University of Waterloo

Faculty of Engineering

Fancy Title for Some Trivial Thing You Did

Your Company

123 Muffin Lane

Hupperdook, ON A1A 1A1

Your Name

ID 69696969

3A Department of Systems Design Engineering

April 1, 1969

YOUR RETURN ADDRESS HERE

April 1, 1969
Dr. Paul Fieguth, Professor and Department Chair
Systems Design Engineering
University of Waterloo
Waterloo, ON
N2L 3G1

Dear Professor Fieguth,

I have prepared this report, "Fancy Title for Some Trivial Thing You Did" as my 3B

Work Report for the Engineering team at Your Company. This report is the FIRST

SECOND FINAL of three that I must submit as part of my degree requirements, and

it has not received any previous academic credit. This report was entirely written by

me and has not received any previous academic credit at this or any other institution.

FILL ME IN Write some stuff about the company briefly, name your manager, etc.

The purpose of this report is to ... FILL ME IN. Write a one or two sentence, VERY

BRIEF overview of the report.

Sincerely,

Erik

Your Name

69696969

3B Systems Design Engineering

Abstract

Fuck report styling. That is all.

Contents

List of Figures

List of Tables

1

How to Use

The easiest way to start using this template is to make a sharelatex.com account if you don't already have one and dump the content of this repo into a new sharelatex project.

You could also install a tex distribution locally (like texlive or equivalent) but then you either have to manage libraries yourself (sort of a pain, especially if you want it to just work) or grab a distribution with everything ever (dozens of GBs dedicated to Latex?).

Don't forget to delete all my awful comments. You don't want those to surface in your report.

2

ToC explained

Table of Contents will be auto generated, so you don't need to worry about it. If you have a strange urge to make unnecessary modifications to it (mostly adding un-indexed sections such as glossary and references), check out this answer on Stack-Exchange. This is also an example of how to run a hyperlink

3

Meta-text Examples

Note that all meta-text references must be cited for the reference to appear. That is to say, if you just plop a reference book down into `references.bib` (or adding a glossary entry, or whatever) without actually using `\cite` or `\gls` (et cetera), the reference **will not show up**.

3.1   Acronyms

Acronyms usage:

short: API

long: Application Programming Interface

full: Application Programming Interface (API)

3.2   Glossary entries

For example mentioning tits with the `\gls` command. Using the uppercase version of Tits gets you exactly the result you expect. Also titss gives you the pluralized version - fancy that.

3.3   Citation

Three items are cited: *The LATEX Companion* book [2], the Einstein journal paper [1], and the Donald Knuth's website [3]. The LATEX related items are [2, 3].

3.4   Code snippet

This is a snippet of code, using `\lstlsting`. Default language is set to python (it auto detects keywords) so if you're using something else, you gotta fiddle with the language setting above.

```python
import numpy as np


def incmatrix(genl1,genl2):
    m = len(genl1)
    n = len(genl2)
    M = None #to become the incidence matrix
    VT = np.zeros((n*m,1), int)  #dummy variable


    #compute the bitwise xor matrix
    M1 = bitxormatrix(genl1)
    M2 = np.triu(bitxormatrix(genl2),1)


    for i in range(m-1):
        for j in range(i+1, m):
            [r,c] = np.where(M2 == M1[i,j])
            for k in range(len(r)):
                VT[(i)*n + r[k]] = 1;
                VT[(i)*n + c[k]] = 1;
                VT[(j)*n + r[k]] = 1;
                VT[(j)*n + c[k]] = 1;

                if M is None:
                    M = np.copy(VT)
                else:
                    M = np.concatenate((M, VT), 1)

                VT = np.zeros((n*m,1), int)


    return M
```

4

Within-text Content

We can also do tables, like so:

Day	Min Temp	Max Temp	Summary
Monday	11C	22C	A clear day.
Tuesday	9C	19C	Cloudy with rain.
Wednesday	10C	21C	Rain.

Table 1: Some table I copied from the Latex wikibook online

But realistically you should never be doing tables by hand ever because Latex Table Generator exists.

Via Latex magic, we can refer to this table as table 1.

Here is a kitten:

Figure 1: It's a kitten. You like kittens.

5

Equations

Here is the transfer function to the control system shown in figure 1:

$$T(s) = \frac{Y(s)}{R(s)} = I(s) \cdot \frac{K_p \cdot P(s)}{1 + K_p \cdot P(s) \cdot H(s)} \tag{1}$$

As usual, we can use it's number. That was formula (1)

Glossary

tits The tits, chickadees, and titmice constitute the Paridae, a large family of small passerine birds which occur mainly in the Northern Hemisphere and Africa. Most were formerly classified in the genus Parus. While commonly referred to as "tits" throughout much of the English-speaking world, these birds are called either "chickadees" (onomatopoeic, derived from their distinctive "chick-a dee dee dee" alarm call)[1] or "titmice" in North America. The name titmouse is recorded from the 14th century, composed of the Old English name for the bird, mase (Proto-Germanic *maison, German Meise), and tit, denoting something small. The former spelling, "titmose", was influenced by mouse in the 16th century.[2] Emigrants to New Zealand presumably identified some of the superficially similar birds of the genus Petroica of the family Petroicidae, the Australian robins, as members of the tit family, giving them the title tomtit, although, in fact, they are not related. . 3

Acronyms

API Application Programming Interface. 3

References

[1] Albert Einstein. "Zur Elektrodynamik bewegter Körper. (German) [On the electrodynamics of moving bodies]". In: *Annalen der Physik* 322.10 (1905), pp. 891–921. DOI: http://dx.doi.org/10.1002/andp.19053221004.

[2] Michel Goossens, Frank Mittelbach, and Alexander Samarin. *The LATEX Companion*. Reading, Massachusetts: Addison-Wesley, 1993.

[3] Donald Knuth. *Knuth: Computers and Typesetting*. URL: http://www-cs-faculty.stanford.edu/%5C~%7B%7Duno/abcde.html.