Groff Cheatsheet

Groff (GNU troff) is a typesetting system that reads plain text mixed with formatting commands and produces formatted output. Output may be PostScript, PDF, html, or ASCII/UTF8 for display at the terminal. Formatting commands may be either low-level typesetting requests ("primitives") or macros from a supplied set. Users may also write their own macros. All three may be combined.

Present on most Unix systems owing to its long association with Unix manuals (manpages), groff is capable of producing typographically sophisticated documents while consuming only minimal system resources.

Groff is released under the GNU General Public License.

Compile

We need to compile our document into `ps` (PostScript) or `pdf` (Portable Document Format) formats which will be done by redirection:

Decription	Command
ps format (Default)	`$ groff -ms file.ms > output.ps`
pdf format	`$ groff -ms -Tpdf file.ms > output.pdf`
We also can compile with `-mspdf` flag to have some extra features like *Table of Contents*:	`$ groff -mspdf -Tpdf file.ms > output.pdf`

Comments

`groff` has three way to create a comment:

```
1  \" This is a comment
2  .\" Also a comment but, it has to be at the beginning of the line
3  .ig
4  This is a multiline comment
5  everything in this block will be ignored.
6  ..
```

Keep that in mind

The macros should be called at the beginning of a line.

Title

Every document (in general, not in groff) at least needs a *title* and *author*:

```
1  .TL
2  The Title
3  .AU
4  The Author
```

We can add institution:

```
1  .AI
2  Home
```

We can also have abstraction:
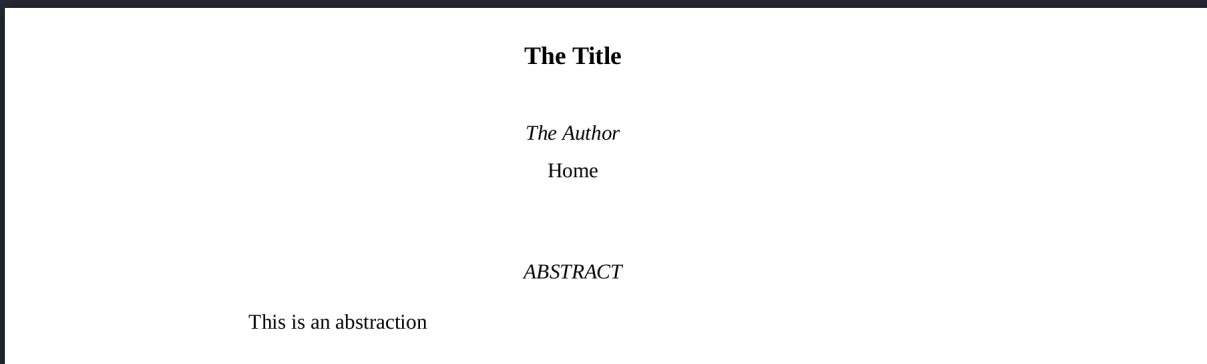
```
1  .AB
2  This is an abstraction
3  .AE
```


The Title

The Author
Home

ABSTRACT

This is an abstraction

Figure 1: *Title*, *Author*, *Institution* and *Abstraction*

To have an abstraction without the *abstraction* keyword, simple give `.AB` the `no` argument:

```
1  .AB no
2  This is an abstraction
3  .AE
```

Headings

- Ordered / Numbered
- Unordered

Numbered / Ordered headings

```
1   .NH 1
2   Heading level 1
3   .NH 2
4   Heading level 2
5   .NH 3
6   Heading level 3
7   .NH 4
8   Heading level 4
9   .NH 5
10  Heading level 5
11  .NH 6
12  Heading level 6
```

The `.NH` macro without any arguments (levels) is level 1 by default.

1. Heading level 1

1.1. Heading level 2

1.1.1. Heading level 3

1.1.1.1. Heading level 4

1.1.1.1.1. Heading level 5

1.1.1.1.1.1. Heading level 6

Figure 2: Numbered Headings

Unordered headings

```
1   .SH
2   A Simple heading
3   .SH 2
4   A Simple heading
```

A Simple heading

A Simple heading

Figure 3: Unordered Headings

Paragraphs

No-line indented

```
1   .LP
2   This is a simple paragraph.This is a simple paragraph.This is a simple paragraph.
3   This is a simple paragraph.This is a simple paragraph.This is a simple paragraph.
```

Paragraphs

This is a simple paragraph.This is a simple paragraph.This is a simple paragraph. This is a simple paragraph.This is a simple paragraph.This is a simple paragraph.

