and type:

**/FR4,TL** **↵**

While we are adjusting the spreadsheet format, let's widen column A, the row title column, to allow for longer descriptions. Type:

**/FCA,15** **↵**

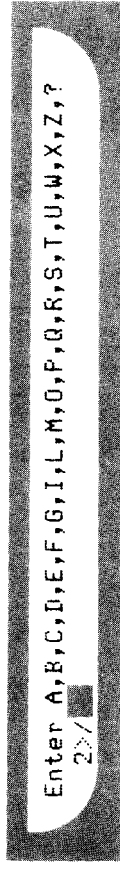
Here's what the display looks like now.



## SPREADSHEET FORMAT

That doesn't look as professional as we'd like though. It would be nice to add dollar signs, commas, and decimals. For this, we need to change the row format.

Type a slash (**/**). Notice that the middle status line changes:



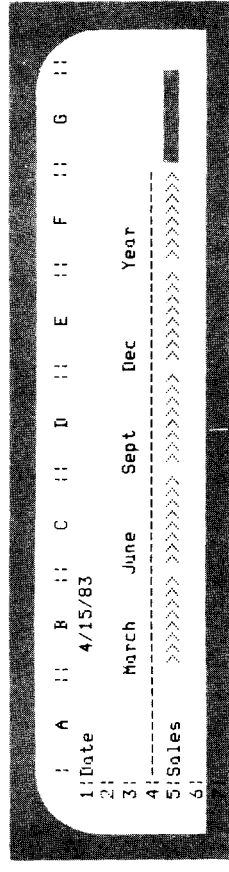
These are the SuperCalc<sup>2</sup> Slash Command options that let you change your spreadsheet.

You will soon learn these commands by heart. If you ever want to see more explanation about each of these Slash commands, press the **?** key for help.

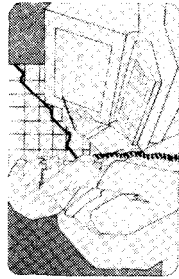
Now we want to change the row Format, so type an **F**. The word Format is automatically filled in, and the middle status line prompts you for the additional information necessary.

Just change the format for one row, so type **R**, and then the number of the row we need to change, **5**, and a comma. In this case, we want one of the User-Defined formats. Type **U** and **1**.

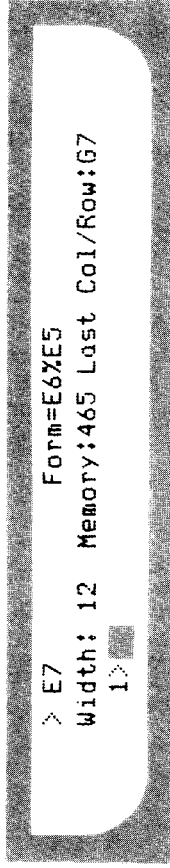
Press **↵**.







Now move the cursor to E7.



Notice that the formula there has been automatically adjusted, so that it uses E5 and E6 values, rather than B5 and B6 from the original formula.

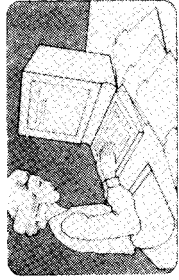
To finish off the line, move the Spreadsheet Cursor to F7 and type:

**SUM(B7:E7) ←**

Move the Spreadsheet Cursor back to the A column with the arrow keys (or type **A1←**) to see the results of all your work.

1:	A	B	C	D	E	F
2:	Date	4/15/1983				
3:		March	June	Sept	Dec	Year
4:						
5:	Sales	\$3,000.00	\$5,000.00	\$4,500.00	\$6,000.00	\$18,500.00
6:	Cost %	60.00	60.00	60.00	60.00	60.00
7:	Cost of Sales	1800.00	3000.00	2700.00	3600.00	11100.00
8:						
9:						
10:						
11:						
12:						
13:						
14:						
15:						
16:						
17:						
18:						
19:						
20:						
> A1						

Width: 15 Memory:465 Last Col/Row:67 ? for HELP



## MOVING ON

Add a few more lines. In A6, type:

**"Cost %"** ←

and in B6 enter:

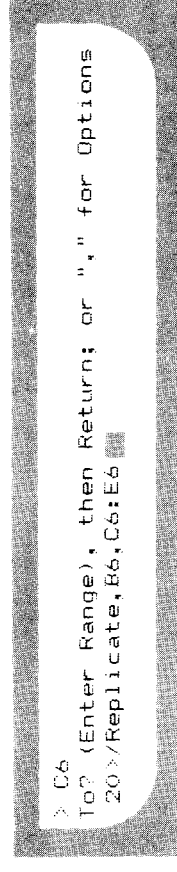
**60** ←

In this simple example let's assume our Cost of Sales is a straight 60 percent during the whole year. You could enter 60 in cells C5, D6, and E6, but let's try an easier way.

Type:

**/R** (for Replicate, to repeat the contents of a cell)  
**B6,** (the cell contents to be repeated)  
**C6:E6** (the range of cells where B6 is replicated)

Here's what the status line looks like:



Now press ←. You will find that 60 is filled in for all quarters.

