Contents

The TI-92 and Statistics

Bernard Cunningham
LakeVille High School, LakeVille Community Schools, Otisville, Michigan, USA
bcunning@gfn.org

Overview

The Data/Matrix Editor of the TI-92 will be used to compare subsets of a given set of data to each other and to the original data. This will not be a lecture/listen presentation. This presentation will be similar to a workshop with the participants learning/working with the presenter as we work with the given set of data. The main objective of the presentation is to develop alternative forms of assessment using the given set of data. Knowledge of the TI-92 is not mandatory.

Description

The given set of data (from the next page) will be entered into the TI-92. This will be done in two ways. The first way will be to show how to enter the data by hand. Only a few entries will be made by hand, since this is not a true workshop. The second way will be to transfer the data using the link. After the data is entered in the calculator, a discussion will be held as to how to accurately show the data using the Plot area of the data matrix editor. After a few moments of discussion, the presenter will describe how he presented the data in the classroom. The rest of the presentation will be devoted to discussing how to evaluate students knowledge of data using the given data and alternative forms of assessment.

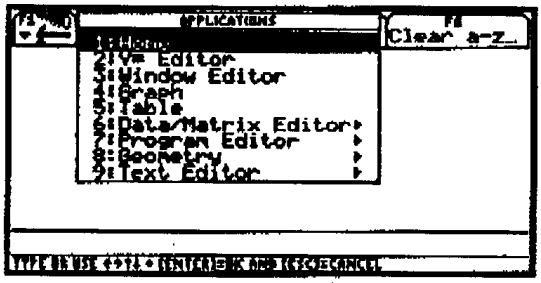
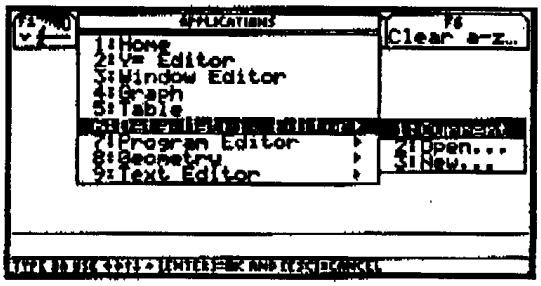
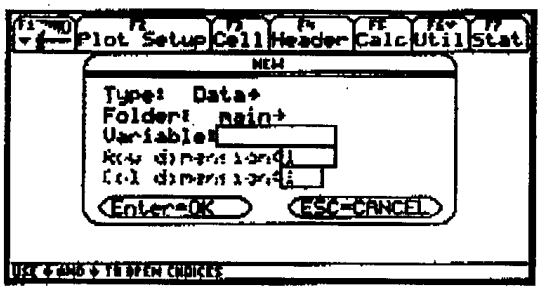
Data follows on the next page

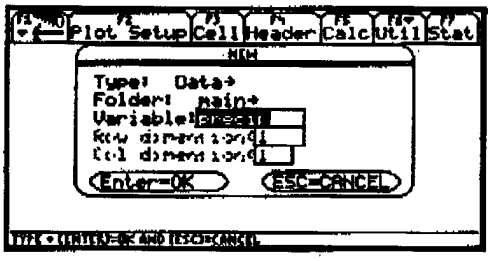
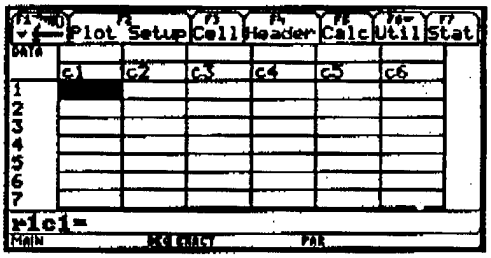
Data - Average Number of Days of Precipitation Per Year

