Unix for Telecommunications

Portfolio Task – P-Lab-02-LaTeX
Pass Level Task

I. Introduction

In this lab you will explore the use of the LaTeX application to prepare documentation. LaTeX is a form of markup language for generating documents and is the traditional means of writing reports under Unix. LaTeX is also available for use under Windows and is free software.

II. Purpose

To gain and/or enhance the following practical skills:

- Generate a PDF document in **IEEE conference format** using LaTeX
- Understand how LaTeX works
- Include basic formatting elements using LaTeX
- Learn how to generate documents with LaTeX when provided a document class file

III. Preparation

You can prepare for this lab by reading some of the LaTeX documentation available at http://www.latex-project.org. A LaTeX compiler has already been installed onto your RULE system.

IV. Methodology

A. LaTeX Introduction

Examine the LaTeX web site listed above and explore the answers to the following questions:

1) Consider the possible advantages of using LaTeX to generate documentation over say a product such as Microsoft Word?
2) What is the purpose of the LaTeX preamble?
3) What are LaTeX packages and how are they included?
4) How do you generate bulleted/numbered lists?
5) How do you create tables under LaTeX ?
6) How do you insert images into a LaTeX document?
7) Why does the image move around the document under LaTeX s control?
8) How do you add a caption to a table/figure?

B. Generating Documents

1) Investigate the functionality of the programs (`latex`, `pslatex`, `pdflatex`, `dvips` and `ps2pdf`)
2) How do you go about generating final PDF documents using each of the three ***latex** commands

C. LaTeX Styles

1) Download the IEEE LaTeX template from https://www.ieee.org/conferences_events/conferences/publishing/templates.html (**Note:** You will need to use *IEEE conference template*, not the templates for journals.)
2) Put the templates into your LaTeX document source directory
3) How do you modify your document to generate using the IEEE style?
4) Where can you install the styles such that they are available to all users?
5) Did this previous step work? Why not?
6) What else do you have to do to make it work?

D. Labels, Referencing and Citation

1) What is the purpose of LaTeX `\label` command?
2) How do you automate references to tables/figures throughout your document ?
3) How does LaTeX manage references and citations?
4) What is the necessary LaTeX compile cycle when you add a new reference to your document?

V. Assessment

The due date for completion of practical work is **11:00pm**, exactly **six** days after your scheduled class.

Note: *The nominated submission day/time holds regardless of whether that day is a non-teaching day or public holiday*

To complete this lab you need to submit (to Doubtfire) an **IEEE conference** formatted PDF document generated by LaTeX that contains each of the following elements:

1) Title
2) Author name
3) Abstract
4) Section
5) Sub-section
6) Itemized list
7) Bullet list
8) Image/figure (including numbering and referencing)
9) Table (including numbering and referencing)
10) One reference cited in the text

A. Completion of task in Doubtfire

You will need to upload your LaTeX generated IEEE-formatted PDF document containing all the required elements to Doubtfire portfolio before the due date.

B. Tutor Discussion

In order for the submission to be marked as complete, you must discuss your work with the tutor.