Move to A7 (type **=A7** ←). Enter the title **"Cost of Sales**.

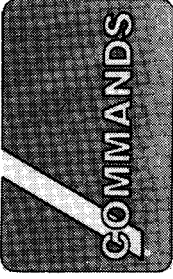
Enter the following formula in B7:

**B6 % B5**

This formula takes the value in B6 as a percentage, and multiplies it by the value in B5.

Fill in this row using the replicate command, and you will notice another useful feature. Type:

**/RB7,C7:E7** ←



## IF YOU HAVE MORE TIME...

First, clear the display and start working on a new spreadsheet. Type:

**/Z** (to Zap or clear the contents of the spreadsheet)  
**Y** (to confirm that you want to erase the display)

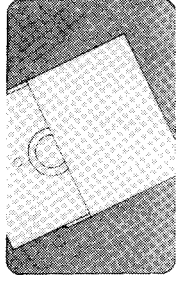
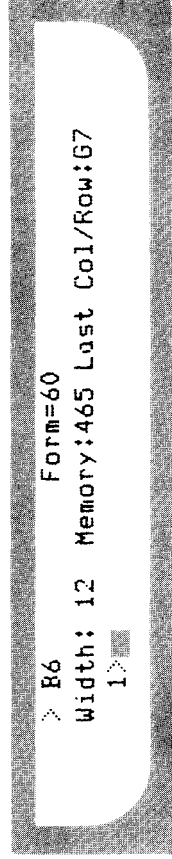
Now reload the spreadsheet you saved earlier. Type:

**/L** (to Load the spreadsheet from disk)  
**TEN** (the name of the file you saved earlier)  
, (to end the file name)  
**A** (for All so we get the whole thing)

First, let's hide the Cost %. Type:

**/F** (the Format command)  
**R** (to hide a Row)  
**6** (the Row we want to hide)  
,**H** (to indicate the end of the range)  
↔ (the Hide option)

The row disappears from the Spreadsheet display, but if you move the Spreadsheet Cursor to Row 6, the top status line shows that percentages are retained for calculations.



## SAVING YOUR WORK

Now you have a short Ten-Minute Income Statement in the memory of your computer. If you turn the power off, you lose all your work so far. In order to save your work, type:

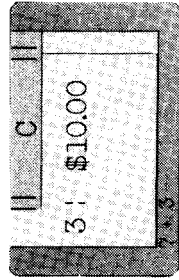
**/S** (the Save command)  
**Ten** (a name for filing this spreadsheet)  
, (to end the file name)  
**A** (to save All of the spreadsheet)

This saves the spreadsheet on your SuperCalc<sup>2</sup> disk, filed under the name **TEN.CAL**. If you already have a file named TEN.CAL on that disk, SuperCalc<sup>2</sup> would ask you (through a prompt on the status line) if you want to replace the other file with this one (Overwrite), change the other file into a Backup file (.BAK instead of .CAL), or Rename and save the spreadsheet.

## WHAT YOU'VE LEARNED

At this point you're probably looking at the clock and thinking, "Not bad for ten minutes!": You have already learned a lot. These are all the basics you need to build even sophisticated spreadsheets.

If you want to stop now, turn to the Ending the Show section. If you have a few more minutes, though, we'll show you how to load files, do the *what if...*s that the SuperCalc<sup>2</sup> program is famous for, and show you how to consolidate and print spreadsheets.



## CHANGES AND ADJUSTMENTS

Perhaps the most valuable aspect of the SuperCalc<sup>2</sup> program is the ability to show the results immediately when you change assumptions. Let's look at some of these *What if...*s.

What if you increase third quarter sales by \$2,000? Try it and see what happens to profits.

Move the Spreadsheet Cursor to cell D5 and type:

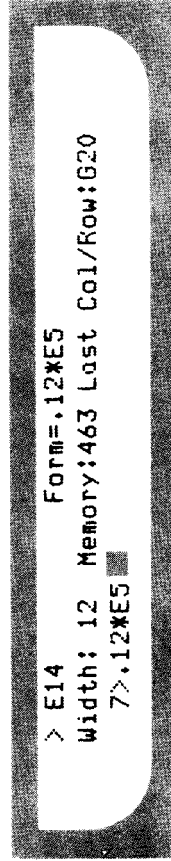
**6500** ←

See how Net Income went from \$316 to \$456?

What if G & A expense increases in the fourth quarter? Move to E14 and type:

**/E** (for the Edit command)

And press ← to specify the current cell. The contents of that cell are shown on the entry line. You can move the cursor on the bottom line of the display left and right to edit that formula.



Move the cursor to the 1 in .12 and press the down-arrow key (or **Ctrl-X**). The down-arrow key deletes the character at the cursor, while the up-arrow inserts more space at the cursor position so you can type in additional characters. When you press ←, the formula in E14 is changed to 20% of Sales, rather than 12%. Notice how this affects the Income Statement. Profit decreases to \$162.



