

UNIVERSITY OF OTAGO

DEPARTMENT OF COMPUTER SCIENCE

COSC4x0 PROJECT REPORT

Your awesome project title

Author:

John SMITH (555555)

Supervisor(s):

Dr. James SMITH

Dr. Frank LEE

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Abstract

An abstract summarises, in one paragraph, the major aspects of the entire work. It usually highlights the overall purpose/aim of the project, the research problem(s) studied, the approach and the results.

1 Introduction

Introduce the project, its major aims and summary of the findings (try not to just repeat the abstract). For example, the purpose of this document is to provide a template for your report with examples of commonly used \LaTeX commands and features. Naturally, your introduction should not be as brief as this.

2 Background

Typically, introduction will be followed with a section providing the background for the project. This often means a bit of literature review or explanation of the fundamental concepts/terminology. This section has a dual purpose:

- to provide enough information for the readers, who might not be an experts in your field, so that they can understand everything that follows - methods, results, etc.;
- to demonstrate that you have gained a sufficient level of competency in the topic.

Don't forget to cite the sources of your information. For instance, a reference for \LaTeX can be found here [1]. If you were interested in Computer Vision you might want to take a look at this article [2]. If you want to cite two related document at once, you can do it like so [2, 3].

3 How to compile \LaTeX

The remaining sections should present what you have done in your project including the results and analysing. For this document this will be a demonstration of how to use \LaTeX in order to create your report.

Item	Quantity
Widgets	42
Gadgets	13

Table 1: An example table.

\LaTeX documents are prepared using markup language and need to be compiled to produce pdfs. On a macOS you need to download and install [MacTeX](#). Then, using a program like [TexShop](#) (free), or [Texpad](#) (awesome, but not free) you can edit and compile a .tex file into the .pdf.

4 \LaTeX markup examples

4.1 Sections

Use section and subsection commands to organise your document. \LaTeX handles all the formatting and numbering automatically. Use `ref` and `label` commands for cross-references.

4.2 Comments

Comments might be useful during the writing process, as reminders or questions to your supervisor (who should get a chance to comment on your report). Comments can be added to the margins of the document using the `\todo{}` command, as shown in the example on the right. You can also add inline comments too:

This is an inline comment.

Here's
a com-
ment
in the
mar-
gin!

4.3 Tables and Figures

Use the `table` and `tabular` commands for basic tables — see Table 1, for example. You can include a figure (JPEG, PNG or PDF) with the `\includegraphics` command as in the code for Figure 1 below.



Figure 1: This is a figure caption.

4.4 Mathematics

L^AT_EX is great at typesetting mathematics. Let X_1, X_2, \dots, X_n be a sequence of independent and identically distributed random variables with $E[X_i] = \mu$ and $\text{Var}[X_i] = \sigma^2 < \infty$, and let

$$S_n = \frac{X_1 + X_2 + \dots + X_n}{n} = \frac{1}{n} \sum_i^n X_i$$

denote their mean. Then as n approaches infinity, the random variables $\sqrt{n}(S_n - \mu)$ converge in distribution to a normal $\mathcal{N}(0, \sigma^2)$.

4.5 Lists

You can make lists with automatic numbering ...

1. Like this,
2. and like this.

...or bullet points ...

- Like this,
- and like this.

5 Conclusion

Concluding remarks. Send the pdf (not the *.tex file) to your supervisor for comments (as early as possible). Don't forget to change the `\usepackage[draft]{cosc4x0style}` setting to `\usepackage{cosc4x0style}` to produce the pdf for the final submission.

References

- [1] Michel Goossens, Frank Mittelbach, and Alexander Samarin. *The L^AT_EX Companion*. Addison-Wesley, Reading, Massachusetts, 1993.
- [2] Nabeel Khan, Brendan McCane, and Steven Mills. *Better Than SIFT?*. Machine Vision and Applications, 26(6):819–836, 2015.
- [3] D. G. Lowe. *Distinctive image features from scale invariant key-points*. International Journal of Computer Vision, 60, 91—110, 2004.

Appendix A Some extra things

If you have anything more to add such as:

- not essential details - things that might be too much for first time reading, or could be distracting from the main points...but are still important for reproducibility or deeper understanding
- work that was done in the project but doesn't go with the

Appendix B Aims and Objectives

Your last appendix include your original Aims and Objectives. If the original aims and objectives have changed, specify the original and revised aims and objectives in separate sections. If you used the L^AT_EX template provided for your Aims and objectives document, just copy the `\paragraph{Aims}` and `\paragraph{Objectives}` sections and paste them here.

Original

Aims Here you are describing the term goal of the project. What do you want to achieve by the end? What is the ultimate goal of this work? For example, the primary aim of this document is to have students produce suitable aims and objectives for their COSC480/490 project. While the aims and objectives documents is not an assessed deliverable, a clear definition of what is to be done, and a bit of planning of how it is to be accomplished is paramount to the project's success. It is important to establish the scope of the project.

Objectives Objectives list the milestones that you need to achieve in order to achieve the projects aim(s). It's a rough plan for what needs to happen in what order. It's best to list the objective in bullet point form. For many projects the structure to these objective might follow the following pattern (objective names are just examples – you can have different objective names):

- background reading; going through the literature; learning about the research field;
- setting up of some kind of system for the project; getting the environment for experiments working;
- conducting preliminary experiments; implementation of a basic/simple approach; ; producing base case results ;
- trying method 1; recording the results;
- trying method 2; recording the results.

Revised

Aims Here you are describing the term goal of the project. What do you want to achieve by the end? What is the ultimate goal of this work? For example, the primary aim of this document is to have students produce suitable aims and objectives for their COSC480/490 project. While the aims and objectives documents is not an assessed deliverable, a clear definition of what is to be done, and a bit of planning of how it is to be accomplished is paramount to the project's success. It is important to establish the scope of the project.

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- setting up of some kind of system for the project; getting the environment for experiments working;
- conducting preliminary experiments; implementation of a basic/simple approach; ; producing base case results ;
- trying method 1 (A); recording the results;
- trying method 1 (B); recording the results.