Computing Guide

BRING THIS GUIDE TO EACH COMPUTING PRACTICAL

1   The PC Laboratory

1.1   Username and Password

To login to the machines in EM126, you need to know your username and password. These are exactly the same as you use to access your University email account. If have forgotten your username or password, you need to contact ITS directly.

1.2   Technical support

Technical support for the computing laboratory is provided by ITS. If you experience technical difficulties, for example, you cannot log into a computer or the printer will not work, you should call the helpdesk by dialling **1 on the telephone provided. (Please note that ITS are unable to answer questions on the use of specific software or questions about class work.)

1.3   Printing

In Semester 2 2003, students are provided with a free print quota of 100 pages. Once this quota is exhausted, additional printing will be charged at 10c per page. For assistance with the print charging system, please contact the Card Centre in Hughes Plaza.

1.3.1   Managing your print quota

- Don't print material from MyUni indiscriminately: the handouts given in class will be posted on MyUni in case you lose your original copy.

- Make sure you don't print out the large datasets! Some of the assigned work will require you to analyse large datasets and occasionally to print out plots etc, but this will not be more than a few pages.

- Be careful not to press the `Print` button repeatedly. Occasionally it may happen that the printer is not working, or is slow to respond if many people are queuing files to the printer - in this case nothing appears to happen. If the printer really isn't working, you should contact the ITS help desk by dialling **1. Do **not** try to print your document repeatedly. The most likely outcome is that several copies will print when the printer is fixed or the queue has cleared, and you will be charged for all of them.

1.4 Disk Storage

Students are allocated a quota of 50Mb permanent disk storage on the `V:\` drive. You can store files up to this limit on the `V:\` drive.

2 General: running R for Windows

To start R for windows, you can click on the `R1.7.1` icon on the desktop if available, or, click on the `Start` button and then under `Programs>R`, choose `R1.7.1` (the pic below is from version R 1.4.1).

The `RGui` application should then appear as shown on the next page.
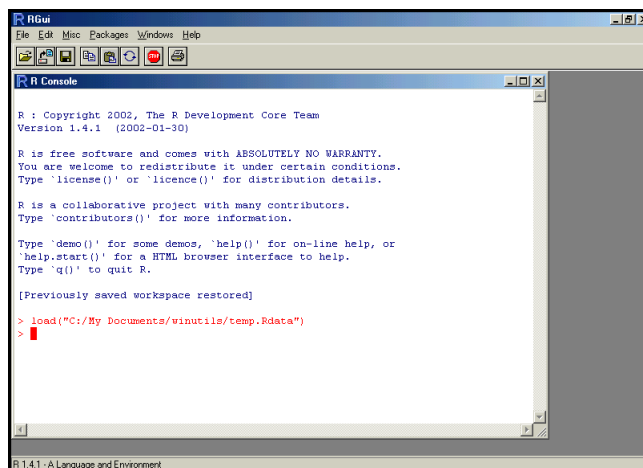
If the `RGui` window does not occupy the full screen, then click on the `maximize` button on the top right corner of the window.

You can also enter R by clicking on an existing `.RData` file, as described in the next section.

3   Loading the .RData file

For most of our practicals, there will be a prepared `.RData` file that can be downloaded from MyUni into your own directory. These files will usually have a prefix, for example, `intro.RData` for the the first introductory session: download this file now, double click on the file and R will open.

Labelling the `.RData` files is a good way to keep your work for different Statistics courses and the practical sessions within a course separate.

3.1   Using Help

Various help facilities are available in R for windows.