Let's expand the spreadsheet. Type:

**/L** (for Load)

**TenMin** (the name of the sample file that came with your SuperCalc<sup>2</sup> program that contains the rest of the Income Statement)

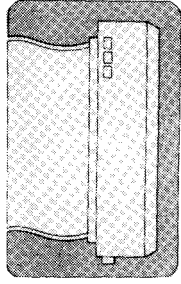
**'A** (to end the file name)

**A** (for All so we get the whole thing)

Here's what it looks like:

1:Date	A	B	C	D	E	F
2:		4/15/1983				
3:		March	June	Sept	Dec	Year
4:						
5:Sales		\$3,000	\$5,000	\$4,500	\$6,000	\$18,500
6:						
7:Cost of Sales		1,800	3,000	2,700	3,600	11,100
8:						
9:						
10:Gross Profit		1,200	2,000	1,800	2,400	7,400
11:						
12:						
13:Selling Expense		450	750	675	900	2,775
14:Gen & Admin Exp		360	600	540	720	2,220
15:						
16:Net Before Tax		390	650	585	780	2,405
17:Income Tax:		179	299	269	359	1,106
18:						
19:Net Income		\$211	\$351	\$316	\$421	\$1,299
20:						
21:						

Form=B16-B17  
Width: 12 Memory:463 Last Col/Row:G20 ? for HELP  
Function keys: F1 = HELP ; F2 = ERASE LINE/RETURN TO WORKSHEET



The original value was 60 (percent). Consolidation also added the values for these cells. If formulas were preserved, Cost of Sales would be 120% of Sales, not at all desirable.

## PRINTING THE SOLUTION

Want to print what you've created? Make sure your printer is properly hooked up, has paper and is ready, and continue.

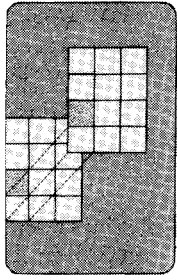
Before we print the display, though, let's remove the border of the spreadsheet.

**/G** (The Global command, which affects overall characteristics of the spreadsheet display)

**B** (for Border, turning it Off if it is currently showing, or On if it is not displayed)

Date	4/15/1983				Year
	March	June	Sept	Dec	
Sales	\$6,000	\$10,000	\$11,000	\$12,000	\$39,000
Cost of Sales	3,600	6,000	6,600	7,200	23,400
Gross Profit	2,400	4,000	4,400	4,800	15,600
Selling Expense	900	1,500	1,650	1,800	5,850
Gen & Admin Exp	720	1,200	1,320	2,400	5,640
Net Before Tax	780	1,300	1,430	600	4,110
Income Tax	359	598	658	276	1,891
Net Income	\$421	\$702	\$772	\$324	\$2,219

F6  
Width: 12 Memory:463 Last Col/Row:G20 ? for HELP



## CONSOLIDATION

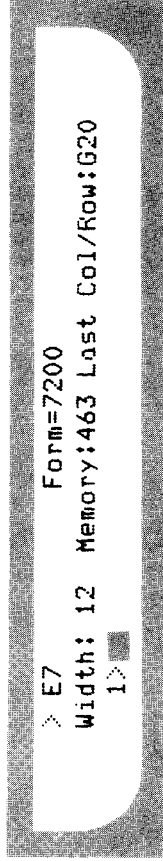
Another powerful feature of the SuperCalc<sup>2</sup> program is its ability to consolidate spreadsheets. You can set up spreadsheets for different offices or divisions, do their projections, and then consolidate these spreadsheets to see company-wide results.

To see how this works, let's consolidate our original sales data, stored in the TEN.CAL file, with the current spreadsheet. Type:

**/L** (the Load command)  
**TEN,** (the original spreadsheet we saved earlier)  
**C** (to Consolidate)

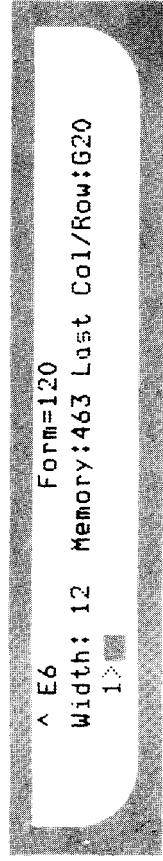
The original sales values are added to the values in the current spreadsheet, and the lower part of the spreadsheet is recalculated to reflect these new values.

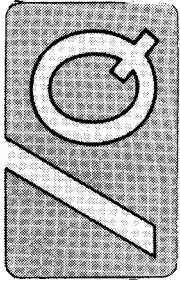
Move the Spreadsheet Cursor up to Row 7, the Cost of Sales.



Recall that the formulas in that row were originally entered as Cost % of Sales (B6 % B5, for example). Now note that the top status line shows the dollar value of the cells, rather than the original formula. When you consolidate statements, the values are consolidated, rather than the formulas.

Why? Move the Spreadsheet Cursor up to the hidden Row 6.





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The border disappears, so we are ready to print the Income Statement. Type:

- /O** (the Output command)
- D** (to output the display)
- All** (to output All of the spreadsheet)
- ,** (to indicate the end of the range)
- P** (to send the output to the printer)

Printing should begin. If the spreadsheet doesn't print, be sure that your printer is set on line, is turned on, and has paper.

After your report has finished, press any key to continue with SuperCalc<sup>2</sup>.

