

A maximal self tutorial

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Chapter 1

Prerequisites

This is a *sample* tutorial written in **Markdown** to understand the basics of reproducible research and using of packages like `dplyr(?)`, `tidyr`, `ggplot`.

- Rmarkdown: Markdown is a simple formatting syntax for authoring HTML, PDF, and MS Word documents. For more details on using R Markdown see <http://rmarkdown.rstudio.com>.
- Git: Git is a free and open source distributed version control system <https://git-scm.com>.
- R: R is a free software environment for statistical computing and graphics. It compiles and runs on a wide variety of UNIX platforms, Windows and MacOS <https://www.r-project.org>.
- Rstudio: RStudio is an integrated development environment (IDE) for R <https://www.rstudio.com/products/RStudio>.
- Github: GitHub is a web-based Git repository hosting service <https://github.com>.
- LinuxMint: Linux Mint is a community-driven Linux distribution based on Debian and Ubuntu <https://www.linuxmint.com>

Chapter 2

Introduction

2.1 Workflow Github and Rstudio

- install git
 - install R and Rstudio
 - creat a Github account
 - 1. item
 - 1.1. item
 - 1.2. item
 - 2. item
0. Setup git, github and Rstudio
1. check git executable path and creat rsa key, then copy it. (via Rstudio)
 2. add this rsa key as SSH key to github account (via Github)
 3. creat user globlas with git (via shell)

1. creat git repisotory / project with Rstudio

1. new directory with git repository: **Test.Rproj** (via Rstudio)
 1. creat an R script file and commit it: **test.R** (via Rstudio)
 2. creat new github repo with readme: **test** (via Github)
 3. push and merge the local and remote repos (via R-Shell)

```
git remote add origin https://github.com/kadiRgoceR/test.git  
  
git config remote.origin.url git@github.com:kadiRgoceR/test.git  
  
git pull -u origin master  
  
git push -u origin master
```

4. commit, push and pull in Rstudio
see for details(?)
2. existing directory
 1. open shell and code

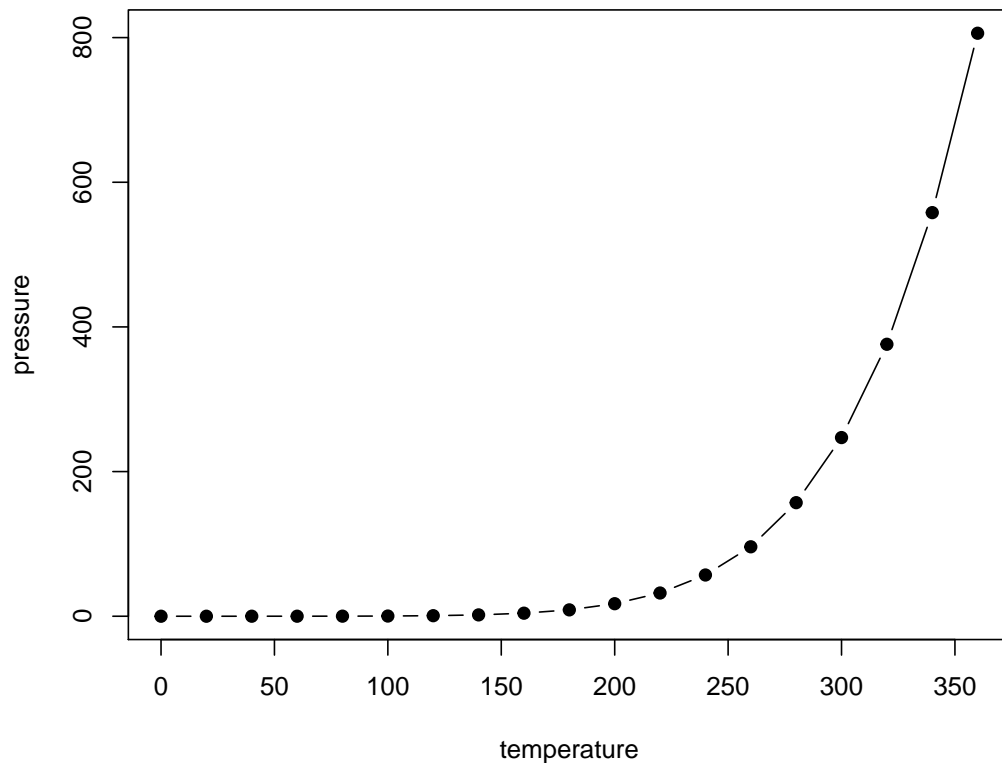


Figure 2.1: Here is a nice figure!

```
git init
```

2. terminate R
3. follow the notes from 1.1.2 to 1.1.4
3. version control
 1. fork an existing repo or creat a new one and copy the repo url (via Github)
 2. new Project with version control, paste Github repo url (Rstudio)
 3. make some changes, add a new R script, commit and push the changes to Github (Rstudio)
2. Branching
 1. fork a repo
 2. do 3.2
 3. tell git the upstream version


```
bash      `git remote add upstream https://github.com/rstudio/bookdown-demo`
```

You can label chapter and section titles using `{#label}` after them, e.g., we can reference Chapter 2. If you do not manually label them, there will be automatic labels anyway, e.g., Chapter 4.

Figures and tables with captions will be placed in `figure` and `table` environments, respectively.

```
par(mar = c(4, 4, .1, .1))
plot(pressure, type = 'b', pch = 19)
```

Reference a figure by its code chunk label with the `fig:` prefix, e.g., see Figure 2.1. Similarly, you can reference tables generated from `knitr::kable()`, e.g., see Table 2.1.

```
knitr::kable(
  head(iris, 20), caption = 'Here is a nice table!',
  booktabs = TRUE
)
```


Table 2.1: Here is a nice table!

Sepal.Length	Sepal.Width	Petal.Length	Petal.Width	Species
5.1	3.5	1.4	0.2	setosa
4.9	3.0	1.4	0.2	setosa
4.7	3.2	1.3	0.2	setosa
4.6	3.1	1.5	0.2	setosa
5.0	3.6	1.4	0.2	setosa
5.4	3.9	1.7	0.4	setosa
4.6	3.4	1.4	0.3	setosa
5.0	3.4	1.5	0.2	setosa
4.4	2.9	1.4	0.2	setosa
4.9	3.1	1.5	0.1	setosa
5.4	3.7	1.5	0.2	setosa
4.8	3.4	1.6	0.2	setosa
4.8	3.0	1.4	0.1	setosa
4.3	3.0	1.1	0.1	setosa
5.8	4.0	1.2	0.2	setosa
5.7	4.4	1.5	0.4	setosa
5.4	3.9	1.3	0.4	setosa
5.1	3.5	1.4	0.3	setosa
5.7	3.8	1.7	0.3	setosa
5.1	3.8	1.5	0.3	setosa

You can write citations, too. For example, we are using the **bookdown** package (?) in this sample book, which was built on top of R Markdown and **knitr** (?). ddd aaa

Chapter 3

Literature

Here is a review of existing methods.

Chapter 4

Methods

We describe our methods in this chapter.

Chapter 5

Applications

Some *significant* applications are demonstrated in this chapter.

5.1 Example one

5.2 Example two

Chapter 6

Final Words

We have finished a nice book.