

University of Waterloo  
Faculty of Engineering

# Fancy Title for Some Trivial Thing You Did

Your Company  
123 Muffin Lane  
Toront, ON A1A 1A1

Your Name  
ID 20469696  
2B Department of Systems Design Engineering  
April 1, 1969

Dear Professor jwhomever,

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Sed ut nisi velit. Orci varius natoque penatibus et magnis dis parturient montes, nascetur ridiculus mus. Nulla auctor enim quis odio consectetur, quis cursus tortor consequat. Integer semper nisi sit amet porttitor lacinia. Quisque nec rhoncus ex, lobortis dictum metus. Etiam mattis tempus sagittis. Class aptent taciti sociosqu ad litora torquent per conubia nostra, per inceptos himenaeos. Nam tempor dapibus facilisis. Vivamus egestas risus vel elit faucibus, non gravida mi tristique. Suspendisse enim purus, aliquam sit amet consequat nec, vehicula eget ante. Proin sit amet purus volutpat neque eleifend ultricies eu in turpis. Quisque dui diam, faucibus ut orci vel, pulvinar pellentesque metus. Sed sed luctus massa. Morbi dapibus, nisi in laoreet faucibus, sapien mauris vehicula risus, vel gravida lacus enim egestas nisl. Donec consequat nisl in euismod auctor.

Your Full Name

20469696

## **Abstract**

Fuck report styling. That is all.

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# 1

## How to Use

The easiest way to start using this template is to make a [sharelatex.com](https://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 `referencesbib` (or adding a glossary entry, or whatever) without actually using `\cite/\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.

### 3.3 Citation

Three items are cited: *The L<sup>A</sup>T<sub>E</sub>X Companion* book [2], the Einstein journal paper [1], and the Donald Knuth's website [3]. The L<sup>A</sup>T<sub>E</sub>X related items are [2, 3].

### 3.4 Code snippet

This is a snippet of code, using `\lstlisting`. 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.

---

```
1 import numpy as np
```

```

2
3  def incmatrix(genl1,genl2):
4      m = len(genl1)
5      n = len(genl2)
6      M = None #to become the incidence matrix
7      VT = np.zeros((n*m,1), int) #dummy variable
8
9      #compute the bitwise xor matrix
10     M1 = bitxormatrix(genl1)
11     M2 = np.triu(bitxormatrix(genl2),1)
12
13     for i in range(m-1):
14         for j in range(i+1, m):
15             [r,c] = np.where(M2 == M1[i,j])
16             for k in range(len(r)):
17                 VT[(i)*n + r[k]] = 1;
18                 VT[(i)*n + c[k]] = 1;
19                 VT[(j)*n + r[k]] = 1;
20                 VT[(j)*n + c[k]] = 1;
21
22             if M is None:
23                 M = np.copy(VT)
24             else:
25                 M = np.concatenate((M, VT), 1)
26
27             VT = np.zeros((n*m,1), int)
28
29     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:

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

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

# Glossary

**API** Application Programming Interface. 3

**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

# 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 L<sup>A</sup>T<sub>E</sub>X 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>.