- If you know the name of the function, but need more information, you can type `help` in the R console. For example, to get help on the list `ls()` function, you can type
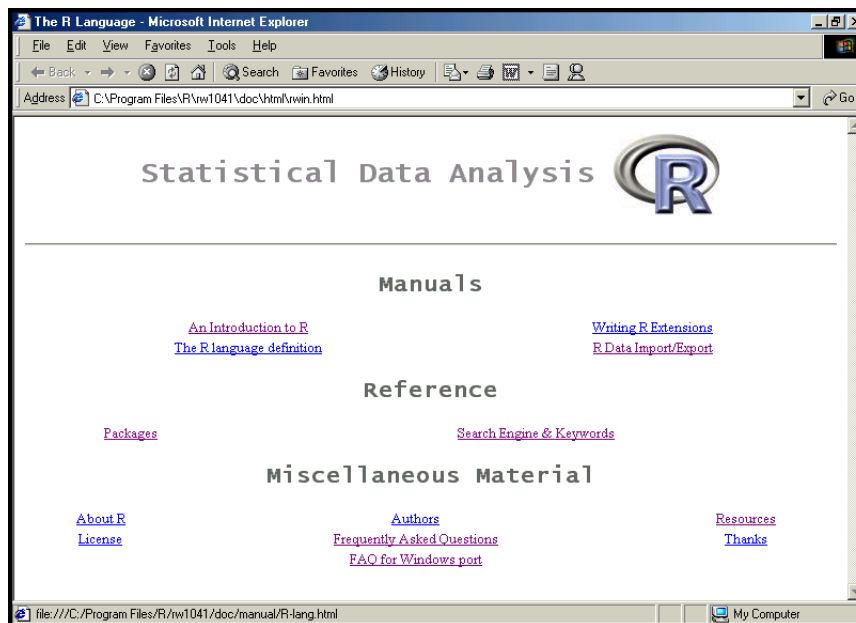
  ```
  > help(ls)
  >
  ```

  This will open a window containing information about the functions. Unfortunately you need to know the name of the function to be able to use this facility.

- A large amount of documentation is also available via the `Help` drop-down menu.
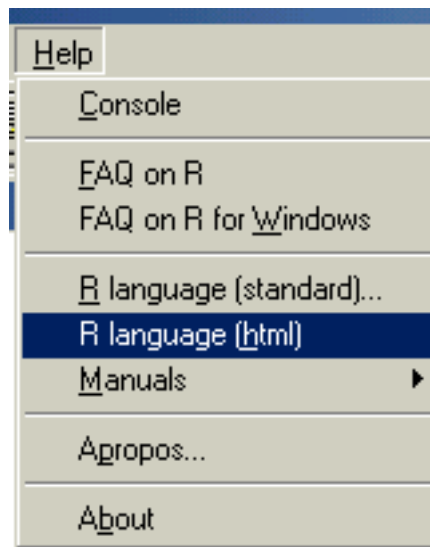
- The R Language(html) entry opens the main page in the html version of the help system.

This page contains links to many useful resources including a search facility, an introduction to R, the manuals and, if you are connected to the internet, the FAQ sites.

- On this and other systems,

  ```
  > help.start()
  >
  ```

  will take you to the R help site.

- R is freely available, and you may find like to download it onto a machine at home. The installation is system dependent (PC, Mac, etc) and the details are available from the main Comprehensive R Archive Network (CRAN) site at `http://cran.r-project.org`

  It has a number of mirror sites worldwide, which may give faster download times.

4   Command line editing

The command line editing feature in the R command window can be very useful.

- Previous commands can be recalled using the ↑ key.

- The cursor can be positioned within the command using the ← and → keys as necessary.

- The `delete` and `backspace` keys can be used to delete unwanted characters.

- New characters can be typed from the keyboard as usual.

- When the command has been edited, press the enter key to execute it.

For example, if you have typed the command `cyst.fibr$age` and get an error, you can enter the correct command `cystfibr$age` simply by recalling the previous command and using the arrow key to delete the dot. Similarly, you can enter the command `cystfibr$sex` by recalling the previous command and changing `age` to `sex`.

Cut and paste functions are also provided in the `Edit` drop-down menu.