Figure 4: No-Line Indented Paragraph

First-line indented

```
1  .PP
2  This is a simple paragraph.This is a simple paragraph.This is a simple paragraph.
3  This is a simple paragraph.This is a simple paragraph.This is a simple paragraph.
```

Paragraphs

This is a simple paragraph.This is a simple paragraph.This is a simple paragraph. This is a simple paragraph.This is a simple paragraph.This is a simple paragraph.

Figure 5: First-line Indented Paragraph

All-but-first-line indented

```
1  .XP
2  This is a simple paragraph. This is a simple paragraph.
3  This is a simple paragraph. This is a simple paragraph.
```

Paragraphs

This is a simple paragraph.This is a simple paragraph.This is a simple paragraph. This is a simple paragraph.This is a simple paragraph.This is a simple paragraph.

Figure 6: All-But-First-Line Indented Paragraph

All-indented paragraph

```
1  .NH
2  Indented Paragraph
3  .IP
4  This is a indented paragraph. This is a indented paragraph.
5  This is a indented paragraph. This is a indented paragraph.
6  .LP
7  This is a regular paragraph. This is a regular paragraph.
8  This is a regular paragraph. This is a regular paragraph.
```

1. Indented Paragraph

This is a indented paragraph. This is a indented paragraph. This is a indented paragraph. This is a indented paragraph. This is a indented paragraph. This is a indented paragraph.

This is a regular paragraph. This is a regular paragraph. This is a regular paragraph. This is a regular paragraph. This is a regular paragraph. This is a regular paragraph.

Figure 7: Range-Specific Indented Paragraph

Range All-indented paragraph

```
1  .NH
2  Range-indented Paragraph
3  .LP
4  This is a regular paragraph. This is a regular paragraph.
5  This is a regular paragraph. This is a regular paragraph.
6  .RS
7  This is a quote from X. This is a quote from X. This is a quote from X.
8  This is a quote from X. This is a quote from X. This is a quote from X.
9  .RE
```

2. Range-indented Paragraph

This is a regular paragraph. This is a regular paragraph. This is a regular paragraph. This is a regular paragraph. This is a regular paragraph. This is a regular paragraph.

This is a quote from X. This is a quote from X. This is a quote from X. This is a quote from X. This is a quote from X. This is a quote from X.

Figure 8: All Indented Paragraph

Quote

Paragraph

```
1  .NH
2  Quote Paragraph
3  .QP
4  This is a quoted paragraph. This is a quoted paragraph. This is a quoted paragraph.
5  This is a quoted paragraph. This is a quoted paragraph. This is a quoted paragraph.
6  .LP
7  This is a regular paragraph. This is a regular paragraph. This is a regular paragraph.
8  This is a regular paragraph. This is a regular paragraph. This is a regular paragraph.
```

1. Quote Paragraph

This is a quoted paragraph. This is a quoted paragraph. This is a quoted paragraph. This is a quoted paragraph. This is a quoted paragraph. This is a quoted paragraph.

This is a regular paragraph. This is a regular paragraph. This is a regular paragraph. This is a regular paragraph. This is a regular paragraph. This is a regular paragraph.

Figure 9: Quote Paragraph

Specific range

```
1  .NH
2  Quote Range
3  .QS
```

```
4   This is a quoted paragraph. This is a quoted paragraph. This is a quoted paragraph.
5   This is a quoted paragraph. This is a quoted paragraph. This is a quoted paragraph.
6   .QE
7   .LP
8   This is a regular paragraph. This is a regular paragraph. This is a regular paragraph.
9   This is a regular paragraph. This is a regular paragraph. This is a regular paragraph.
```

2. Quote Range

This is a quoted paragraph. This is a quoted paragraph. This is a quoted paragraph. This is a quoted paragraph. This is a quoted paragraph. This is a quoted paragraph.

This is a regular paragraph. This is a regular paragraph. This is a regular paragraph. This is a regular paragraph. This is a regular paragraph. This is a regular paragraph.