## ENDING THE SHOW

Before you finish, do you want to save your spreadsheet? When you end the program, any work that hasn't been saved is gone. Refer back to the section on saving your work.

If you want to end the SuperCalc<sup>2</sup> program, just type:

- /Q** (the Quit command)
- Y** (Yes, you want to Quit)

Other Sorcim SuperWare products come with "10 Minute" guides. Why not give them a try?

# Using and Understanding SUPERCALC2

## INSTRUCTIONS

# 3.1.1

### COPY ONE SIDE OF A DISC USING DISCKIT

- Switch on the computer
  - Put your copy of the CP/M Plus disc in Disc Drive A (with the CP/M System/ Utilities/Basic side pointing to the left).
  - Reset the system with [SHIFT], [EXTRA] and [ALT].
  - Key in: DISCKIT and press [ENTER] or [RETURN]
  - When the disc drive stops working, remove the CP/M Plus disc from the drive. (If you are prompted to "Press any key to continue", just tap the [SPACE BAR].)
  - Replace the CP/M Plus disc with the disc you want to copy.
  - Select the Copy option by pressing [f5].
  - Press [Y] to confirm the Copy option.
  - When you see the prompt "Insert disc to WRITE", replace the "master disc" with a blank disc. The side which is to hold the copy should be pointing to the left. Press any key to continue. Note: Discs are formatted as part of the Copy process.
- Note: If you are prompted "Disc is write-protected", replace the disc with one which is not write protected. For details refer to your Amstrad User Guide.
- When you are prompted "Insert disc to READ", replace the copy disc with the "master disc", pointing to the left and press any key.
  - When you are prompted "Insert disc to WRITE", replace the "master disc" with your copy disc and press any key. Note: If you load the wrong side of the disc you'll be prompted to load the correct disc.
  - When you are prompted "Copy completed", remove the copy disc and label it; then press any key.
  - Press any key to return to the Diskkit Menu.
  - Press [EXIT] to leave Diskkit.

# CASHFLOW EXERCISE

	A	B	C	D	E
	QTR1	QTR2	QTR3	QTR4	
1: BALANCE BF	1200				
2: PAPERS	4800				4900
4: TOBACCO	4000				4100
5: SWEETS	2000				2050
6: TOT SALES					
7: OVERHEADS	1650				1500
8: WAGES	3000				
9: TOT COSTS					
10: BALANCE					

CP/M is a trademark of Digital Research Inc.  
 SUPERCALC is a trademark of Sorcim/IUS  
 AMSTRAD is a trademark of AMSTRAD Consumer Electronics plc

RTSCI



## SUPERCALC2 ON THE AMSTRAD PERSONAL COMPUTER

By the time you have worked through the tapes you will have mastered how to use SuperCalc2 to help you with your business and financial planning. You will have seen how to:

- Set up Worksheets
- Enter Labels, Values and Formulae
- Insert and Delete Rows and Columns
- Save Worksheets on Disc
- Recall Worksheets
- Produce Printed Copies
- Set up a cashflow spreadsheet

### You will need

- An Amstrad Personal Computer
- The SuperCalc Distribution Disc
- The CP/M Plus System/Utilities/Basic Disc
- The Master SuperCalc2 Disc
- Two blank unused discs
- An ordinary cassette recorder
- Paper for the printer
- Pen and paper for any notes you want to make

### Starting the Audio Session

- Make sure your Amstrad is connected up and switched on at the mains. You will find full instructions in your Amstrad User Guide.
- Load the audio tape into the cassette recorder, start the tape and listen to the instructions. Start with the computer switched off. The voice is your personal tutor telling you what to do and how to do it.

The first parts of the audio session show you how to prepare discs ready to use SuperCalc2. You *must* go through the START UP PROCEDURE before starting part three.

## FORMAT BOTH SIDES OF A DISC

- Switch on the computer and put your copy of the CP/M Plus disc in drive A (with the CP/M System/Utilities/Basic side pointing to the left).
- Key in: DISCKIT and press [ENTER] or [RETURN]
- When the disc drive stops working, remove the CP/M disc from the drive. (If you are prompted to "Press any key to continue", just tap the [SPACE BAR].)
- Put a brand new disc into drive A (with side 1 pointing to left).
- Tap the [F3/F4] key to select the Format option.
- Tap the letter [Y] to confirm. (You will see numbers appear at the top left of the screen as Diskkit lays down 40 tracks in the right format to hold information).
- When the Format process is complete, remove the disc from the drive. (If you are prompted to "Press any key to continue", just tap the [SPACE BAR]).
- Replace the blank disc in the drive with side two pointing to the left.
- Press [Y] to confirm.
- When side 2 of the disc has been formatted, remove the disc from the drive.
- Tap the [SPACE BAR] once.
- Press any key to cancel the Format process.
- Tap the [EXIT] key to finish working with Diskkit.

If you are going to use this disc to make a working copy of SuperCalc2, label side one "REEL TIME-SUPERCALC2" and label side two "UTILITIES". Use this disc to go through the START UP PROCEDURE on this instruction card.



## START UP PROCEDURE

This procedure makes a copy of *both* sides of the SuperCalc2 master disc and "installs" it for your computer.

