The Title

Author Name
Author Two
Author Three

Institution

ABSTRACT

You can add an abstract like this! Dont forget to close the abstract commands with AE (abstract end). most of the tags are mnemonic so it should be easy to remember.

21 September 2020

1. The First Section Using a Numbered Heading

This is an indented paragraph. Even Though it's only two sentences.

Here is another indented paragrapoh with some dummy text so you can see what it looks like. Sed et laboriosam officiis. Excepturi vero iusto quos. Laboriosam adipisci quia similique nesciunt quas aperiam corrupti vel. Explicabo possimus quaerat fugiat eius tempora inventore commodi debitis. Porro est dolores sequi.

Here is an un-indented paragrapoh with some dummy text so you can see what it looks like. Sed et laboriosam officiis. Excepturi vero iusto quos. Laboriosam adipisci quia similique nesciunt quas aperiam corrupti vel. Explicabo possimus quaerat fugiat eius tempora inventore commodi debitis. Porro est dolores sequi.

Here is a blockquote, it is essentially a paragraph that has been indented on both sides.

2. Equations

We can also type equations using EQN which is very simple and most of the syntax follows as you would say them. When in doubt use curly braces to isolate terms before dealing with them further. Below are some examples

The phrase the `x = 1 over 2` generates

$$x = \frac{1}{2}$$

The phrase `y = 2 x sup 2 + 4x - 2` generates the following

$$y = 2x^2 + 4x - 2$$

The phrase `y=4sin(x)-cos sup 2 (x)` generates the following

$$y = 4sin(x) - cos^2(x)$$

Heres an example of a more complex equation where you might need to use curly braces. The phrase
`s = sqrt { { sum from i=1 to inf ( x sub i - x bar ) sup 2 } over { N - 1 } }`
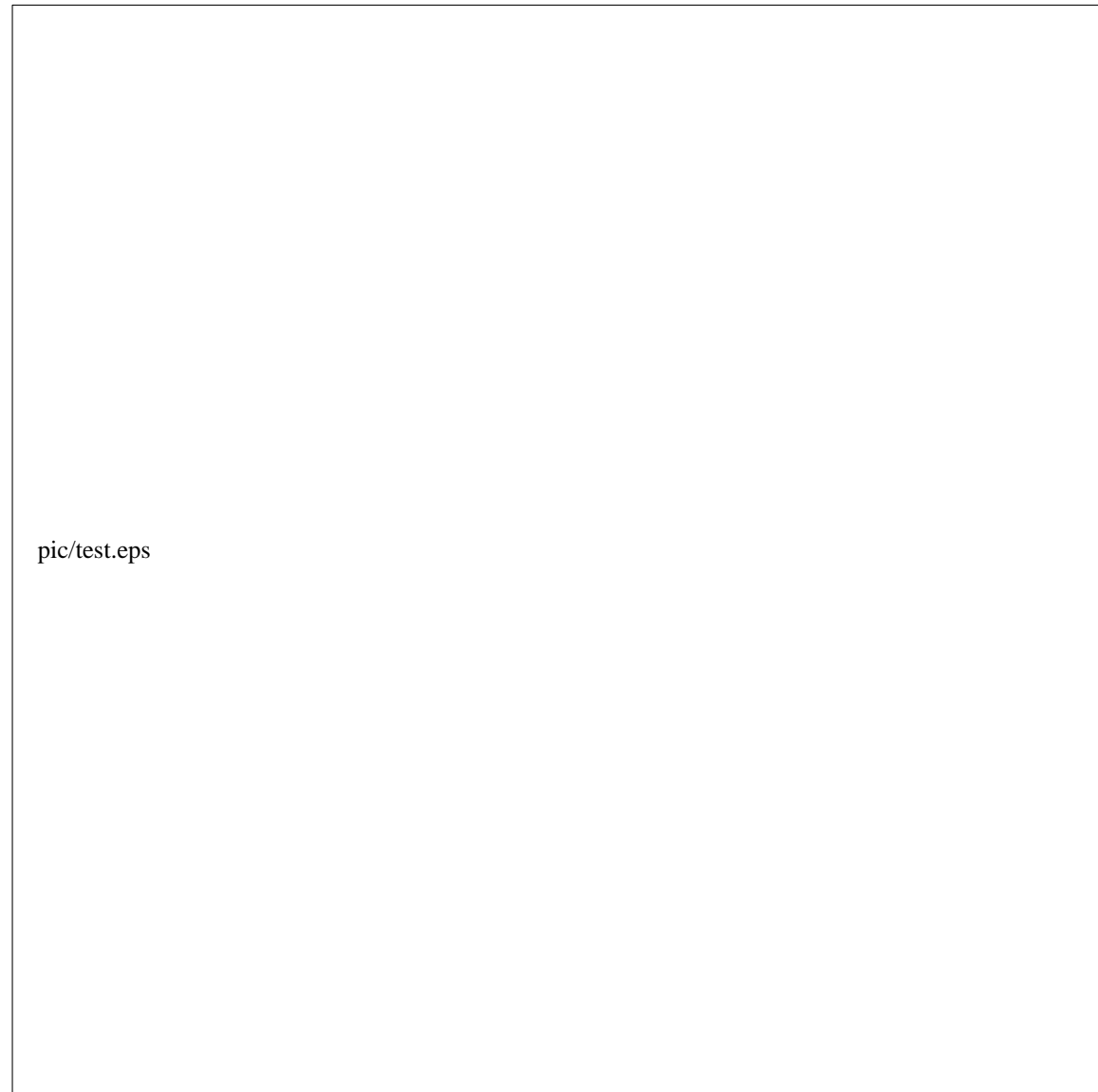generates the following

