Title of the Report

An optional subtitle

Prenom Nom and Prenom Nom

Academic Year 2022-2023

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1 Introduction

This document offers a template to write your academic **reports** in RMarkdown.

Some R packages are requires: tidyverse, DT, kabble, kableExtra, knitr. If these packages are note installed, please run the following line in the R console:

```r
install.packages("tidyverse")
install.packages("DT")
install.packages("kabble")
install.packages("kableExtra")
install.packages("knitr")
```

If you want to use this template, I assume that you are already familiar with both R and Markdown. I also assume that you know the basics of RStudio. If this is not the case, you might want to read (in French) this RMarkdown tutorial.

In addition, to be able to compile the document to get the final output in a PDF format, a *LaTeX engine* is required. A very simple way to get one is to exectue the following code in the R console:

```r
tinytex::install_tinytex()
```

If you want to customize the theme, you can look in the following files: - for HTML documents: `assets/style.css`. - for PDF documents: `assets/style_rapport_amu.css`

2 Title of the First Section

It is easy to cite some documents thanks to natbib. As written in Athey and Imbens (2017), . . . There are multiple ways of citing document (Xie, Allaire, and Grolemund 2018). More details are listed in the RMarkdown tutorial.

The bib file is located in `assets/biblio.bib`.

To avoid the numbers of a referenced section, table, figure, etc. to appear on a newline, an unbreakable space can be added ( ).

Section 1 presents. . . Section 2 shows. . . Section 3 concludes.

As can be seen in Figure 1, . . .
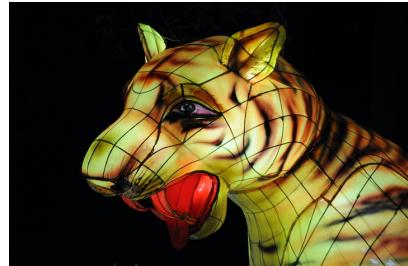
Figure 1: Description for sensory impaired users.

Figure 2 shows sepal lenght as a function of sepal width, from the iris dataset:
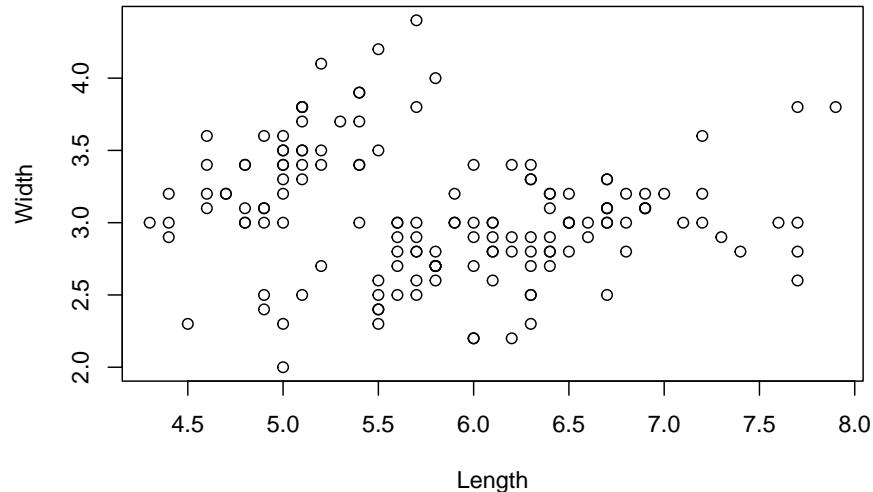

Figure 2: Width of sepals as a function of length.

Sed feugiat vehicula urna, id gravida nisi semper quis. Nam leo augue, dictum sed rutrum porta, ornare vel est. Mauris egestas arcu dui, quis fringilla arcu auctor ut. Aliquam sollicitudin facilisis ultricies. Phasellus tristique metus leo, et faucibus odio malesuada vitae. Vestibulum tincidunt sodales metus, eget fermentum sem fermentum non. Morbi ultrices leo urna, nec commodo sapien tincidunt eget.

