

3.4 STATISTICS

Press <S> to see the next menu:

Calc_stat Import_edit Freq_dist Norm_dist Data_save Graph_save Help

Before you can start calculating statistics functions you need to create or import a list of numbers.

3.4A <I>mpport_edit

Press <I> to see the next menu:

Down Up Number_edit Import Clear Func_edit Help

a) <I>mpport

This option enables the import of a file of numbers (1 column), the file should be in the form of a text (ASCII) file.

Press <I> to see the next prompt:

Input the file name - isra3

Type the file name (drive name directories etc. if its not in the default directory) and press the ENTER key to get the next screen.

Down	Up	Number_edit	Import	Clear	Func_edit	Help
Move one cell down						[ESC] - Previous menu
A	B	C	D	E		
1	=====					
2	Units		Output/Input		Memory	
3	=====					
4	None		0.00		0.00	
5	=====					
	FA	FB	FC	FD		
1	1200					
2	1201					
3	1201					
4	1201.5					
5	1200					
6	1201					
7	1201					
8	1201.5					
9	1199					
10	1198					
11	1197					
12	1197.5					
13	1200					
14	1201					

This is a partial list of the numbers in the file ISRA3. Using the Down and the Up menu items the user can scroll through the numbers and edit any number using the Number_edit menu item.

b) <N>umber_edit

Press <N> to get into the number editing mode then type the number and press ENTER. Press ESC or ENTER to exit to the previous menu.

c) <F>unc_edit

Press <F> to get the next screen:

Down	Up	Right	Left	Next	Previous	Edit	Help	
Move one cell down								[ESC] - Previous menu
	A		B		C		D	E
1	=====							
2	Units		Output/Input		Memory			
3	=====							
4	None				0.00		0.00	
5	=====							
	EB		EC		ED		EE	EF
1								
2								
3	SUM							
4	AVG							
5	MAX							
6	MIN							
7	STD							
8	VAR							
9	count							
10								
11								
12								
13								
14								

This is a sample of the statistic functions in the table. Using the first six menu items the user can scroll through the functions.

Press <E> to get the next prompt:

Input the new function name -

Type a new function name and press ENTER or just press the ENTER for no changes. The next screen appears:

	A		B		C		D		E
1	=====								
2	Units		Output/Input		Memory				

3	=====		
4	None	0.00	0.00
5	=====		
	EG		
1			
2			
3	@SUM(FA1..FA8192)		
4	@AVG(FA1..FA8192)		
5	@MAX(FA1..FA8192)		
6	@MIN(FA1..FA8192)		
7	@STD(FA1..FA8192)		
8	@VAR(FA1..FA8192)		
9	@COUNT(FA1..FA8192)		
10			
11			
12			
13			
14			

This is the functions table. The program is now in the Lotus EDIT mode, edit or add a function and than press the ENTER key or just press the ENTER key for no changes. By typing the keyword FN followed by a file name (like FNC:\LOTUS\?????.WK1) the user can define a spreadsheet which will be retrieved each time he uses the <c>alculate option. The spreadsheet C:\LOTUS\?????.WK1 will be retrieved and will replace the current program. This way the user can use this program as a file manager for all his scientific and engineering spreadsheets.

IMPORTANT

All LOTUS rules apply here, the function should be written as a LABEL (with a prefix like "'") followed by "+" or "-" or the "@" character. The program stores the functions on a separate file FORMULAS.WK1 as LABELS. When the user chooses the <c>alculate option the program deletes the prefix and the label becomes a formula.

The user can insert 240 character long functions from the keyboard.

Now the description screen appears:

Description -

	A	B	C	D	E
1	=====				
2	Units		Output/Input		Memory
3	=====				
4	None		0.00		0.00
5	=====				
	EL				
1					
2					
3	Calculate the sum of a list of numbers				
4	Calculate the average of a list of numbers				

- 5 Find the largest number in the list
 - 6 Find the smallest value in a list of numbers
 - 7 Calculate the standard deviation of the list of numbers
 - 8 Calculate the variance of the values in the list
 - 9
 - 10
 - 11
 - 12
 - 13
 - 14
-

The program has two modes:

1. One line description: type the description and press ENTER or just press ENTER for no changes and you are back in the edit menu.
2. Full document description: type FN and the file name you want to assign to the description file (EXAMPLE: FNC:\LOTUS\?????.WK1) and press the ENTER key. This example means that the file is ?????.WK1 located at drive C: in the LOTUS subdirectory (the .WK1 extension can be omitted). The program will switch to EDIT mode where the user can type the description document. Use the arrow keys to move through the lines. Don't press the ENTER key unless you are finished typing. The ENTER key exits the EDIT mode. The program can view only up to 76 character long lines, therefore start a new line after typing 76 characters.