Figure 10: Quote Range

Text formatting

By macro

Italic

```
1   .I
2   This is Italic text.
```

Bold

```
1   .B
2   This is Bold text.
```

Bold-Italic

```
1   .BI
2   This is Bold-Italic text.
```

Monospace

```
1   .CW
2   This is a monospace text.
```

Using macros like this, will change the style of the text from the calling macro, until next macro. And they cannot take argument. But there is an alternative way which will effect only on a specific strings:

```
1   .I "This is a Italic text."
2   .B "This is a Bold text."
3   .BI "This is a Bold-Italic text."
4   .CW "This is a monospace text."
```

> **1. Text formatting**
> *This is Italic text.* **This is Bold text.** ***This is Bold-Italic text.*** `This is a monospace text.`

Figure 11: *Bold*, *Italic*, *Bold-Italic* and *Monospace* text

Macros argument(s)

First argument is the string. Second argument is a character to append in the *EOL*. And the third argument is a character to be inserted in the *BOL*. These characters will not be effected by the macros.

```
1   .I "Are you kidding right now" ?
2
3   .CW "Inside a pair of brackets" ] [
```

> **1. Text formatting**
> *Are you kidding right now*?
>
> [Inside a pair of brackets]

Figure 12: Arguments of Forammtings Macros

Some macros will only effect this way, for example `.UL` macro to have underlined text:

```
1   This line has an
2   .UL "underlined"
3   word.
```

> **1. Text formatting**
> This line has an <u>underlined</u> word.

Figure 13: Unlerline Macro

Font Type

This way, we can specify the beginning and ending of the formatting.

```
1   .LP
2   Testing
3
4   .ft B
5   This is a very and multi-line Bold text. This is kinda an environment.
6   .ft P
```

```
7   .ft I
8   This is a very and multi-line Italic text. This is kinda an environment.
9   .ft P
10  .ft BI
11  This is a very and multi-line Bold-Italic text. This is kinda an environment.
12  .ft P
13  .ft CW
14  This is a very and multi-line Monospace text. This is kinda an environment.
15  .ft P
16  Testing Testing Testing Testing Testing Testing Testing Testing Testing.
```

1. Text formatting

Testing

This is a very and multi-line Bold text. This is kinda an environment. *This is a very and multi-line Italic text. This is kinda an environment.* ***This is a very and multi-line Bold-Italic text. This is kinda an*** ***environment.*** `This is a very and multi-line Monospace text. This is kinda an` `environment.`

Testing Testing Testing Testing Testing Testing Testing Testing Testing.

Figure 14: Format-Text

In-line formatting

```
1   .NH
2   In-line Text formatting
3   .LP
4   This line has an \f[I]italic\f[] word.
5   .LP
6   This line has an \f[B]Bold\f[] word.
7   .LP
8   This line has an \f[BI]Bold-italic\f[] word.
9   .LP
10  This line has an \f[CW]monospaced\f[] word.
```

2. In-line Text formatting

This line has an *italic* word.

This line has an **Bold** word.

This line has an ***Bold-italic*** word.

This line has an `monospaced` word.

Figure 15: In-line Text formatting

Text size

Global

```
1   .nr PS 18
```

Until Next Macro

Larger

```
1   .LP
2   Simple Text Simple Text Simple Text Simple Text Simple Text Simple Text Simple Text
3   .LP
4   .LG
5   Simple Larger Text Simple Larger Text Simple Larger Text Simple Larger Text
6   .LP
7   Simple Text Simple Text Simple Text Simple Text Simple Text Simple Text Simple Text
```

Simple Text Simple Text Simple Text Simple Text Simple Text Simple Text Simple Text

Simple Larger Text Simple Larger Text Simple Larger Text Simple Larger Text

Simple Text Simple Text Simple Text Simple Text Simple Text Simple Text Simple Text

Figure 16: Larger size until the next macro

Smaller

```
1   .LP
2   Simple Text Simple Text Simple Text Simple Text Simple Text Simple Text Simple Text
3   .LP
4   .SM
5   Simple Smaller Text Simple Smaller Text Simple Smaller Text Simple Smaller Text
6   .LP
7   Simple Text Simple Text Simple Text Simple Text Simple Text Simple Text Simple Text
```

