RESEARCH PROPOSAL

LJMU | UPGRAD - Batch 2019

Your Name | (MSc. Data Science OR MSc Machine Learning) programme

2019-05-17

Contents

Chapter 1

Research Title

Max. 10 words

Write down the title of your research

Example:

Investigate risk factors for eye disease from complex longitudinal datasets

Chapter 2

Proposed Research

Summary of your proposed research

Max. 200 words

This should be short and concised.

- Needs to be written for a scientifically qualified assessor
- it should contain motivation (with background) and your methods that you plan to use

Chapter 3

Research question

Max 350 words

- What is your research question or hypothesis?
- Why is it important. Why are you researching this research question?

Chapter 4

Details of Research project

Max. 2000 words

4.1 Aims and objectives

Aim: What are you going to do?

Objective: Precise and accurate statement what you are going to study

4.2 Work leading up to this project

Use existing literature to say what work has lead up to this project. Use references in this part

4.3 Data

Describe the data that you are going to use for this project

- Will you collect data on people? If yes, do you have ethical approval?
- Will you use existing data? If yes, do you need and do you have approval?
- Processing of the data and the analysis
  - What methods are you using for data cleaning, data management?
  - What methods do you use to avoid bias (bias due to missing data or due to confounders)?
  - What data analyis (DS or ML) methods will you use?
  - What software will you use and do you have it installed and will you need to learn to use it?

Chapter 5

Outcome

Max. 200 words

What is the desired outcome of this project?

Chapter 6

Risks or Contingency Plan

- Are there any risks? And if yes, then what is the plan to mitigate them?
- Is there a coding issue? Do you have access to the right coding library?
- Do you have access to the software?
- What if your method will not work out? Is there such a risk?
- Is there other risk? too small dataset? Too much missing data?

[t]

Table 6.1: Risks and Mitigation Table

	ID	Risk	Mitigation
risk1	1	Risk1	Mitigation1
risk2	2	Risk1	Mitigation1
risk3	3	Risk1	Mitigation1

Chapter 7

Timetables and Milestones

- A detailed plan with dates, what will you do each week

List all referencesthat are relevant and led to this proposal (properly cited)

Chapter 8

To be removed | Bookdown explanation and instructions

This is a *sample* research proposal written in **Markdown**. You can use anything that Pandoc's Markdown supports, e.g., a math equation $a^2 + b^2 = c^2$.

More explanation about **bookdown** can be found at: https://bookdown.org/yihui/bookdown/usage.html

The **bookdown** package can be installed from CRAN or Github:

Remember each Rmd file contains one and only one chapter, and a chapter is defined by the first-level heading `#`.

To compile this example to PDF, you need XeLaTeX. You are recommended to install TinyTeX (which includes XeLaTeX): https://yihui.name/tinytex/.

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

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 8.1. Similarly, you can reference tables generated from `knitr::kable()`, e.g., see Table 8.1.

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

You can write citations, too. For example, we are using the **bookdown** package (Xie, 2019) in this sample book, which was built on top of R Markdown and **knitr** (Xie, 2015).
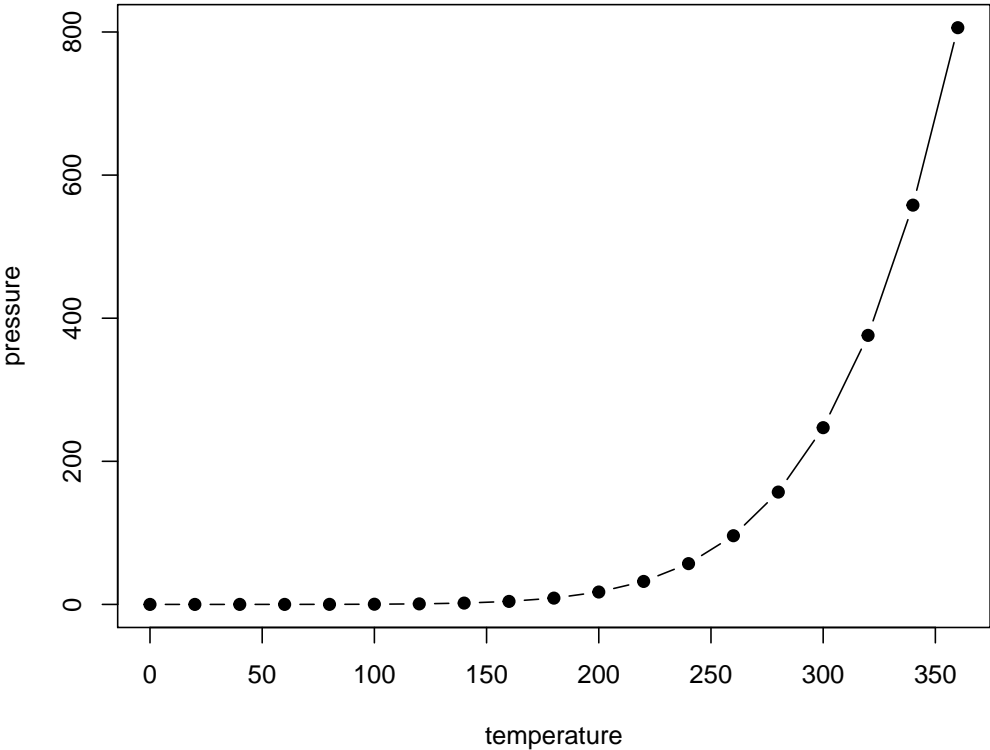
Figure 8.1: Here is a nice figure!

Table 8.1: 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

Bibliography

Xie, Y. (2015). *Dynamic Documents with R and knitr*. Chapman and Hall/CRC, Boca Raton, Florida, 2nd edition. ISBN 978-1498716963.

Xie, Y. (2019). *bookdown: Authoring Books and Technical Documents with R Markdown*. R package version 0.10.