■ West ■ Midwest ■ South ■ Northeast

Albany, NY	134	Los Angeles, CA	35
Alburquerque, NM	61	Louisville, KY	124
Atlanta, GA	115	Miami, FL	129
Atlantic City, NJ	112	Milwaukee, WI	125
Bismarck, ND	96	Mobile, AL	122
Boise, ID	90	Mt. Washington, NH	209
Boston, MA	126	Nashville, TN	119
Buffalo, NY	169	New Orleans, LA	114
Burlington, VT	154	Norfolk, VA	115
Cheyenne, WY	99	Oklahoma, OK	82
Chicago, IL	126	Omaha, NE	98
Cleveland, OH	156	Philadelphia, PA	117
Columbia, SC	109	Phoenix, AZ	36
Concord, NH	125	Pittsburgh, PA	154
Denver, CO	89	Portland, ME	128
Des Moine, IA	107	Portland, OR	152
Detroit, MI	135	Providence, RI	124
Deluth, MN	134	Reno, NV	51
Great Falls, MT	101	Salt Lake City, UT	90
Hartford, CT	127	Seattle-Tacoma, WA	156
Houston, TX	104	Sioux Falls, SD	97
Indianapolis, IN	125	Spokane, WA	113
Kansas City, MO	104	Wichita, KS	86
Little Rock, AR	104	Wilmington, DE	116

Entering the data has to be planned ahead of time to take advantage of the capabilities of the Data/ Matrix Editor of the TI-92 calculator. Given below are the description and keystrokes for opening a new Data/Matrix file.

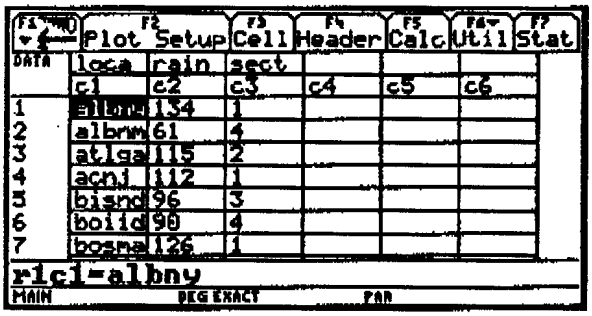
Verbal Descriptions	Keystrokes	TI-92 Display
To get into the area of the calculator that will access the Data/Matrix Editor, press the "APPS" key located near the curser arrows.	APPS	
To access the Data/Matrix Editor, press the "6" key.	6	
To open a new data file, press the "3" key.	3	

Verbal Descriptions	Keystrokes	TI-92 Display
To name the file, press two "down curser arrows" and type the name of the new file. The name chosen is "precip". Please press "ENTER" to save the name of this file	▼ ▼ p r e c i p ENTER	
Now press "ENTER" again to actually enter the data file.	ENTER	

Looking at the next calculator screen, the columns have been entitled as "loca" (short for loaction), "rain" (represents the inches of rainfall), and "sect" (short for section of the country). The data will be entered into a Data matrix with "c1" reserved for the abbrevaition of the city, Column two reserved for the amount of precipitation., and column three would hold a code number for the section of the country. For no reason, it was decided that the Northeast, South, Midwest, and West sections of the country would be coded with a "1", "2", "3", and "4". One could also use abbreviations like "ne", "s", "mw", and "w".

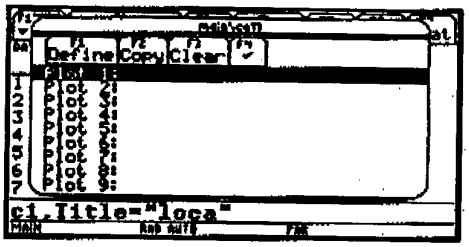
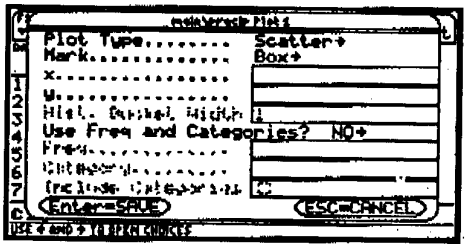
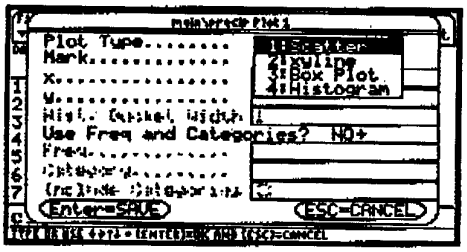
Shown below is a picture of what the first seven entries would look like.