$$s = \sqrt{\frac{\sum_{i=1}^{\infty}(x_i - \bar{x})^2}{N - 1}}$$

3. Images

The problem with images is that they need to be encapsulated postscript or .eps files. Your images can be converted to eps using the `convert` command, found in `ImageMagick.`

```
$ convert test.jpg test.eps
```

After converting your images to eps files they can be included like below.

pic/test.eps

Figure 1: A rare pepe.

3.1. notes on adding tables, equations and figures

If you add any of these you need ot use the appropriate command line arguments at compile time to pass the images, equations, or tables to their respective preprocessor. An example of a compile command might be

```
groff -ms -e -t -p file.ms -Tpdf > file.pdf
```

Where -e passes equations to EQN, -p passes figures and images to PIC, -t passes tabel to TBL.

4. Some more stuff about headings

5. This is a level one heading

Sed et laboriosam officiis. Excepturi vero iusto quos. Laboriosam adipisci quia similique nesciunt quas aperiam corrupti vel. Explicabo possimus quaerat fugiat eius tempora inventore commodi debitis. Porro est dolores sequi.

5.1. This is a level two heading

Sed et laboriosam officiis. Excepturi vero iusto quos. Laboriosam adipisci quia similique nesciunt quas aperiam corrupti vel. Explicabo possimus quaerat fugiat eius tempora inventore commodi debitis. Porro est dolores sequi.
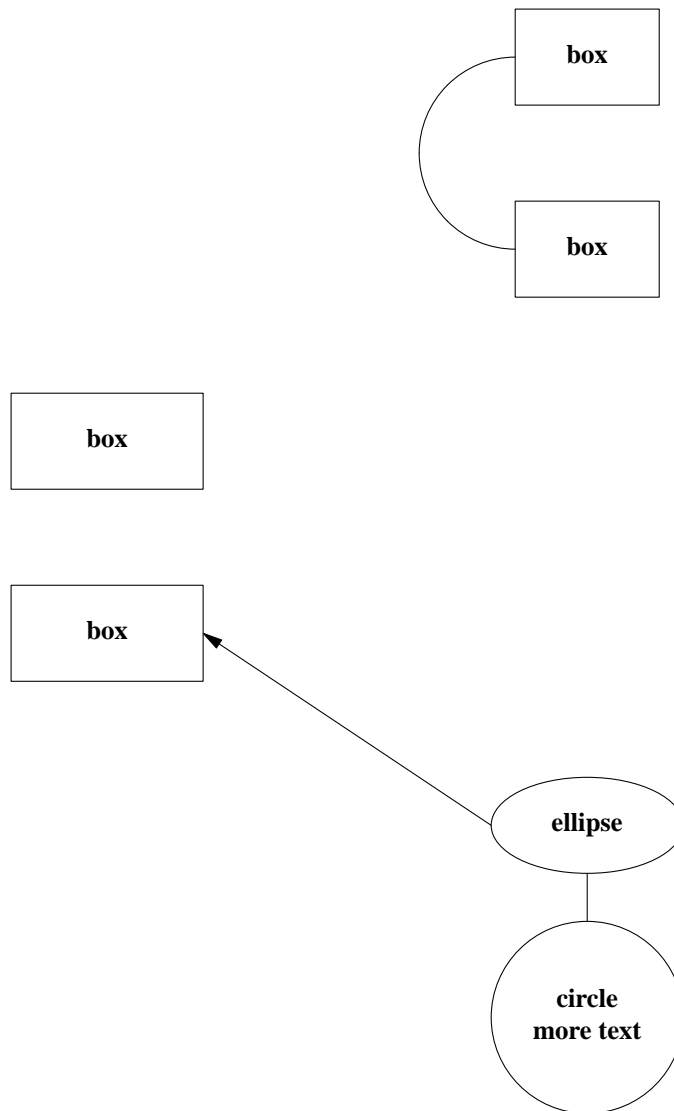
5.1.1. This is a level three heading

Sed et laboriosam officiis. Excepturi vero iusto quos. Laboriosam adipisci quia similique nesciunt quas aperiam corrupti vel. Explicabo possimus quaerat fugiat eius tempora inventore commodi debitis. Porro est dolores sequi.
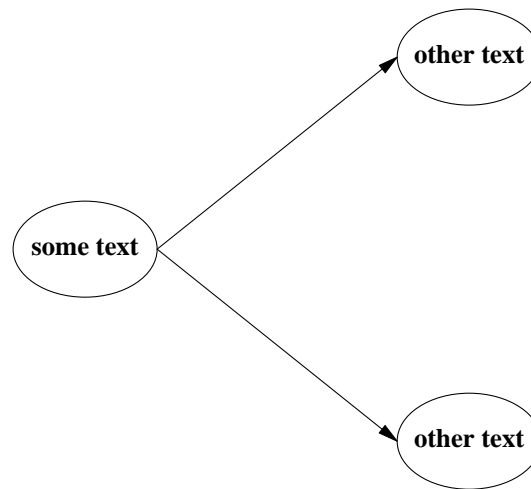
5.1.1.1. This is a level four heading

