Computing Guide: Introduction to Minitab

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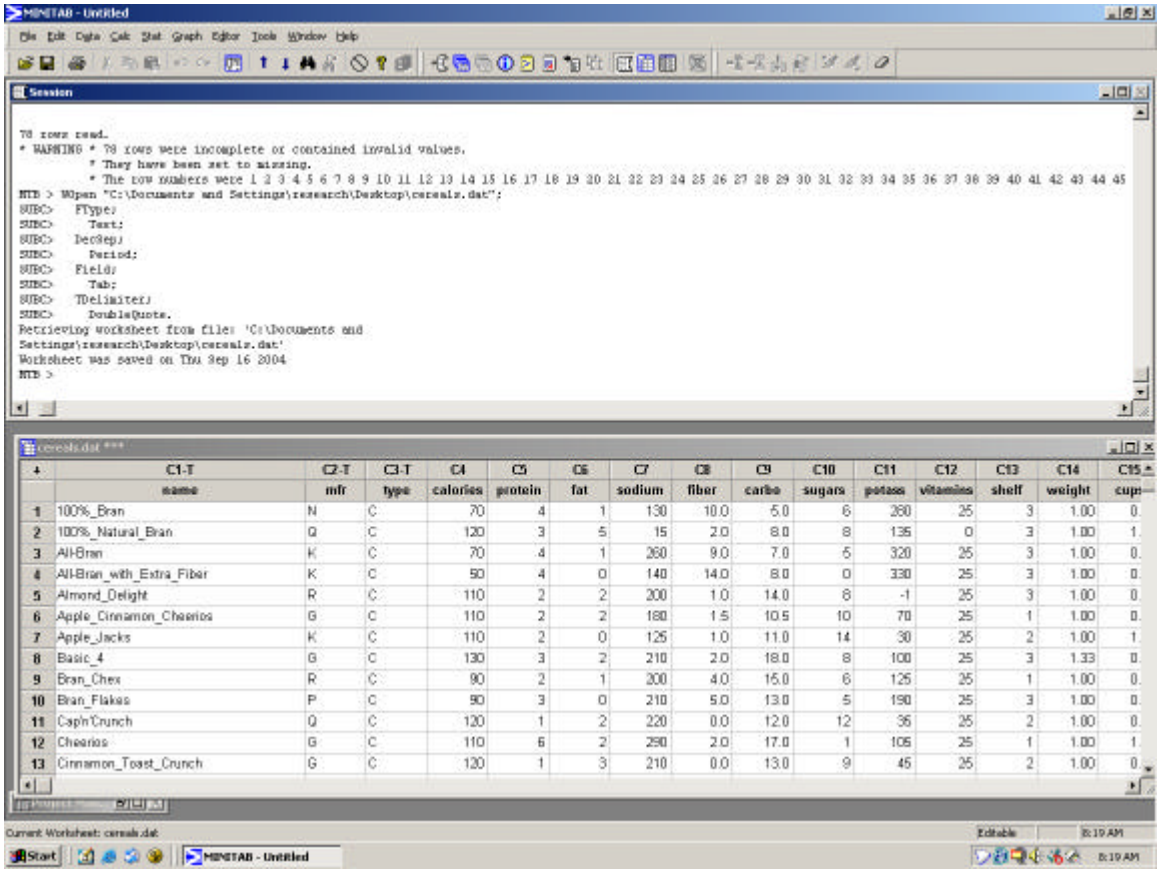
Introduction

This document provides a brief introduction to Minitab with particular focus on the needs of the first assignment. The focus will be on Minitab Release 14, but most commands should work in other versions. Minitab is a statistical package which combines many statistical routines with a graphical user interface.

Starting Minitab

When you start Minitab you get a screen that is partitioned into two windows. The *Session* window is for showing the output (and for typing in commands if you wish to type commands rather than using the menus). The other window is a *Worksheet* where data is stored and displayed.