### You will need three discs:

- A Working Copy of the CP/M Plus System/Utilities/Basic Disc.
- The SuperCalc2 Distribution Disc.
- A blank disc which has been formatted on both sides. Label Side One "REEL TIME-SUPERCALC2", label Side Two "UTILITIES"

You *must* go through the Start Up Procedure before starting part three of the audio session, otherwise you will be unable to run SuperCalc2. This procedure sets up SuperCalc2 for your Amstrad computer. Tick off each step of the procedure as you complete it. The first part copies side one of the disc, the second part copies side two of the disc.

**Caution:** If you get error messages during the Start Up Procedure you may have put the wrong side of the disc into the drive. You will need to repeat the procedure before starting to use SuperCalc2.

- Switch on the computer and put the working copy of the CP/M Plus disc in Disc Drive A (with Side One pointing to the left).
- When you have the "A>" prompt on the screen, Replace the CP/M Plus disc with the SuperCalc2 disc with Side One "PROGRAMS AND SPREADSHEETS" facing to the left.
- Key in "SUBMIT MAKE" followed by the number of your computer. For example:

SUBMIT MAKE8256

### FROM HERE ON READ YOUR SCREEN PROMPTS CAREFULLY AND FOLLOW THE INSTRUCTIONS YOU ARE GIVEN.

Note: For this procedure, you will need to use a blank disc which has been formatted on both sides. Label Side One of the blank formatted disc "REEL TIME - SUPERCALC2", label Side Two "UTILITIES".

- Press [RETURN]

If you get the message "Disc is write protected - Retry, ignore or Cancel?":

- Remove the card insert from one of the blank disc cases and look at the instructions "How to Preserve Recordings".
- Take the disc out of the drive and follow the instructions to make sure the *both* sides of the SuperCalc2 disc are *not* protected.
- Replace the SuperCalc2 disc in the drive with Side One pointing to the left.
- Press the letter [R]
- Repeat the "SUBMIT" command (i.e. key in SUBMIT MAKE followed by the number of your computer) and follow the screen prompts carefully.

The disc for B is the side labelled "SUPERCALC2 PROGRAMS AND SPREADSHEETS".

The disc for A is your blank disc labelled "REEL TIME-SUPERCALC2"

- When you are prompted:

"Side 1 is now complete, now the process must be repeated for side 2"

Take the disc out of the drive and replace it with side two of the master SuperCalc2 disc (with the side labelled "SUPERCALC2 INSTALLATION" pointing to the left).

FROM HERE ON READ YOUR SCREEN PROMPTS CAREFULLY AND FOLLOW THE INSTRUCTIONS YOU ARE GIVEN.

The disc for B is the side labelled "INSTALLATION".

The disc for A is the side labelled "UTILITIES".

When you get an asterisk prompt on screen (at the end of the copying process):

- Press [RETURN].
- Remove the disc from the drive. Put your Master SuperCalc2 disc in a safe place.

Use the disc labelled "REEL TIME-SUPERCALC2" for the audio session.

# Using and Understanding SUPERCALC2

## Calendar Functions

- DATE(D)** Allows you to enter and display a date D in the form MM, DD, YY or MM, DD, YYYY
- DAY(DV)** Finds the number of the day of the date
- JDATE(DV)** Finds the Modified Julian Date of the date in DV
- DVAL(X)** Finds the date of the value x
- MONTH(DV)** Returns the number of the month of the date (1 for January etc)
- WDAY(DV)** Tells you the number of the day of the week of the date (Sunday is 1, Saturday is 7)
- YEAR(DV)** Finds the number of the year of the date in (1900 is 1)

## Functions to Find a Value From a List

- COUNT(R)** Finds the number of cells in that range which contain values
- LOOKUP(X,R)** Look for the value X in the range and return the value that is in the cell immediately to the right (if you've used a row range then the value in the cell below is returned)

## Logical Functions

These functions operate on 'truth' values. True is represented by 1, and false is represented by 0. The best way to understand the logical functions is to remember the following statement: IF (logical condition) THEN (value 1) ELSE (value 2)

- IF(LC, x,y)** If the logical condition LC is true then value x is placed in the cell, if it is false then value y
- AND(x,y)** Returns the true value only if both x and y are true, otherwise it returns 0 (false)
- NOT(x)** Returns the true value if x is FALSE, but returns the false value if x is TRUE
- OR(x,y)** Returns the true value if x is true OR y is true. Returns a false value when both x and y are false.

