LaTeX Induction

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September 2013, ver. 1.1

Abstract

This document guides you through a number of steps to help you familiarise yourself with the LaTeX typesetting system and the standard report template used for coursework and report submission. It is intended that you self-learn LaTeX, and this indcution exercise is an opportunity for you to start this process with supervision and support in the lab. As such this is a formative task that is not directly assessed. The report you produce will serve as a template for use with Exp 17. The deadline for submission of this report is **midnight on Friday October 11th.**

Contents

> Follow the instructions below, working independently where possible. If you are about to run out of time, skip directly to the final step.

1 Download report template from VITAL

We will be using a uniform lab report template. Go to the VITAL webpage for your laborator module (ELEC222 or ELEC273) and download the lab report template. If you are not registered on either of these courses, you can download the lab template from `http://pcwww.liv.ac.uk/ ~wax`. This will be a `.zip` archive consisting of a `.tex` file, a `.bib` file and a `.jpg` file. Extract these files from the `.zip` archive and save them somewhere.

2 Create online LaTeX account

There are several free LaTeX distributions and editors; on campus you can install MikTex, but to get started I suggest you sign up to use the free online LaTeX editor and compiler at www.sharelatex.com. Create a free account on this site, and create a new blank project called `Exp 17`.

Click on the `Upload` icon and upload the three files that you downloaded from VITAL. Make sure your main working file is the report template `TemplateA.tex`. Rename this to `Exp 17.tex`, and modify the "root document" in the `Settings` section to reflect this.

3 Compile and preview PDF output

Click on the `Recompile` button to compile your `.tex` file and preview the output. You should see a preview of a report template (you may need to install Adobe Reader for this to work). You can hide or show the bookmark pane on the left of the preview pane. Click on Logs to see the log of compilation errors.

4 Personalise your report

Go back to your `.tex` file and begin personalising your report by first changing the title to "Experiment 17 - Experimental Error Analysis". Add your student ID, group number and module code in the indicated locations in the `.tex` file (do NOT add your name, as the report will be marked anonymously). Now compile your report and preview the result. Is it as you expected? Notice how you don't need to save - it saves your source code automatically.

5 Complete plagiarism & collusion declaration

Immediately after the Abstract, there is a box for you to write out a statement concerning plagiarism and collusion. Take a few minutes to find the University's **Code of Practice on Assessment, Appendix L** online and acquaint yourself with what constitutes plagiarism, collusion and embellisment/fabrication of data, and the penalties that these offences incur. After doing so, read the declaration at `http://pcwww.liv.ac.uk/~wax/downloads/declaration. png`, and if you agree with this, type it out word-for-word, in the Declaration section beneath

the abstract. Compile your work and preview the results, going back to correct any errors that may appear.

6   Add some structure

In the Introduction section, add a sub-heading for Objectives and another for Theoretical Background, using the `\subsection{}` command.

7   Add document components

You may need to look around online to find resources to help you with the following sections; there are some useful links in the Resources section at the top of the web page.

7.1   Footnote

Use the `\footnote{}` to add a footnote to your text.

7.2   Symbols

Create a numbered list using the `enumerate` environment, duplicating the following text verbatim:

1. The area of a circle is πr^2.

2. The value of the gain β is 100 ± 0.1

3. The resistance is $1000\Omega \pm 10\%$

4. The solution to $\sqrt{x} = 5$ is $x = 25$.

5. Evaluate the sum $\sum_{i=0}^{n} i^2$

6. One form of Ohm's Law is $I = \frac{V}{R}$.

7.3   Equation

Reproduce the following numbered equation (there are online LaTeX maths editors that can help with this):

$$\frac{d}{dx}\left(\int_0^x f(u)\,du\right) = f(x) \tag{1}$$

Use the `\label{}` and `\ref{}` commands to refer to the above equation in your text, as in "...this is shown in Equation 1".

7.4   Table

Reproduce the table of transistor voltages from the Exp 17 lab script.

7.5   Figure

Insert a figure of anything you like, of width 8cm, and with a descriptive caption. Use the `\label{}` and `\ref{}` commands to refer to figure in your text, as in "...this is shown in Figure 1".

7.6   Citation

Edit the `MyRefs.bib` file and edit one of the references, replacing it with any other reference of your choice. Then use the `\cite{}` command to mention a citation to this reference in your text in `Exp 17.tex`.

8   Save and Upload

Once you have completed these steps and have familiarised yourself with the main components of a laboratory report written using LATEX, save your PDF file with a filename in the following format: `Name_SURNAME_17.pdf` (for example, `Waleed_Al-Nuaimy_17.pdf`, and upload this file to VITAL under "LATEX induction report". This constitutes formative assessment, and will not be assessed. It is intended to help prepare you for the preparation of the report for Exp 17. You may use today's report as a starting point for the full lab report for Exp 17.

Feedback (LaTeX Induction Session):

If you have any feedback on your induction session (e.g. timing, difficulty, clarity of script, demonstration ...etc) and suggestions to how the session may be improved in the future, please write this in the space below. This feedback is important for future versions of this script and to enhance the laboratory process, and will not be assessed. If you wish to provide this feedback anonymously, you may do so by detaching this page and submitting it to the Student Support Centre (fifth floor office).