Project 1

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1 Preamble

This document was generated from a text file in the Rmd format, especially useful with the free software R.

For an Rmd file to be successfully exported to HTML and PDF, read this page.

Concretely, open R and type:

```
library(rmarkdown)
render("myanalysis.Rmd", "all")
```

Any Rmd file is best edited with RStudio, or Emacs with ESS, markdown and polymode.

Example of an equation written in LaTeX (free, online book): $y_i \sim \mathcal{N}(\mu, \sigma^2)$

Example of an unordered list:

- μ
- σ

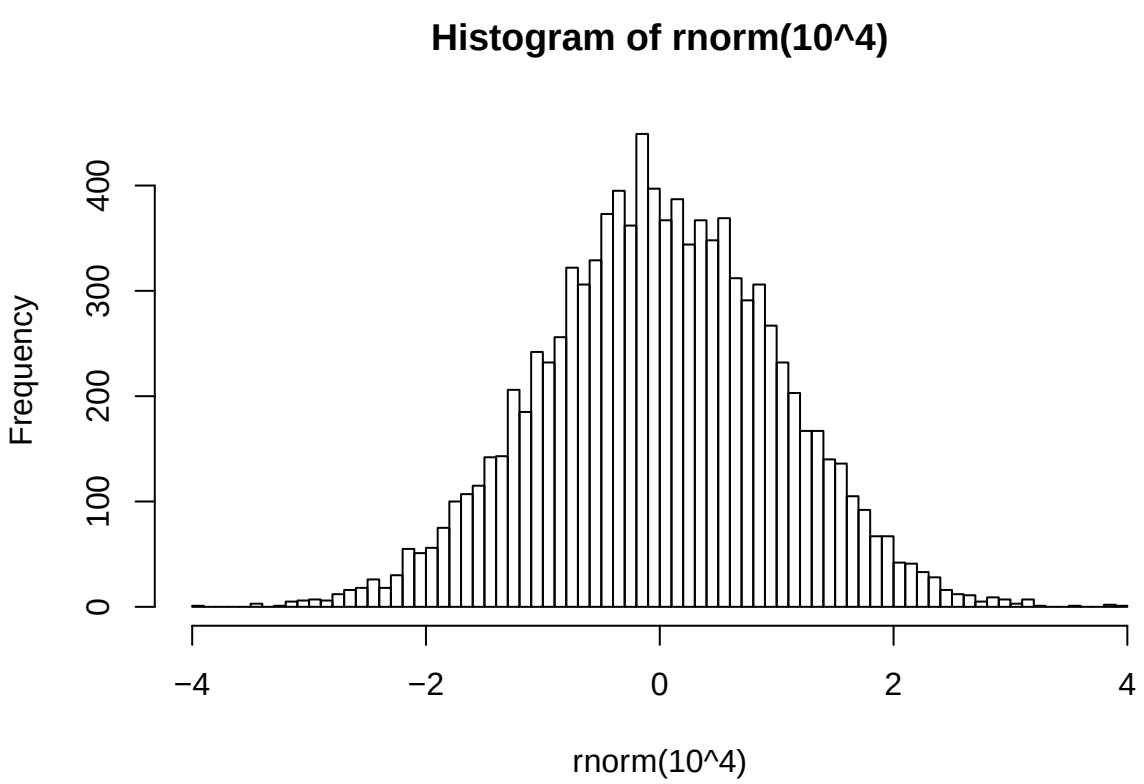
Example of an ordered list:

1. μ
2. σ

Example of **bold** and *italics*.

Example of a plot from R:

```
hist(rnorm(10^4), breaks="FD")
```



Example of a table from R:

```
knitr::kable(mtcars[1:5,])
```

	mpg	cyl	disp	hp	drat	wt	qsec	vs	am	gear	carb
Mazda RX4	21.0	6	160	110	3.90	2.62	16.5	0	1	4	4
Mazda RX4 Wag	21.0	6	160	110	3.90	2.88	17.0	0	1	4	4
Datsun 710	22.8	4	108	93	3.85	2.32	18.6	1	1	4	1
Hornet 4 Drive	21.4	6	258	110	3.08	3.21	19.4	1	0	3	1
Hornet Sportabout	18.7	8	360	175	3.15	3.44	17.0	0	0	3	2

2 Overview

This document is part of project 1. This project is part of a presentation which teaches the fundamentals of reproducible research.

The project directory is organized as advised by Noble (PLoS Computational Biology, 2009).

On any Unix-like system, it is easily done with the following commands:

```
touch AUTHORS COPYING README; mkdir -p doc data code results
```

On any Unix-like system, it can also be easily compressed and transferred:

```
cd ..; tar -czvf project1.tar.gz \
--exclude="*~" --exclude=".*" project1
```

Importantly, before anything else, one must specify all paths relatively to the root of the project:

```
if(Sys.info()["user"] == "tflutre"){
  work.dir <- "~/work/project1"
} else if(Sys.info()["user"] == "other"){
  work.dir <- "C:/Documents/travail/project1"
}
stopifnot(file.exists(work.dir))
data.dir <- paste0(work.dir, "/data")
stopifnot(file.exists(data.dir))
code.dir <- paste0(work.dir, "/code")
stopifnot(file.exists(code.dir))
## source(paste0(code.dir, "/utils_project1.R"))
```

3 Load (or simulate) some data

...

4 Explore the data

...

5 Write the model

...

6 Perform inference

...

7 Check assumptions and improve the model

...

```
print(sessionInfo(), locale=FALSE)
```

```
## R version 3.1.2 (2014-10-31)
## Platform: x86_64-pc-linux-gnu (64-bit)
##
## attached base packages:
```

```
## [1] stats     graphics  grDevices utils     datasets  methods   base
##
## other attached packages:
## [1] knitr_1.6        rmarkdown_0.2.67
##
## loaded via a namespace (and not attached):
## [1] digest_0.6.4    evaluate_0.5.5  formatR_1.0     htmltools_0.2.4
## [5] stringr_0.6.2   tools_3.1.2     yaml_2.1.13
```