Basic Title Page

G. Rozgonyi

UPDATED IN 2024

Department of Mathematics
Imperial College London
180 Queen's Gate
London, SW7 2AZ, U.K.

gergely.rozgonyi20@imperial.ac.uk

Abstract

This is a simple document with a title page. Your abstract would go here

Figure 1: Imperial College London logo

Basic LaTeX functionalities

This document is as plain as it gets. But you do have page numbering.

Here's an equation:

$$\int_0^\infty e^{-x^2} dx = \frac{\sqrt{\pi}}{2} \tag{1}$$

And here's a table:

x	$f(x)$
1	2
2	4
3	6
4	8

Table 1: A simple table

Notice that it's positioned to be exactly here using the `[H]` in the beginning line. Otherwise, it would float to the top of the page (or the next suitable page).

The code for the Imperial logo comes here, but it floats to the top of the page. Notice that it's set to be 60% of the width of the writable page (`[width=0.6 textwidth]`).

I can reference each of these elements using the `label` command. For example, I can reference the table as Table 1, the equation as Equation 1, and the figure as Figure 1.

If I want to include a multiline equation, I can use the `align` environment:

$$\begin{aligned} 1+1+1+1+1 &= 2+1+1+1 \\ &= 3+1+1 \qquad (2) \\ &= 4+1 \\ &= 5 \qquad (3) \end{aligned}$$

I put `nonumber` in the lines I don't want to be numbered.

To include code, I can use the `lstlisting` environment. But this can go into a new `subsection`, that I decide to number:

0.1 Including code

Wait! The number is all weird. I'd prefer it to be `1.1` instead of `0.1`. Let's fix this by telling LaTeX that we are already in the first section, using the `stepcounter` command. But we also want to reset the subsection counter to 0. We can do this using the `setcounter` command. Let's see if this worked.

1.1 Including code

Yay! Onto displaying code.

```
# This is a comment
import numpy as np

def inc(x):
    return x + 1

print(inc(4))
```

Code Snippet 1: Python example

This can be used to include code from any language. I can include C code:

```
#include <iostream>

int main() {
    std::cout << "Hello, world!" << std::endl;
    return 0;
}
```

and (for whatever reason) I even removed the caption!

I can also include code from a file:

```
# This code is imported from a file!

print("Hello World!")
```

Code Snippet 2: Python example from file

Now that's done, let's draw something using TikZ.

1.2 Drawing with TikZ

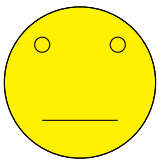

Figure 2: A simple vector graphic face.

But maaybe you generated some data and saved it as a `.csv` file. You can include a plot of this too!

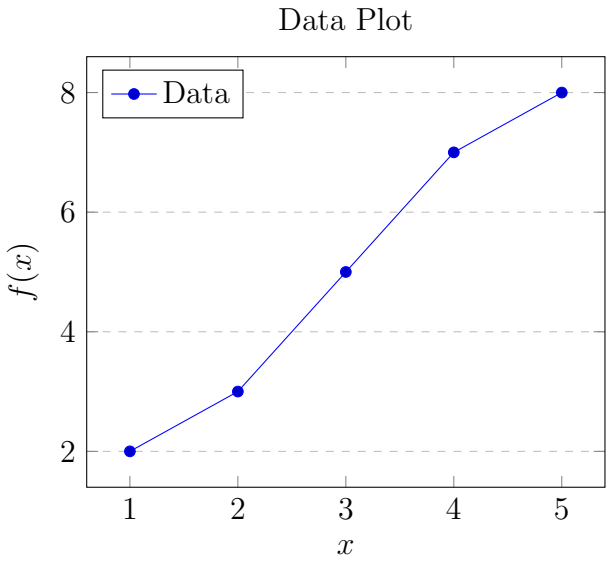

Figure 3: A simple plot of some data.

Finally, some useful LaTeX commands and maths stuff, like matrices:

- `textbf`: **bold**
- `textit`: *italic*
- `large`: larger text!
- `huge`: huge text! (always enclose these in curly braces)

$$\begin{bmatrix} 1 & 2 & 3 \\ 4 & 5 & 6 \\ 7 & 8 & 9 \end{bmatrix} = \begin{pmatrix} 1 & 2 & 3 \\ 4 & 5 & 6 \\ 7 & 8 & 9 \end{pmatrix} \tag{4}$$