Note:

If a description file is already exists and you press the ENTER key only, the program retrieves the description file.

**** WARNING ****

Because the program is now in the EDIT mode the Lotus keys are operative, however the user is strongly advised to use ONLY the UP, PGUP, DOWN and PGDN cursor keys keys to scroll through the lines, the program doesn't allow scrolling to the sides by hiding all the columns except the current column. Trying to unhide the columns MAY destroy the program code. For example: if by mistake you have pressed the "/" key press ESC to get back to the READY mode and then press F2 to enter the EDIT mode or just continue to type, or press ENTER to exit the description mode.

Type FN???? (the file name is ?????) and press ENTER, the next menu appears:

Down Up Next Previous Edit Save

Using the first 4 menu items the user can scroll through the description.

Press <E> to enter the EDIT mode, when you are finished editing or typing the description file press ENTER to return to the previous menu.

Press <S> to save the description file, the next prompt appears:

File name (press ENTER for no changes) -

Type the file name or press ENTER for no changes (????).

As we mentioned earlier if a description file is already exists and and you press the ENTER key only the program retrieves the file.

3.4B <N>orm_dist

Press <n> to get the next prompt:

Input the number of data points (10 minimum) - 30

Type the number of data points to create the normal distribution graph and press ENTER. First the graph appears and then pressing ESC or ENTER brings the next screen:

Calc_stat	Import_edit	Freq_dist	Norm_dist	Data_save	Graph_save	Help
Calculate	statistic	functions			[ESC]	- Previous menu
A	B	C	D	E		
=====						
1	Units		Output/Input		Memory	
=====						
4	None		0.00		0.00	
=====						
	FA	FB	FC	FD		
1	1200	1195	0.8915363214			
2	1201	1195.4666667	1.3445677103			
3	1201	1195.9333333	1.9498568574			
4	1201.5	1196.4	2.7189373405			
5	1200	1196.8666667	3.6456257607			
6	1201	1197.3333333	4.7002546304			
7	1201	1197.8	5.827027984			
8	1201.5	1198.2666667	6.9462312563			
10	1198	1199.2	8.7757199378			
11	1197	1199.6666667	9.3006679164			
12	1197.5	1200.1333333	9.4781142038			
13	1200	1200.6	9.2876566721			
14	1201	1201.0666667	8.7511833846			

The column FA contain the original list of numbers. The column FB contains the 30 data points between the minimum value in FA and the maximum value in FA. The column FC contains the propability function values multiplied by the number of sample points in the original list in the column FA.

3.4C <F>req_dist

Press <F> to get the next prompt:

Input the number of intervals (bins) - 6

Type the number of intervals (bins) to create the normal distribution graph and press ENTER. First the graph appears and then press ESC or ENTER to get the next screen:

Calc_stat	Import_edit	Freq_dist	Norm_dist	Data_save	Graph_save	Help
Calculate	statistic functions				[ESC] - Previous menu	
A	B	C	D	E		
=====						
1	Units	Output/Input		Memory		
=====						
4	None		0.00		0.00	
=====						
	FA	FB	FC	FD		
1	1200	1195		1		
2	1201	1197.33333333		4		
3	1201	1199.66666667		15		
4	1201.5	1202		33		
5	1200	1204.33333333		0		
6	1201	1206.66666667		1		
7	1201	1209		2		
8	1201.5					
9	1199					
10	1198					
11	1197					
12	1197.5					
13	1200					
14	1201					

The column FA contain the original list of numbers. The column FB contains the 6 data points between the minimum value in FA and the maximum value in FA. The column FC contains the distribution values. For example there are 33 data values between 1199.6666667 and 1202.

3.4D <D>ata_save

Press <D> and ENTER key to save the data table.

3.4E <G>raph_save

Press <G> and the ENTER key to save the graph as a .PIC file which can be printed using LOTUS PRINTGRAPH.