Storing Statistical Data with the TI-82 and TI-83 Graphics Calculators

Chapter Three of *Year 11 Mathematics B, A Graphics Calculator Approach* teaches students to look at data, calculate summary statistics and find the 'story' that the data has to tell. The philosophy of the authors of this textbook is that students are expected to be able to construct a desired graphical display or calculate a desired summary statistic by hand, for a small 'contrived' set of data. But once they can do this, they will use their time more productively if they then use the statistical features of their graphics calculator to produce graphical displays and summary statistics.

There are over twenty datasets in this chapter. It is inefficient for students to start each question by first typing the dataset into their graphics calculator. Better is for each student to have all of the datasets in Chapter 3 in their calculator before starting the chapter, and for those datasets to stay in the calculator memory throughout the study of this unit.

For a student using a TI-82, there is only one way to do this – store the data in programs. When a particular dataset is needed, the student runs the program, which copies the data to lists L1 to L6. The data is then available for statistical analysis.

For a student using a TI-83, there are two choices – store the data in named lists or store the data in programs. We prefer to store the data in programs for the following reasons:-
- If a class has a mix of TI-82 and TI-83 calculators, all students use the same method of accessing a stored dataset.
- All of the datasets for a single question (up to five datasets) are stored as a single file. With named lists, this would require five separate named lists.
- Program names can be up to eight characters long while list names are restricted to five characters. It is easier to make program names descriptive
- Questions that use only one list of data always have the data in list L1, those that use two lists always have the data in lists L1 and L2, etc. Being able to reference the same list name for each question simplifies the instructions that the students have to follow.

Conclusion – whether your students are using a TI-82 or a TI-83, store the data in programs!

Retrieving data from the mathematics-for-queensland.com website

To get the datasets from the website to the hard drive of a computer

The datasets for Chapter 3 of the textbook are in one file – *ch3data.82g* for the TI-82 graphics calculator and *ch3data.83g* for the TI-83 and TI-83 Plus graphics calculator. Links to these files can be found by first following these links: http://mathematics-for-queensland.com → Year 11 Mathematics B → Chapter 3. To copy these files to a hard drive:
- right-click on the file you wish to copy
- select 'Save Target As…'
- choose your directory
- click on OK.

Repeat for the other file, if needed.

N.B.   Depending upon the set-up of your web browser, you may be able to accomplish the same thing just by clicking on the link.

To get the datasets from a computer to a graphics calculator

You need the following hardware:
- black or grey Graphlink cable

You need the following program(s) installed on your computer:
- Graphlink for the TI-82,   and/or
- Graphlink for the TI-83,   and/or
- Graphlink for the TI-83 Plus

depending upon which model(s) of calculator your students use.

Run the appropriate Graphlink program. Then follow the instructions below:

TI-83 Plus   Connect a Graphlink cable to a TI-83 Plus calculator
                    Turn on the calculator
                    Select (Link, Send To, RAM)
                    Select the file *ch3data.83g*
                    Click on Add
                    Click on OK.

TI-83   Connect a Graphlink cable to a TI-83 calculator
                    Turn on the calculator
                    Select (Link, Send…)
                    Select the file *ch3data.83g*
                    Click on Add
                    Click on OK.

TI-82   Connect a Graphlink cable to a TI-82 calculator
Turn on the calculator
From the program, select (Link, Send…)
On the calculator, select (2nd, Link, Receive, [Enter]).
         the calculator screen should read 'Waiting…'
In the Graphlink software, select the file *ch3data.82g*
Click on OK.

In each case, the program files should be copied to the graphics calculator. To confirm this, press the Program key on your calculator. All of the programs (there are twenty-two programs) should be listed.

N.B.   There are many things that can go wrong during this process – the cable might not be fully pushed in, the wrong COM port has been selected, etc. This brief article cannot address all of these potential problems. If the above instructions don't work, find someone that has done something like this before and ask for help.

Using the datasets

A few examples will indicate how the datasets are named:

     E3HQ5   contains the data for Exercise 3H, Question 5
     E3J1Q1   contains the data for Exercise 3J.1, Question 1
     X313   contains the data for Example 3.13

To access the data, run the program. For example, to access the two datasets in Exercise 3H, Question 5, (the weights of the Cambridge and Oxford rowing teams) run the program E3HQ5. The data for the Cambridge team is copied into list L1 while the data for the Oxford team is copied into list L2. These lists can now be accessed in the usual way.

Creating your own programs containing lists

A very good article on how to do this is available on the web:
     go to   http://www.bbns.org/us/math/ap_stats/
     follow this link   Papers → Paper: Efficient Storing of Data in the TI-83

The paper gives instructions on how to create programs containing lists for the TI-82. The same instructions work for the TI-83 and the TI-83 Plus.