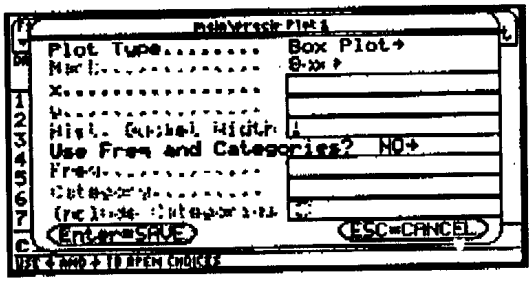
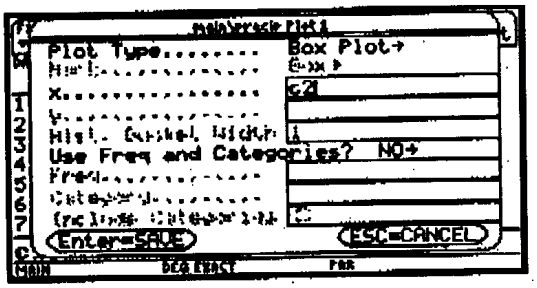
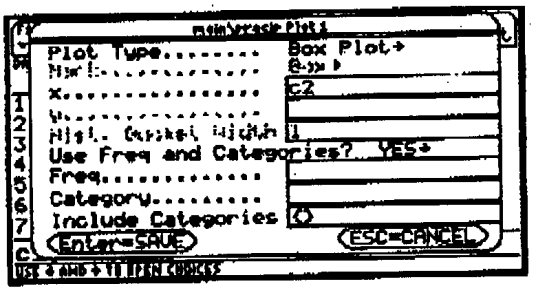
Calculator Screen



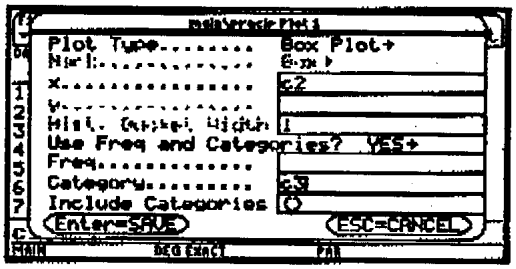
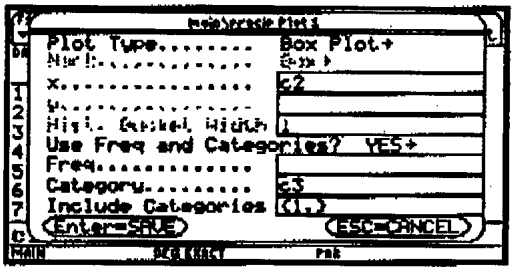
Contents

After the data has been entered, then it is time to set up the plots for displaying the data in a histogram plot. The following instructions will apply to setting up one of the plots. This example will set up the plot for only the Northeast section of the country.

Verbal Descriptions	Keystrokes	TI-92 Display
Press the "F2" key to go into the Plot Setup section of the Data/Matrix Editor.	F2	
Press the "F1" key to set up Plot 1.	F1	
Press the "right curser" once to enter into the choices for the plot setup.	▶	

Verbal Descriptions	Keystrokes	TI-92 Display
Press the "3" key to select a box plot.	3	
Press two "down arrows" and "c" & "2" to enter column 2 as the x column for the statistical data.	▼ ▼ c 2	
Press one "down arrow", one "right arrow", and "2" to change the NO to a YES.	▼ ▶ 2	

Contents

Verbal Descriptions	Keystrokes	TI-92 Display
Press two "down arrows" and "c" & "3" to enter column 3 into the Category section.	▼ ▼ c 3	
Press one "down arrow", one "right arrow", "one "left arrow", "1", and "." to select the Northeast section of the country as the category.	▼ ▶ ◀ 1 .	

The plot for the northeast section of the country is now set. Set up the other four plots in the following way:

Plot 2 will be the Southeast section of the country;
Plot 3 will be the Midwest section of the country;
Plot 4 will be the West section of the country;
Plot 5 will be the whole country.

On the next page is the description and graphics screens of each plot.

Summary

The first graphic will be a box-and-whiskers plot of all of the sections of the country and the whole data base set up in Plot 5. The whole data base is the bottom box-and-whisker. The top box-and-whisker is the northeast section set up in Plot 1. The second box-and-whisker from the top is the south section set up in Plot 2. The third box-and-whisker from the top is the Midwest set up in Plot 3. The fourth box-and-whisker from the top is the west set up in Plot 4. Look how nicely they can be compared. Each graphic shows the median of each box-and-whisker plot.