Lab 1

Getting Started with Minitab

If you are familiar with using Windows for basic applications such as word processing and spreadsheets, you'll find Minitab rather easy to use. It follows most of the point-and-click, drag-and-drop, cut-and-paste rules you are used to in other Windows applications. So if you happen to be stuck and don't know what to do next, you'll probably be safe doing what comes naturally.

Creating a new file

When you first open Minitab from the Start Menu, you will see a window titled Session and one titled Worksheet 1. Commands can be accessed from the top menu bar.

The Session window will display the text output from the commands accessed through the menu. For example, if you find the mean of a set of data, it will be displayed in the Session window. Plots will appear in their own windows. The Worksheet window includes the data and results of some data manipulations. For example, a column of data can be standardized by subtracting the mean and dividing by the standard deviation, and these standardized data can be stored in another column.

Data columns can be referenced by either the default labels C1, C2, etc., or by given names which can be defined in the second gray row at the top of the table. The first unlabeled column is for row numbers; you cannot type anything into this column or change the numbers in this column. If you need labels for your rows (names, for example), enter them in as another column. You can click in the white cells and start entering data. Every time you press enter, you will move down one row. If you need to change any of the information you entered, just click on the cell in question and retype the contents.

To save your work, click File in the menu bar and choose "Save Project As", which will save the worksheet data as well as any analysis output in the Session window. In the file name box, type your desired file name. Be sure you know where the file is being saved! Click the "Save" button to save the file.

If you are working at a university computer, you should save your work to the hard drive and then e-mail it to yourself, to a CD, to a flash drive, or save it somewhere else. Click the white box next to "Save in" near the top of the window, and then choose your saving location.

If you save your work on a university computer's hard drive, do not expect it to be there when you come back! Make sure to copy it or e-mail it to yourself before you leave. To ensure there is enough drive space for the

proper working of the installed programs, occasionally the computer people will all the delete personal files from the hard drive.

Importing a File or Data Set

Often in this course, and frequently in the real world, you will need to analyze data that have already been saved into a computer file, but not specifically into a Minitab data file. Minitab is good at reading other file formats, but you have to be careful.

1. Importing an Excel File

   Since Microsoft has been so far successful on it's way to dominating the planet, chances are good that your data will already be in an Excel file. To open an Excel file, click the menu "File / Open Worksheet". In the new window, first find the appropriate folder where the file is located, then click the white box next to the words "Files of Type". Scroll down this list until you find "Excel (*.xls)". Click on this and then choose the correct file from the big white window above. Press the "Open" button.

   One problem you may encounter when opening an Excel file is that Minitab might either delete the first row of your data, or turn the first row of your data into the column titles. To avoid this, make sure that the columns already have column titles (meaning the first row of the spreadsheet contains the titles) before you try to open the file in Minitab.

   When you are finished with the file and wish to save it, be sure to save it as a MPJ (Minitab project) file. When needed, you may also export the data from Minitab to other formats.

2. Importing a Text (*.txt) File

   To import a text file, click the menu "File / Open Worksheet". In the new window, first find the appropriate folder where the file is located, then click the white box next to the words "Files of Type". Scroll down this list until you find "Text (*.txt)". Click on this and then choose the correct file from the big white window above. Go ahead and press the "Open" button. If the results are not what you wanted, try it again, but change the import options in the Options button, and click the Preview button to see the results before selecting "Open".

   If you still can't properly open it, there is likely a more complicated method you can use. I suggest you first convert the text file into an Excel file, because Excel opens text files rather painlessly. Then use the above method to open the Excel file in Minitab.

3. Importing Other Files

   Unfortunately, I can't test all the other data formats to see if Minitab opens them well. The only advice I can give is to be sure that no data was lost in the process, especially that first row. There is no reason to panic if some of the data is missing, because you can easily put it back by adding rows or columns in Minitab.

Cutting and Pasting

When you do your homework assignments, we expect them to be well-organized and well-presented. A badly organized or badly presented assignment is torturous to read and hard to grade. Consequently, we ask you not to turn in homework consisting of mixed sheets of Minitab output and word processing.

It is rather easy to copy portions of Minitab output into your word processing program. Let's say you have a homework assignment that requires you to create a histogram and describe the shape of it. Instead of handing in one sheet with the histogram on it and one sheet with the description, or worse yet, the histogram with handwritten comments scratched in, you should paste the image of the histogram within your word processing document.

You can select text output in the Session window with the mouse. Once you have selected what you want to copy, right-click the mouse over the selection. Select "Copy". Now move to your word processing program, where a document is already open and the cursor is positioned at the location you want the histogram. Right-click the mouse, and select "Paste".

For a graph or plot, right-click on the plot and select Copy Graph from the menu. Then in your word processing program, right-click the mouse, and select "Paste". Don't be disappointed if it doesn't come out perfectly. Just make sure all the information is there.

This process can be used to copy numerical output as well, like the quantile and moment lists. Once in your word processor, you will still be able to modify the information to some extent, like changing font and size.

Use a fixed-width font (Courier) for tables of numbers that should line up, adjusting the font so they fit on the page. For example:

```
Descriptive Statistics: Energy-expenditure-(Kcal), Fat-free-mass-(kg), Subject

Variable           N    Mean  StDev  Minimum      Q1  Median      Q3  Maximum
Energy-expenditu  14  2168.5  307.4   1791.0  1889.5  2088.0  2485.5   2653.0
Fat-free-mass-(k  14   62.40  11.62    48.10   49.30   59.30   76.10    78.10
Subject           14   4.000  2.075    1.000   2.000   4.000   6.000    7.000
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