

Hints on Report Writing

The following are suggestions on how to write a good practical report. Although your assessment will be entirely based on your answers, a well written and structured report will help you provide substantial and comprehensive answers, given that your work with **R** is correct. You will not be penalised if your report does not follow these guidelines.

(1) The parts of the report

A good report should, in general, consist of the following sections (in that order)

- (a) Scientific Summary/Abstract: This is optional, mostly used in more formal works. However, it is useful to include an abstract in your reports, both for you and your markers. This is a very brief summary of your report.
- (b) Introduction: An introduction to the problem(s). Do not repeat the questions from the practical handout, but rather state the main objectives of your analysis.
- (c) The Data: Briefly introduce the reader to the data. Do not put the raw data in your report. If possible include some useful EDA (Exploratory Data Analysis) in this part e.g. simple plots or summary statistics.
- (d) Methodology: Briefly describe the methods you use to analyse the data. Since in most cases these methods are covered in the lecture notes you will not have to spend too much time on this part. Unless you are using something entirely different than the material shown in lectures, all you have to do is simply state which methods you use with no further explanation. Always assume that the reader is at least as familiar with the methods as you are.
- (e) Analysis of the Data: The most important section of your report. This can be divided further into subsections, where each section concerns one (or more) question(s) of the practical. The questions will be explicitly stated in the practical handout. Here you present all your analyses, results and inference. The work regarding this section will be carried mostly, if not exclusively, in **R**.
- (f) Conclusion: Summary of results and conclusion.
- (g) Appendix: This can be used to include the **R** commands and code you used (see below).

(2) **R commands and code:**

You should better avoid using **R** code in the main body of the report. Prefer to include it in an appendix, together with brief comments e.g.

```
>plot (x,y) # scatterplot of x against y.
```

If you are using a more complicated **R** code than a simple **R** command (e.g. an algorithm or a function you wrote on your own) prefer to give the pseudo-code in the main body and the code in the appendix. However sometimes a question may be explicitly asking for your code. In this case you can have the code in the main body of your report.

(3) **R output**

R output may be used directly from the command window (copy/paste) if this is long e.g. a matrix or table. If the result is just a couple of numbers there is no need to copy from the command window; just write the numbers.

(4) **Plots and tables**

Plots (especially) and tables are an integral and useful part of any report. With a single plot you can show things that may otherwise need pages of text to describe. Include any plot you deem useful and relevant to the problem. However do not overdo it. For example do not include plots that essentially show the same thing or plots that have nothing to do with the problem.

(5) **Report length**

There is no explicit answer for that. This depends on many factors; font size, line spacing, number and size of plots etc. Assuming you use normal font size aim somewhere around 10 pages including plots, tables and **R** commands. Usually anything more than 15 pages means that you included some things that were not needed in your report. These numbers are not rigid though. Your main concern should be answering all the questions asked and not the length of your report.

Some more tips:

- (1) If you are using colour in your plots make sure you print your work using a colour printer.
- (2) When mentioning a figure or table in your text instead of referring to it as “the figure at the top of the next page” you can number your figures and use captions eg. place something in the lines of “Figure 1. Number of neonatal deaths per year in Japan” under your figure and then in your text you can say: “As can be seen in Figure 1....”.
- (3) You should number your pages, especially if you are referring to page numbers in your text.
- (4) When writing a statistical report the work ”significant” should actually mean that you have performed some form of hypothesis testing. Alternatives are “considerable’, “substantial” etc.
- (5) An important reminder: You must not copy whole sentences (or paragraphs) from published papers [or any other source]. You need to reference your sources and if you are using exactly the same phrases then you need to use quotation eg. As Bruckner, Subbaraman and Catalano (2011) note, “Unlike many Asian societies, Japan has no apparent cultural preference for male birth”.
- (6) Do not squash, squeeze or change the shape of your graphs. Also, they should not be tiny and they should be centred and of the same dimensions.
- (7) Font size should be at least 11pt in word.
- (8) Proof-read your work. Not everything is picked up from the spell-checker (which of course you should always use) eg. combing, statically, etc.
- (9) We got, I got, get rid of, super small, etc. are too informal for reports.
- (10) Always start new sentences with a capital letter.