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## CHANGE THE WAY INFORMATION IS DISPLAYED (SPREADSHEET FORMAT)

### Specify Spreadsheet area

- /FG** Change the format of the whole spreadsheet
- /FR** Change the format of a row (or rows)
- /FC** Change the format of a column (or columns)
- /FE** Change the format of a block of entries

### Format Options

- I** Display numbers as integers
- G** Display numbers in the general format
- E** Display numbers in exponential form
- \$** Display numbers in monetary form (dollars and cents)
- R** RIGHT justify numbers
- L** LEFT justify numbers
- TR** RIGHT justify text
- TL** LEFT justify text
- \*** Display numbers as a string
- Un** Choose format number from the USER-defined format table
- H** Hide values, so that cells appear to be empty
- D** Use the standard or DEFAULT format setting
- n** Alter the column width to n characters

### Change the Whole Spreadsheet (Global Options)

- Use the same *command* to switch the option *on* and *off* again.
- /GF** Display the formulae in cells, instead of the value of those formulae
- /GN** Move the cursor in the direction of the last cursor control key pressed
- /GB** Display (hide) the spreadsheet border
- /GT** Move the cursor only to cells which are not empty and are not protected

### Create a Table of Defined Formats

- /FD** Call up the user-defined format table in order to specify your own formats

### Protect Cells from being Overwritten or Deleted

- /P** Protect a cell (or a group of cells)
- /U** Remove the protection of a cell (or a group of cells)

## LOAD AND SAVE SPREADSHEETS

### Load a Spreadsheet from Disc

- /LA** Recall a sheet from disc
- /LC** Add the values of the cells of the stored sheet to the values of the corresponding cells of the current sheet, and display the result
- /LP** Recall part of the sheet from the disc

### Save a Spreadsheet on Disc

- /S** Save a sheet on disc

### Save Options

- A** Save the entire sheet (including the display format and formulae)
- V** Save the cell values as numeric constants, not as formulae
- PA** Save part of the sheet (including the formulae and format for each cell)
- PV** Save the sheet as values not formulae

### Use the Execute Files Facility

- /X** Run an execute file. While the execute file is running, you have the following options:
- &** Transfer control between the execute file and the keyboard
- ↑C** Stop an execute file running

## USING AND UNDERSTANDING SUPERCALC2

This guide gives you information about the most commonly used SuperCalc2 commands. For more detailed information about specific commands, refer to your SuperCalc2 manual.

### CREATE A SPREADSHEET

#### Insert new rows or columns onto the Spreadsheet

- /IR Create a blank row (or rows)
- /IC Create a blank column (or rows)

#### Delete Information

- /B Delete or BLANK a cell (or cells)
- /DR Delete a row (or rows)
- /DC Delete a column (or columns)
- /ZY Delete the entire spreadsheet and return to an empty spreadsheet display (ZAP)

#### Change Information

- /E Call a given cell onto the entry line to EDIT it

#### Move Information

- /MR Move a row (or rows) to a new position
- /MC Move a column (or columns) to a new position

#### Copy Information

- /C Copy the contents of one area of cells to another area of the same size on the spreadsheet
- /R Copy the contents of one area of cells to another area of the same size or larger on the spreadsheet (Replicating cells)

#### Arrange Rows and Columns in Order of Value

- /AR Arrange a row of values in ascending order with the highest value on the *left* of the row
- /AC Arrange a column of values in ascending order with the highest value at the *top* of the column

### Fix Spreadsheet Titles for Scrolling

- /TH Lock the current row (and any rows above it) as a title for scrolling
- /TV Lock the current column (and any columns to the left of it) as a title for scrolling
- /TB Lock both the current column and row (and any rows above or columns to the left) as titles for scrolling
- /TC Remove a previously locked title

### Create a Second Window onto the Spreadsheet

- /WH Split the screen horizontally into two
- /WV Split the screen vertically into two
- /WS Scroll the windows synchronously
- /WU Allow each window to be scrolled independently of the other
- ; Move the cursor to the other window
- /WC Clear the second window and return to one window display

## ADJUST THE WAY CALCULATIONS ARE CARRIED OUT

### Automatic and Manual Recalculation

- /GA Recalculate each formula automatically, every time a new value is added to the spreadsheet
- /GM Switch the calculation from automatic to manual
- ! Tell SuperCalc2 to recalculate formulae

### Change the Calculation Order

- /GR Set the calculation order to be row by row
- /GC Set the calculation order to be column by column

## CHANGE THE WAY INFORMATION IS DISPLAYED (SPREADSHEET FORMAT)

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**Super  
Reader  
Calculator<sup>®</sup> 2**

**Card Reader  
Answer**

# SuperCalc<sup>2</sup> Entry Guidelines

## How to Begin, Save, Print, & End

Type the entry & respond to prompts:

To Begin at system prompt **SC2** (↵)  
To Save your work **/S**  
To Print your work **/O**  
To End your work **/Q**

Notes: • (↵) is your Return or Enter key.

• **CTRL** (below) means hold down CTRL key.

† Your SuperCalc<sup>2</sup> might be installed to begin when equipment is switched on.

## Initial Entry Keys

**/** Begin a slash command.  
" Begin a text entry.  
' Begin a repeating text entry.  
! Recalculate (default is auto recalculate).  
& Return to "Execute File."  
= Move cursor to cell specified (GoTo).  
; Move cursor to other window of split-screen.  
↑ or **CTRL E** Move spreadsheet cursor up.  
↓ or **CTRL X** Move spreadsheet cursor down.  
← or **CTRL S** Move spreadsheet cursor left.  
→ or **CTRL D** Move spreadsheet cursor right.  
? Display AnswerKey™ help screen.  
(↵) Move cursor in current direction (when "Next" is on).  
Any other character begins a "formula" entry.

