R Markdown Template

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Abstract

This document is a template that you can use to produce documents with Rmarkdown. This is my abstract. It is good practice for academic papers to offer an abstract to the reader.

Contents

Word count

You can include a word count in various ways. Here are two alternatives:

This code installs and loads the required packages and save the words counted:

```
#install.packages("devtools")
#library("devtools")
#devtools::install_github("benmarwick/wordcountaddin", type = "source", dependencies =
library("wordcountaddin")
wordcount <- wordcountaddin::word_count( )
```

Word count: 668

Word count (alternative): 896

Rendered at 06 March, 2024

1 Citations

For example, with `@Kirchkamp2018Using`, you can cite Kirchkamp (2018). Setting brackets allows you to manipulate the appearance:

- `[@Kirchkamp2018Using]` becomes (Kirchkamp 2018) and
- `@Kirchkamp2018Using[p. 4]` becomes Kirchkamp (2018, 4).

Webpages can be also cited and put in the reference list:

- `[Google](www.google.de)` becomes a hyperlink Google,
- However, when writing academically you should always put sources into the reference list like this: Google is a popular online search enginge (see Google 2023).

2 Always set your working directory.

```
setwd("/home/sthu/Dropbox/hsf/github/courses/rmd/")
```

3 Headers

```
# H1
## H2
### H3
#### H4
##### H5
###### H6

Alternatively, for H1 and H2, an underline-ish style:
```

```
Alt-H1
======

Alt-H2
------
```

4 H1

4.1 H2

4.1.1 H3

4.1.1.1 H4

4.1.1.1.1 H5 H6

5 R Markdown cheatsheet

5.1 Horizontal rules

5.2 Emphasis

This is bold text

This is bold text

This is italic text

This is italic text

~~Strikethrough~~

5.3 Lists

Unordered

- Create a list by starting a line with `+`, `-`, or `*`
- Sub-lists are made by indenting 2 spaces:
  - Marker character change forces new list start:
    - Ac tristique libero volutpat at
    - Facilisis in pretium nisl aliquet

        - Nulla volutpat aliquam velit
- Very easy!

Ordered

1. Lorem ipsum dolor sit amet
2. Consectetur adipiscing elit
3. Integer molestie lorem at massa
4. You can use sequential numbers...
5. ...or keep all the numbers as `1.`

Start numbering with offset:

57. foo
58. bar

5.4 Code

Inline `code`

Indented code

```
// Some comments
line 1 of code
line 2 of code
line 3 of code
```

Block code "fences"

```
Sample text here...
```

Syntax highlighting

```
var foo = function (bar) {
  return bar++;
};

console.log(foo(5));
```

5.5 R Code Chunks

Please consider the introduction here.

```
norm <- rnorm(100, mean = 0, sd = 1)
```

```
##   A  B
## 1 a  5
## 2 a 10
```

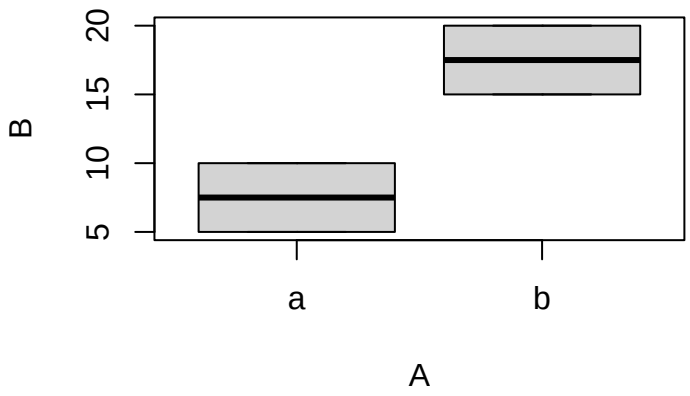
```
## 3 b 15
## 4 b 20
```

```
library(dplyr)
```

```
A <- c("a", "a", "b", "b")
B <- c(5, 10, 15, 20)
dataframe <- data.frame(A, B)
print(dataframe)
```

```
##   A  B
## 1 a  5
## 2 a 10
## 3 b 15
## 4 b 20
```

```
boxplot(B~A,data=dataframe)
```




```
library("tidyverse")
```

To show the data in an interactive environment you can use the following code:

```
library("rmarkdown")
paged_table(mtcars)
```

5.6 Tables

Option	Description
data	path to data files to supply the data that will be passed into templates.

Option	Description
engine	engine to be used for processing templates. Handlebars is the default.
ext	extension to be used for dest files.

Right aligned columns

Option	Description
data	path to data files to supply the data that will be passed into templates.
engine	engine to be used for processing templates. Handlebars is the default.
ext	extension to be used for dest files.

Plant	Temp.	Growth
A	20	0.65
B	20	0.95
C	20	0.15

5.7 Links

link text

link with title

Autoconverted link https://github.com/nodeca/pica (enable linkify to see)

5.8 Images

Figure 1: This is a smaller picture of me

5.9 Formulas

When $a \neq 0$, there are two solutions to $(ax^2 + bx + c = 0)$ and they are

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

[1]Picture is taken from https://sites.google.com/view/stephanhuber

Figure 2: This is Prof. Dr. Stephan Huber[1]

5.10 Footnotes

Footnote 1 link[2].

Footnote 2 link[3].

Inline footnote[4] definition.

Duplicated footnote reference[5].

5.11 Citing Papers

You can cite papers like that: The book *R for Data Science* by Wickham and Grolemund (2018) is a good one. I am the author of Huber and Rust (2016).

In order to be able to do that you need to save the references in the reference.bib file that I mentioned in the header. I highly recommend using a bibliography manager such as www.jabref.org that allows to save and manage allbibliography entries.

5.12 Render everything

If you separately run this code, it will render the file and produce all the different formats that are mentioned in the preamble. Here the following file formats will be generated: pdf, html, and word.

```
setwd("/home/sthu/Dropbox/hsf/github/courses/rmd/")
rmarkdown::render("rmarkdown-template.Rmd", "all")
```

Literature

Google. 2023. "Google Search." Accessed January 30, 2023. https://www.google.com/.

Huber, Stephan, and Christoph Rust. 2016. "Calculate Travel Time and Distance with OpenStreetMap Data Using the Open Source Routing Machine (OSRM)." *The Stata Journal* 16 (2): 416–23.

[2]Footnote **can have markup** and multiple paragraphs.

[3]Footnote text.

[4]Text of inline footnote

[5]Footnote text.

Kirchkamp, Oliver. 2018. "Using Graphs and Visualising Data." Retrieved January 30, 2023. https://www.kirchkamp.de/oekonometrie/pdf/gra-p.pdf.

Wickham, Hadley, and Garrett Grolemund. 2018. *R for Data Science: Import, Tidy, Transform, Visualize, and Model Data*. Sebastopol, CA: O'Reilly.