Sed et laboriosam officiis. Excepturi vero iusto quos. Laboriosam adipisci quia similique nesciunt quas aperiam corrupti vel. Explicabo possimus quaerat fugiat eius tempora inventore commodi debitis. Porro est dolores sequi.

6. Drawing stuff with PIC

box

box

box

box

ellipse

circle
more text

6.1. A more useful example

```
                          ┌──────────┐
                          │ other text │
                          └──────────┘
                               ↗
┌──────────┐
│ some text │
└──────────┘
                               ↘
                          ┌──────────┐
                          │ other text │
                          └──────────┘
```

7. Lists

heres a paragraph with no indent followed by a bulletted list

- item one
- item two
- item three
- item four

Numbered lists are a bit tougher since you have to manually add the numbers

1   item one
2   item two
3   item three

you can use a macro to create auto numbering lists These macros look like so:

```
.de NL
.IP 1
.nr list_index +1
..
```

and are called in groff like so

```
.nr list_index 1
.NL
item one
.NL
item two
.NL
item three
```

The output will look like so

1   item one

2   item two

3   item three

Note this macro implementation requires that you declare `list_index` before starting a new list otherwise the numbers will carry on from the previous list.

8. References and Documentation

You can view the `groff_ms` documentation by running

```
$ man groff_ms
```

You can view the EQN documentation by running

```
$ man eqn
```

You can view the PIC documentation by running

```
$ man eqn
```

If you would like to look at the original troff documentation you can have a look at the following link.

```
https://troff.org/papers.html
```

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