Notes: • To scroll spreadsheet, move cursor beyond edge of window (stops at extreme edges).  
• Formatting order of precedence is:  
Entry, Row, Column, Global  
• Maximum characters per entry: numbers 16, formulas 116, text 115

## Data Entry Line Edit Keys

← or **CTRL S** Move cursor left.  
→ or **CTRL D** Move cursor right.  
↓ or **CTRL X** or **DEL** Delete character at cursor.  
↑ or **CTRL E** Insert blank space at cursor.  
**INSERT** Allow insert at cursor (some computers).  
**ESC** Allow arrow or cursor CTRL keys to move cursor to another cell and return cell location.  
**TAB** Move between start and end of entry.  
**CTRL Z** or **CTRL C** or **F2** Clear current entry line.  
(↵) Enter value from entry line into active cell.

## Range Entries

A range is a cell, row, partial row, row range, column, partial column, column range, block, or entire spreadsheet.

Examples:

Top-left cell: **A1** Bottom-right cell: **BK254**  
Row: **7** Column: **G**  
Partial row: **A5:H5** Partial column: **D2:D18**  
Row range: **2** or **2:10** Column range: **A** or **A:P**  
Block range: **C3:H20** Entire spreadsheet: **ALL**

## Formula Entries

Formula entries include numbers (integer, decimal, exponential), cell references, mathematical operators, functions, and values.

Cell values can be Numeric, Textual Data, Error, or NA.

## Arithmetic Operators

+	addition	-	subtraction
*	multiplication	/	division
^	or ** to power of	%	percent of

## Relational Operators

=	equal to	<>	not equal to
<	less than	<=	less than or equal to
>	greater than	>=	greater than or equal to

**IF** (expression a, expression b, expression c)  
If a is true, then b, else c.

**OR** (expression a, expression b)  
If either a or b is true, then 1, else 0.

**AND** (expression a, expression b)  
If both a and b are true, then 1, else 0.

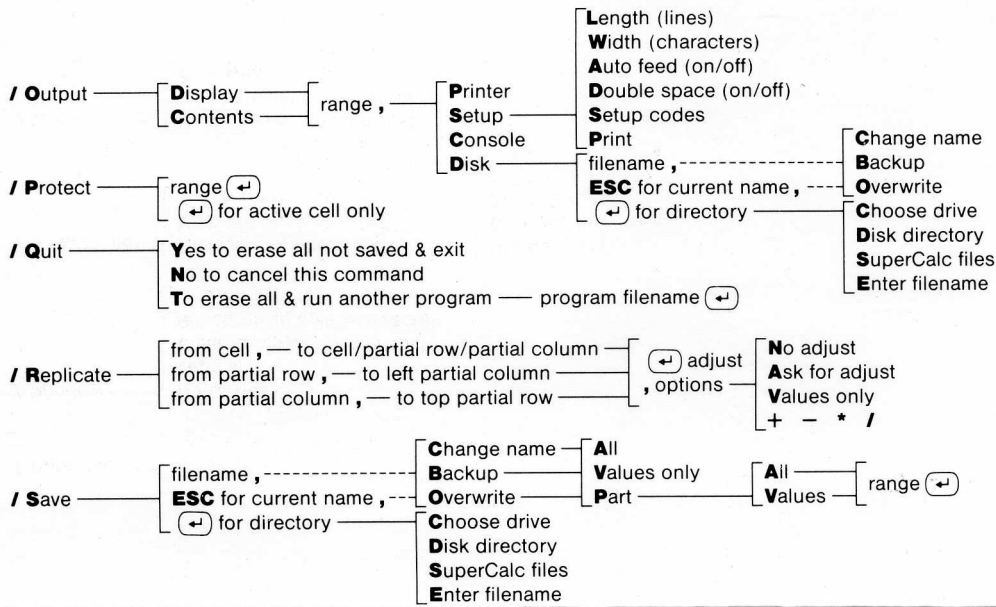
**NOT** (expression a)  
If a is false, then 1, else 0.

(continued on back panel)





Column — from column range, — to column letter (↔)



**/ Title** — [ **H**orizontal lock  
**V**ertical lock  
**B**oth  
**C**lear ] ]

**/ Unprotect** — [ range (↔)  
(↔) for active cell only ] ]

**/ Window** — [ **H**orizontal split  
**V**ertical split  
**C**lear to right or below split  
**S**ynchronize split-wise scroll  
**U**nsynchronize split-wise scroll ] ]

**/ X (eXecute)** — [ Filename for execute file (↔)  
**E**SC for current name (↔)  
(↔) for directory ] [ **C**hoose drive  
**D**isk directory  
**S**uperCalc files  
**E**nter filename ] ]

**/ Zap** — [ **Y**es to erase all not saved  
**N**o to cancel this command  
**C**ontents to erase all but User-defined table ] ]

The SuperCalc<sup>2</sup> display screen says it all  
 See value and content of any cell at a glance.  
 Status, prompts and entry always in view below  
 spreadsheet. Plenty of extra help available at  
 AnswerKey™ help screens.

[Form = F11-(B11/12)] Active cell content  
 Identified as a formula (Form =), displayed as entered

[P] Active cell is protected  
 Protected against alterations or deletions until you  
 change cell back to unprotected status.