	C1-T	C2-T	C3-T	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15
	name	mfr	type	calories	protein	fat	sodium	fiber	carbo	sugars	potass	vitamins	shelf	weight	cups
1	100%_Bran	N	C	70	4	1	130	10.0	5.0	6	280	25	3	1.00	0.
2	100%_Natural_Bran	Q	C	120	3	5	15	2.0	8.0	8	135	0	3	1.00	1.
3	All-Bran	K	C	70	4	1	260	9.0	7.0	5	320	25	3	1.00	0.
4	All-Bran_with_Extra_Fiber	K	C	50	4	0	140	14.0	8.0	0	330	25	3	1.00	0.
5	Almond_Delight	R	C	110	2	2	200	1.0	14.0	8	-1	25	3	1.00	0.
6	Apple_Cinnamon_Cheerios	G	C	110	2	2	180	1.5	10.5	10	70	25	1	1.00	0.
7	Apple_Jacks	K	C	110	2	0	125	1.0	11.0	14	30	25	2	1.00	1.
8	Basic_4	G	C	130	3	2	210	2.0	18.0	8	100	25	3	1.33	0.
9	Bran_Chex	R	C	90	2	1	200	4.0	15.0	6	125	25	1	1.00	0.
10	Bran_Flakes	P	C	90	3	0	210	5.0	13.0	5	190	25	3	1.00	0.
11	Capn'Crunch	Q	C	120	1	2	220	0.0	12.0	12	35	25	2	1.00	0.
12	Cheerios	G	C	110	6	2	290	2.0	17.0	1	105	25	1	1.00	1.
13	Cinnamon_Toast_Crunch	G	C	120	1	3	210	0.0	13.0	9	45	25	2	1.00	0.

Note to make it possible to type commands into the Session window you need to do the following:

`Tools > Options`

Then select

`Session Window > Submitting commands`

Then click “Enable” for the command language.

Reading in the data

To read in the data

`File > Open Worksheet`

Then select navigate to the data file location. Make sure that you set the file type to “Data (*dat)”. Clicking ok should open the data into the worksheet.

Histograms, Stem-plots, Boxplots and Scatterplots

To create a histogram you can either use the menu option

`Graph > Histogram`

`And then`

Alternatively type in commands at the command line. eg

```
MTB > Histogram 'calories';
SUBC>   Bar.
```

A histogram of relative frequencies would be done using the following commands

```
MTB > Histogram 'calories';
SUBC>   Density;
SUBC>   Bar.
```

Or in the Histogram dialog click on “Scale” and then the “Y-scale type” tab and change the type to density. One thing you might want to do is change the number of bins. The best ways of doing this (at least in Minitab Release 14) is to use the command line when you create your histograms eg

```
MTB >  Histogram C1;
SUBC> Density;
SUBC> Bar;
SUBC> Nintervals 3.

MTB > Histogram C1;
SUBC> Density;
SUBC> Bar;
SUBC> Nintervals 50.
```

Stem and leaf plots are also in the graph menu. Via the GUI

Graph > Stem-and-Leaf

Or at the command line

```
MTB > Stem-and-Leaf 'potass'.
```

Boxplots can be done of a single variable by itself or stratified by the values of a second variable. In the GUI:
`Graph > Boxplot`

At the command line either

```
MTB > Boxplot 'sugars';
SUBC>   IQRBox;
SUBC>   Outlier.
```

or

```
MTB > Boxplot ( 'sugars' ) * 'shelf';
SUBC>   IQRBox;
SUBC>   Outlier.
```

Scatterplots can also be done from the graph menu or at the command line

```
MTB > Plot 'calories'*'sugars';
SUBC>   Symbol.

MTB > Plot 'calories'*'sugars';
SUBC>   Symbol 'mfr'.
```

Random Data

Random data can be generated from various distributions by using the options in the

`Calc > Random Data`

submenu. At the command line

```
MTB > Random 100 c1;
SUBC>   Normal 0.0 1.0.
```

Will store 100 random numbers in column c1 from the normal distribution with mean 0 and standard deviation 1.

```
MTB > Random 1000 c2;
SUBC>   Exponential 1.0.
```

Will generate 1000 random numbers from the exponential distribution with mean 1 and store them in column c2.

Getting more help

There is plenty of documentation about Minitab. Which is accessible from the Help menu. Many of the dialog boxes also have context specific help pages (accessible by clicking Help buttons on the dialogs)