5   Saving your graphs

Histograms and other graphs can exported from R in various formats (such as postscript or JPEG) to be used in other documents. This can be done as follows.

1. Create the desired graphs by typing commands in the R console.

2. When you are happy with graph, click anywhere on the `R Graphics` window to bring it to the foreground. The menu bar will now appear as follows:
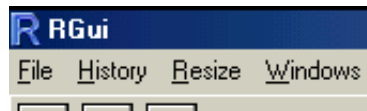

3. Select the `Save as` item from the `File` drop-down menu and choose the required format:
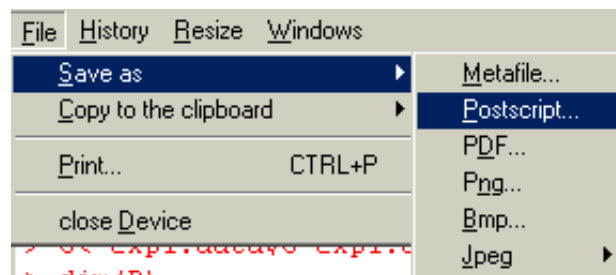
   (a) Postscript files are suitable when high quality graphics are required but tend to be large and may require special software to view.

   (b) JPEG files will not produce the same quality but tend to be smaller and easier to handle.

   (c) Both formats can be inserted directly into Word and re-sized as necessary, but postscript figures are usually not visible on the screen.

   (d) Other formats are also available.

4. Choose a name and folder for the new file and click on the `Save` button.
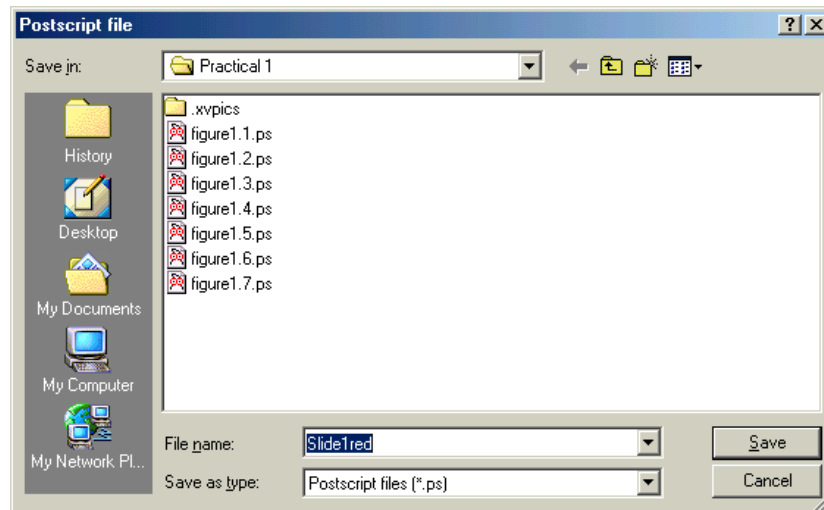
5. A new file containing your graph in the specified format should then have been created.

6   Saving commands and the .RHistory file

You can save the latest version of the `.RData` file you are working on at any time by typing

```
>   save.image()
```

You can give the file a new name or prefix at this point if you wish.
To quit R, type

```
>   q()
```

and it will ask you if you want to save the workspace as for `save.image()`.
An `.RHistory` file is automatically created which contains a history of all the commands you used in the session.

7   Laboratory Rules

1. These machines are for study-related use only.

2. You must log in using your University username and password.

3. You must not reveal your username and password to any other person or let them use your account.

4. Food and drink are strictly prohibited in the laboratory.

5. The laboratory is available for private study during office hours except when classes are scheduled. If the staff member in charge of a scheduled class asks you to leave, you must do so immediately and quietly.

6. This facility and your account are maintained by the University's Information Technology Services division (ITS). It is your responsibility to make yourself aware of any other conditions imposed by ITS and to comply with those conditions.