[R\$T\$L] Active cell format  
 Defined quickly and easily through format-entry  
 command.

[G11] Active cell location  
 Displayed here at all times, even if you turn column  
 and row border off.

[<] Current cursor direction  
 Shows which way cursor is set to move if Return or  
 Enter key is pressed. This function can easily be  
 turned off, and back on, through global-next  
 command.

[Width:9] Current column width setting  
 Shows that column G is set at standard 9 character  
 width. Columns C through F have been reset to 0  
 You can reset each column to any width between 0  
 and 127 characters.

[13>F11-(B11/12)] Current entry  
 Displays position of cursor on entry  
 line (13 -), followed by entry as typed

	A	B	G	H	M	N
1: This is a Sample SuperCalc <sup>2</sup> Worksheet						
2:						
3:						
4: ASSETS		Jan	Jun	Jul	Dec	Total
5: Accts Receivable	\$1,000.00	\$1,276.28	\$1,340.10	\$1,710.34	\$15,917.13	
6: Cash	250.00	607.75	638.14	814.45	7,353.39	
7: Unsold Goods	250.00	319.07	335.02	427.58	3,769.28	
8: Total Assets	1,500.00	2,203.11	2,313.26	2,952.37	27,039.00	
9: LIABILITIES						
10: Accts Payable	1,000.00	583.33	500.00	83.33	6,500.00	
11: Storage Costs	50.00	50.00	50.00	50.00	7,100.00	
12: Labor	100.00	127.63	134.01	171.03	1,591.71	
13: Materials	50.00	63.81	67.00	85.52	795.86	
14: Total Liabilities	1,200.00	824.78	751.01	389.88	9,487.57	
15:						
16: Net Income Before Tax	300.00	1,378.33	1,562.25	2,562.49	17,552.23	
17: Dep. Allowance	100.00	100.00	100.00	100.00	1,200.00	
18: Taxable Income	\$200.00	\$1,278.33	\$1,462.25	\$2,462.49	\$16,352.23	
19: G11 R\$T L P Form-F11-(B11/12)						
20: Width: 9 Memory:451 Last Row/Col:N24						
21: 13) F11-(F11/12)						
22:						
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Split-Screen: Two windows at once  
 Split screen horizontally or vertically; compare  
 different parts of spreadsheet or different formats.  
 Lock one or more columns and rows in place for  
 even greater flexibility.

Text Entries: Extra-long entries no problem  
 Spill text over into any empty neighboring cells—a  
 real convenience when entering headings or labels.

Active Cell: Over 16,000 cells available  
 Shows spreadsheet cursor at cell G11. With 63  
 columns by 254 rows, you can count on space being  
 available for your spreadsheet applications.

[Protected Entry] Message in plain English  
 Tells you what is wrong if you make a mistake. Here  
 you are informed that you cannot change entry  
 because it is protected. You can, of course, change  
 status of cell back to unprotected whenever you wish.

[? for HELP] AnswerKey™ help screens  
 Press ? key whenever you have a question. The  
 appropriate help screen—one of many provided by  
 SuperCalc<sup>2</sup>—will tell you what to do next.

[Memory:451] Memory space available  
 Indicates space for 451K (over 451,000) characters  
 remains in memory. Actual number depends on  
 memory capacity of your computer. You never need  
 be surprised by an "out of memory" message.

[Last Row/Column:N24] Size Indicator  
 Reminds you that cell N24 is lower-right corner of  
 current spreadsheet.

## SuperCalc<sup>2</sup> Entry Guidelines (continued)

### Textual Values

(“any text”) values, up to nine characters, can be referenced as formula values.

### Arithmetic Functions

[(V) Value; (R) = Range]

<b>ABS</b> (V) absolute value	<b>MIN</b> (R) minimum value
<b>AVERAGE</b> (R) mean	<b>MOD</b> (a,b) remainder of a/b
<b>COUNT</b> (R) formula cells	<b>PI</b> 3.141592653589793
<b>EXP</b> (V) exponent base e	<b>ROUND</b> (a,n) rounds a to n places
<b>INT</b> (V) integer	<b>SIN / COS / TAN / ASIN /</b>
<b>LN</b> (V) natural log base e	<b>ACOS / ATAN</b> (V) radians
<b>LOG10</b> (V) log base 10	<b>SQRT</b> (V) square root
<b>MAX</b> (R) maximum value	<b>SUM</b> (R) total value

### Calendar Functions

<b>DATE</b> (MM, DD, YY)	<b>MONTH</b> (Date Value)
<b>DAY</b> (Date Value)	<b>TODAY</b>
<b>DVAL</b> (Numeric Value)	<b>WDAY</b> (Date Value)
<b>JDATE</b> (Date Value)	<b>YEAR</b> (Date Value)

### Special Functions

**ERROR** displays “ERROR”.

**LOOKUP** (Value, Col/Row Range) lookup table.

**NPV** (Discount, Col/Row Range) net present value.

**NA** displays “N/A” for data not available.

**ISERROR** checks value for “ERROR”.

**ISNA** checks value for “N/A”.

Note: For more information, examples, and applications see SuperCalc<sup>2</sup> User's Guide & Reference Manual.

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