Simple Text Simple Text Simple Text Simple Text Simple Text Simple Text Simple Text

Simple Smaller Text Simple Smaller Text Simple Smaller Text Simple Smaller Text

Simple Text Simple Text Simple Text Simple Text Simple Text Simple Text Simple Text

Figure 17: Smaller size until the next macro

Page styling

Footer and Header

```
1  .ds RH Top right
2  .ds CH -%- \" reserved for page number
3  .ds LH Top left
4  .ds RF Buttom right
5  .ds CF \*(DY \" reserved for current date
6  .ds LF Buttom left
```
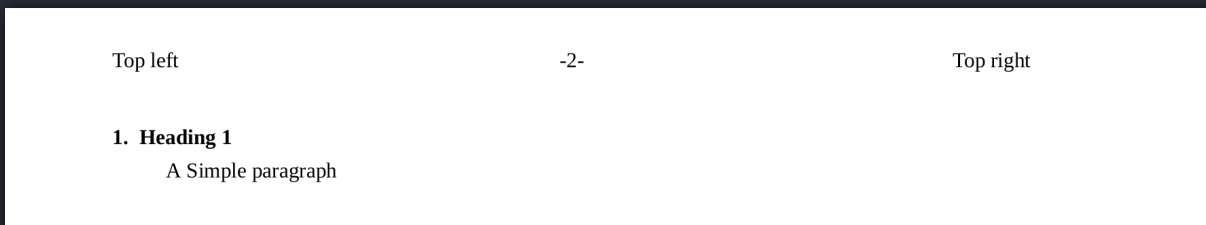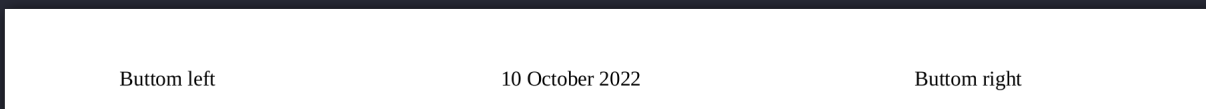
Top left	-2-	Top right

1. Heading 1

A Simple paragraph

Figure 18: Page Headers

Buttom left	10 October 2022	Buttom right

Figure 19: Page Footers

Page Break

```
1  .bp
2  .NH
3  Heading
4  .LP
5  Simple paragraph in a new page
```

Buttom left	16 October 2022	Buttom right

Top left	-2-	Top right

1. Heading

Simple paragraph in a new page

Figure 20: Breaking Page

Separator

Vertical

```
1  .LP
2  Simple test Simple test Simple test Simple test Simple test Simple test Simple test
3  .sp 5
4  .LP
5  Simple test Simple test Simple test Simple test Simple test Simple test Simple test
```
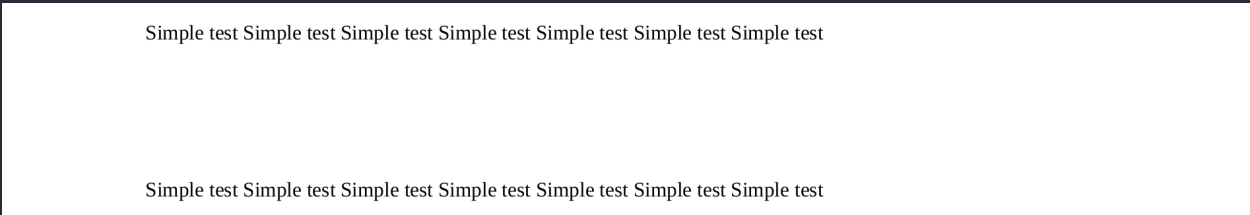
Simple test Simple test Simple test Simple test Simple test Simple test Simple test

Simple test Simple test Simple test Simple test Simple test Simple test Simple test

Figure 21: Vertical Space

Horizontal

```
1  .
```

Table of Contents

```
1  .XS 1
2  Introduction
3  .XA 2
4  A Brief History of the Universe
5  .XA 729
6  Details of Galactic Formation
7  .XE
8  .TC
```

Top left   -i-   Top right

Table of Contents

Figure 22: Table of Contents