As reported in Table 1. . .

Table 1: Caption of the table.

Left-aligned column	Centred column	Right-aligned column
cell 1, row 1	cell 2, row 1	cell 3, row 1
cell 1, row 2	cell 2, row 2	cell 3, row 2
cell 1, row 3	cell 2, row 3	cell 3, row 3

Tables created with R can also be shown in the document. Here is an example with Table 2 :

Table 2: The first rows of the famous iris dataset.

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

2.1   Subsection Title

Donec aliquet semper arcu eget malesuada. Proin lobortis mauris scelerisque, auctor tortor nec, mollis diam. Vivamus diam nisl, faucibus ut tincidunt vitae, vestibulum ac elit. Pellentesque ullamcorper ornare libero non lobortis. Aliquam neque justo, scelerisque nec sagittis ac, efficitur et eros. Sed eu orci eget est rhoncus eleifend. Nam eget orci volutpat, eleifend nisi vel, blandit lectus. Aenean ac ligula quis nisl ultrices scelerisque. Nullam euismod mi ut elementum commodo. Ut orci nibh, tempus sit amet odio id, egestas mattis velit. Quisque finibus magna a leo congue blandit. Curabitur lacus tellus, pharetra a metus

nec, lobortis auctor nibh. Integer consectetur tortor non ullamcorper interdum. Ut non purus libero.

Some LaTeX formula can be written:

$$K(x_i, x_{i'}) = \exp\left(-\gamma \sum_{j=1}^{p} (x_{ij} - x_{i'j})^2\right),$$

The equations can be numbered, both in the HTML and the PDF outputs:

$$\phi_i = \sum_{S \subseteq F \setminus \{i\}} \frac{|S|!(|F| - |S| - 1)!}{|F|!} \left(f_{S \cup \{i\}}(x_{S \cup \{i\}}) - f_S(x_S)\right), \tag{2.1}$$

Another numbered equation:

$$\beta_0 + \beta_1 \mathbf{x}_1 + \beta_2 \mathbf{x}_2 = 0 \tag{2.2}$$

These equations can then be referred to. For example, Equation (2.1) or Equation (2.2).

3 Second Section

Vivamus faucibus eros eget dapibus tempus. Vivamus quis tincidunt orci, id iaculis felis. Pellentesque sed accumsan ex. Nullam in lacus tempor, tincidunt quam ut, tincidunt magna. Ut aliquam tincidunt ante at pretium. Praesent venenatis erat at congue viverra. Mauris posuere ultricies ipsum.

> Some coloured frames can be included. The colors are defined in `assets/style.css` for the HTML output and in `assets/style_rapport_amu.tex` for the PDF output.

Multiple colors are available.

> Green frame.

> Blue frame.

> Red frame.

> Orange frame.

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4 Conclusion

Sed et dignissim dui, non pulvinar nisi. Quisque luctus tincidunt tristique. Vestibulum varius faucibus magna quis laoreet. Pellentesque habitant morbi tristique senectus et netus et malesuada fames ac turpis egestas. Praesent ut lorem sed dolor ultrices iaculis. Nunc

porta non neque quis eleifend. Donec neque risus, accumsan et interdum sed, interdum vitae massa. Aliquam scelerisque congue diam ut tincidunt. Nunc pulvinar turpis vel lacus vehicula, ut auctor sem vestibulum. Curabitur in felis aliquet, pharetra mi in, dapibus massa. Maecenas non sem sed mi dapibus pulvinar. Fusce et libero sit amet mi vulputate rhoncus.

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References

Athey, Susan, and Guido W. Imbens. 2017. "The State of Applied Econometrics: Causality and Policy Evaluation." *Journal of Economic Perspectives* 31 (2): 3–32. https://doi. org/10.1257/jep.31.2.3.

Xie, Yihui, Joseph J Allaire, and Garrett Grolemund. 2018. *R Markdown: The Definitive Guide.* Chapman; Hall/CRC.