Groff cheatsheet

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1. Introduction

Groff is a minimalistic text editor. Something like latex/markdown. As far as I know, it exists preinstalled in most Linux distributions. Why not use docs/markdown/latex? You could. But this is pretty easy for most things. Especially if you quickly need to create a text based PDF document with formatting and everything but you don't want to think too much.

2. This cheatsheet?

This was also made using groff.

I will aim to go through the documentation and list down some things I find useful here. Note that this is not extensive by any means. If you want a super extensive list just refer to **man 7 groff** on your terminal.

3. Setup

1. Firstly check if groff is installed by going to the terminal and typing 'man groff'

2. Then create a file with an extension of .ms if you dont have tables in your document. Or .me if you do.

3. To compile the document into a PDF file we need to run the command 'groff -ms temp.ms -Tpdf > temp.pdf'.

   Note that we pipe it because groff outputs to terminal otherwise.

4. If you are using vim, you can automate this saving bit very easily.

   Just go to your ~/.vimrc file and add these lines.

   au BufWritePost,BufFilePost *.ms !groff -ms % -T pdf > %:r.pdf

   au BufWritePost,BufFilePost *.me !tbl % | groff -me -T pdf > %:r.pdf

5. How to write them in the file?
   Add them like this:

   ```
   .TL
   This is the title
   .LP
   Hello world
   ```

6. You can then open the .pdf with whatever you use. (I use zathura).

4. Basics

4.1. Title

This will create a title. Like this document
    .TL

4.2. Move to left/right/center

l, r, c for left right center
    .ad r

4.3. Author

This will add an author.
    .AU

4.4. Indented Paragraph

This create an indent with a number . at the start. Like this list.
    .IP 1.

4.5. Headers

This creates the next heading and autonumbers it. The number after it determines level. eg. 1 for something like 1.0, 2.0 and 2 for something like 1.1, 2.1 etc
    .NH 1

4.6. Indented List

If you have a list you want to indent.
    .RS
    .IP 1.
    .IP 2.
    .RE

4.7. Convert to bold.

If you want to convert to **bold.**

    .B
    hello

4.8. Convert to *italic.*

If you want to convert to italic.
    .I
    hello

4.9. Add <u>underline.</u>

If you want to add underlines.
    .UL "Underlined"

4.10. Comments

This adds a comment to a line
```
  \" comment
```

4.11. Boxes

Add box around text.
```
    .B1
    hello
    .B2
```

4.12. Page break

This creates a page break.
```
  .bp
```

4.13. Add images

Adds images. (Note: only accepts .eps files. So convert it using imageMagick. Eg: convert temp.jpg temp.eps)
```
    .PSPIC -L "house.eps"
```

To make things go faster you can use this command in your vimrc

groff -e -ms % -Tps > %:r.ps && ps2pdf %:r.ps %:r.pdf

4.14. Table of contents!

```
    .XS 1
    heading
    .XA 2
    heading 2
    .XE

    .TC
    .bp
```

----

5. Equations

$$y = 3x + 1000$$

This adds any kind of equations.
```
    .EQ
    y = 3x + 1000
    .EN
    .LP
```

5.1. Add super/subscript

$$y = 3^{\phi+100}$$

This adds superscripts/subscripts. To write greek write the name of the letter.

```
.EQ
y = 3 sup{ phi + 100}   "\or sub for subscript
.EN
.LP
```

5.2. To add a division type thing.

$$y = \frac{1 + \sqrt{5}}{2 + x}$$

```
.EQ
y = {1 + sqrt 5} over {2+x}
.EN
```

5.3. To add sum over.

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

```
.EQ
y = sqrt {
{sum from i=1 to N (x sub i - x bar ) sup 2}
over {x-1}
.EN
```

5.4. To add integral

$$\pi = \int_{-1}^{1} \frac{dx}{\sqrt{1 - x^2}}$$

```
.EQ
pi = int from -1 to 1 dx over sqrt {1-x sup 2}
.EN
```

5.5. To add text replacement shortcuts.

$$2 * b^2 - 4ac$$

$$3 * b^2 - 4ac$$

5.6. Inline equations

This is a text where I can add $3\alpha + 10\beta = 4p$

```
.EQ
delim
```

.EN
.PP
This $3\alpha + 10\beta = 4p$