

Minitab macros: what they are, how you use them and where to put them.

What are Minitab Macros?

Minitab macros are collections of Minitab code that allow the user to implement in a single command procedures and techniques which would otherwise require many separate Minitab commands to be entered. A macro has a name which is the means by which the user invokes the macro.

The code for a macro is held in a file, which needs to be saved in the right place on your disk. The files containing macros specially written for the course can be downloaded from the appropriate page. Once they have been saved in the right place they can be run by typing the correct command in the Session Window.

The steps you need to take to do this will now be explained in more detail. In order to be definite the explanation will be in terms of the macro called **sampmns** needed for question 3.

Where to save the macro file (for those who have installed Minitab on their own computer)

When you right-click on the link to the macro for question 3 from the main page for Week 6 and chose 'Save Target As...' you will obtain the usual Windows dialogue box asking where a file with name **sampmns.mac** should be saved. You must save the file with this name and by far the best place is the default macro directory. This is a sub-directory (called MACROS) of the main Minitab directory. The main Minitab directory is where you chose to save Minitab when you installed it. If you installed to C:\MINITAB 14, then C:\MINITAB 14\MACROS is the default macros directory. If you installed to d:\Program files\Minitab, then the default macro directory is d:\Program files\Minitab\macros. In what follows it will be assumed that you have managed to copy the macros to this directory. If you cannot manage to find this directory, or you do not have access to it, there is an alternative which is described in the final section of this note.

Where to save the macro file (for those using Minitab over RAS)

When you right-click on the link to the macro for question 3 from the main page for Week 6 and chose 'Save Target As...' you will obtain the usual Windows dialogue box asking where a file with name **sampmns.mac** should be saved. You must save the file with this name and while the best place is the default macro directory, you are running Minitab on a remote machine and you do not have access to this directory on this machine. Over RAS you do have access to your H: drive on the University Windows system. Probably the best place to keep the macros is in a folder you create on this drive – H:\MACROS would be ideal.

How to run the macro

(This section assumes the macro is in the default macro directory but please read the section even if you have not saved your copy of the macro there)

In order to run the macro you need to click in the Session Window, next to the Minitab command prompt, i.e. the 'MTB >' which appears in this window.

It is possible that the command language is not enabled in your installation and that no 'MTB >' appears in the Session Window. If this is so, refer to Appendix to this note.

Now type

```
%sampmns 15.6 2.3 25 2000 c6
```

and the macro will run. There are several comments which should be made.

- 1) Note the '%' sign at the start of the command. If you do not enter this Minitab thinks you are entering an ordinary Minitab command, not a request to run a macro, and as there is no Minitab command called `sampmns`, you will get an error message.
- 2) Several numbers have been entered after the command `%sampmns`: those shown are just examples chosen for illustration and different values can be entered. In order to understand what these numbers are, you need to be told what **sampmns** actually does.
- 3) **sampmns** is a macro which repeatedly selects a sample from a Normal population, calculates its mean and stores all the sample means in a column. If Minitab is to do this, then it is clear that the user must provide the following information
 - i. the mean and SD of the Normal population
 - ii. the size of each sample
 - iii. how many samples are to be drawn
 - iv. which column should hold the resulting means

In the above example, the first two numbers (15.6 and 2.3) tell Minitab to sample from a Normal population with mean 15.6 and SD 2.3. The next number tells Minitab to select samples of size 25 and the next number tells Minitab to draw 2000 such samples in total. The last item, `c6`, indicates the column where these 2000 sample means will be stored. Any legitimate items can be entered (so, e.g. a negative SD, a fractional sample size or a final item that is not a column or column name will give errors).

The list of four numbers and a column name is technically known as the 'argument list' of the macro. Different macros, which will be doing different things, will obviously require different argument lists.

How to amend the above if the macro is not in the default macro directory

This situation can arise for several reasons, including

1. You do not have access to the default macro directory, perhaps because you are running the macro over a network or over RAS

2. You have installed Minitab on your own machine but cannot remember where you installed the program or cannot now find it.

Whatever the reason, you can still run macros in Minitab, it just requires you to do a little more typing than the method outlined above. What you *have* to know is where you have saved the macros you have downloaded. Suppose you have saved **sampmns.mac** in C:\temp, then the above procedure still works with the minor amendment that you need to type

```
%c:\temp\sampmns 15.6 2.3 25 2000 c6
```

This form explicitly tells Minitab where the macro is located. You can put the macro anywhere, but clearly it is more convenient to save the macros in a directory (or folder, the two terms are synonymous, at least in this course!) with a short name.

A note for RAS users: it is suggested that you save macros on your H: drive rather than on your own machine. As Minitab under RAS runs on the remote computer, it is better if that machine can get access to the macros as fast as possible – putting them on your own hard drive will force Minitab to go over the telephone lines to get its instructions!

A final tip

Some users have occasionally had trouble running macros because they have inadvertently downloaded them with the wrong name. If you use Windows then it is possible that you think you have saved **sampmns.mac** to a particular location but Minitab refuses to see it. One cause of trouble is that sometimes the file is actually called **sampmns.mac.txt**, which Minitab will not recognize as a macro. This is because when downloading Windows has decided you are using a text file and has unhelpfully appended the '.txt' extension. Many implementations of Windows no longer display the extensions of filenames by default, so this can happen and you do not realise. If you have trouble, do check the filename of the downloaded version of the macro. In Windows (*not* Minitab) display the file in its folder, make sure that the folder is showing file extensions (click on **Tools, Folder Options...** and the **View** tab to check) and right-click on the file and then select Properties. If you have picked up an errant '.txt' extension, go back to the icon of the file and right-click again and then rename the file, this time omitting the '.txt' part.

Appendix: the Session Window and the Minitab command language

Before using the Session Window you must ensure that the command language is enabled. If when you start Minitab the last thing in the Session Window is the command prompt

```
MTB >
```

then the command language is enabled. If the prompt is absent then you should enable the command language. To do this, ensure that the Session Window is the active window, click on **Editor** then make sure that **Enable Commands** is ticked.