

rmarkdown_pdf

Sébastien Renault

2018-09-06

Contents

| | |
|--------------------------------------|---|
| Different outputs | 1 |
| html document | 1 |
| Microsoft Word | 2 |
| Portable Document Format (.pdf) | 2 |
| Exercice 1 | 3 |
| Further customization | 3 |
| rticles | 3 |
| LaTeX template: manuscript | 4 |
| LaTeX template: CV | 5 |
| Presentations | 6 |
| Bookdown | 6 |

Different outputs

- There are five versions of this document. We will examine them:
 - *.Rmd*: The **R markdown** document.
 - *.html*: A webpage as we saw in the previous section. Follow workshop using this version.
 - *.docx*: A MS Word document.
 - *.tex*: A LaTeX document.
 - *.pdf*: A Portable Document Format.

html document

```
---
title: "rmarkdown_pdf"
author: "Sébastien Renault"
date: "2018-09-06"
output:
  html_document:
    toc: yes
    theme: cerulean
---
```

- You can specify it when you create a new **Rmarkdown** document.
- You can also specify it later in the header.
- Then, it's just a matter of knitting the document!

Microsoft Word

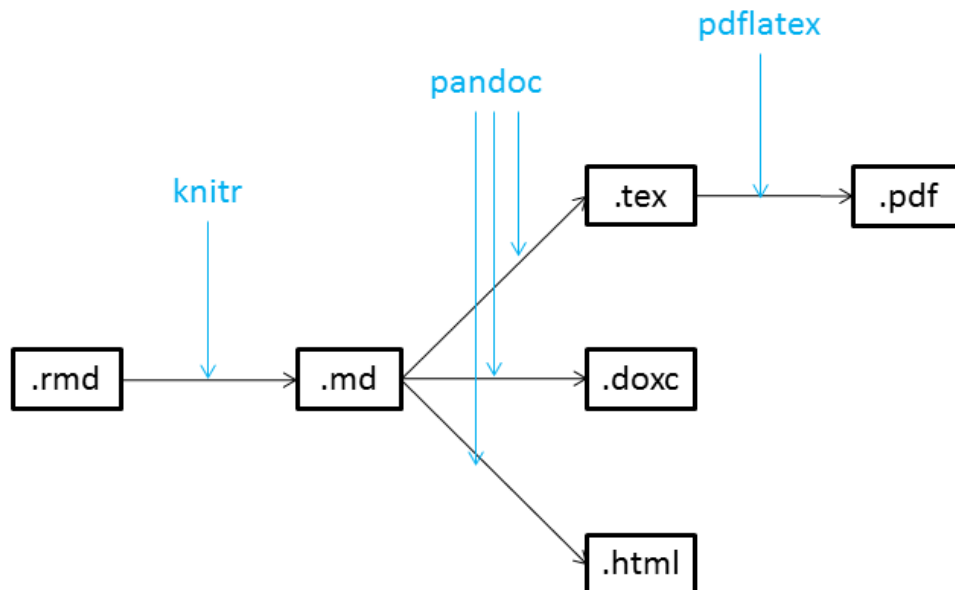
```
---
title: "rmarkdown_docx"
author: "Sébastien Renault"
date: '2018-09-06'
output:
  word_document:
    toc: yes
---
```


- Little documentation, few options & configurations are possible (This is probably not the format that should be promoted, as it moves away from an open source environment).
- Can specify a LibreOffice OpenDocument Text (output: `odt_document`) or Rich Text Format (output: `rtf_document`) instead.
- FYI, there is a spellchecker in Rstudio: Edit > Check Spelling...

Portable Document Format (.pdf)

```
---
title: "rmarkdown_pdf"
author: "Sébastien Renault"
date: '2018-09-06'
output:
  pdf_document:
    keep_tex: true
    toc: yes
---
```

- You need an extra step to go from a LaTeX (*.tex*) format to a *.pdf*. This is handled by the R `tinytex` `pdflatex` function in R.



- LaTeX software is a high-quality typesetting system.
- It is the *de facto* standard for the communication and publication of scientific documents.
- LaTeX is available as free software here.
- If interested, follow this discussion: *Why LaTeX is such a bloated system?*
- So... *TinyTeX* is a custom LaTeX distribution that is small in size (~150MB) but functions well in most cases, especially for R users .
-  **tinytex** is an R studio package that installs *TinyTeX*.
- You should know have all the tools to generate your fully reproducible manuscripts in R!

Exercise 1

- If you haven't done so, install the **tinytex** R package from the console and run `install_tinytex()`. It may take a few minutes to download and compile (~150MB).

```
install.packages("tinytex")
library(tinytex)
install_tinytex()
```

- Create a new document, compile it as *.pdf*.
 - Add a Table of Content.
 - Add a graphic.
- Now compile it as a Word document (*.docx*)
- Add some reference by specifying the `csl: ../csl/peerj.csl` and `bibliography: ../biblio/test_library.bib` in the header

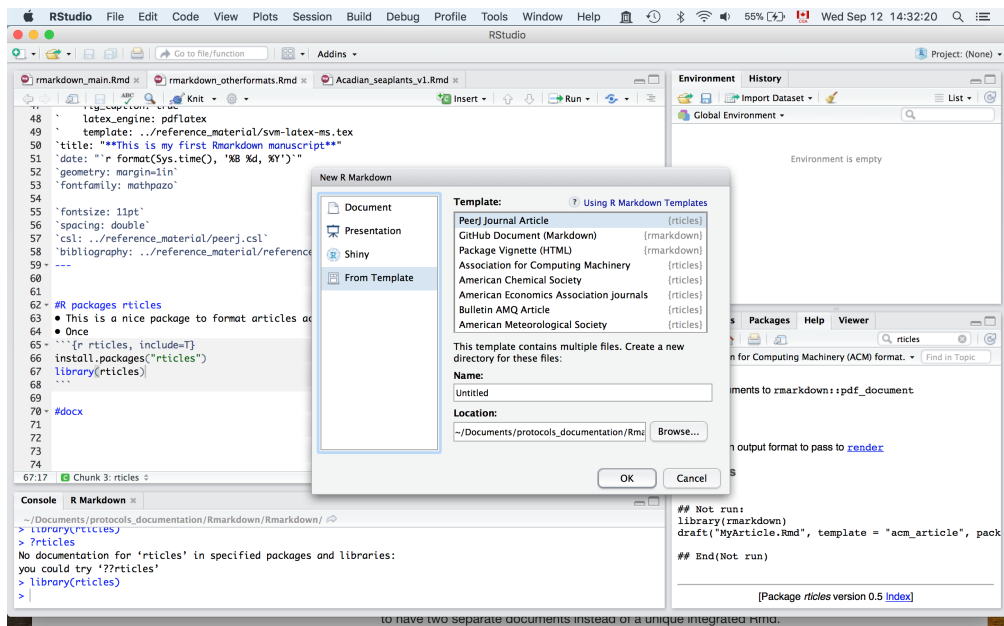
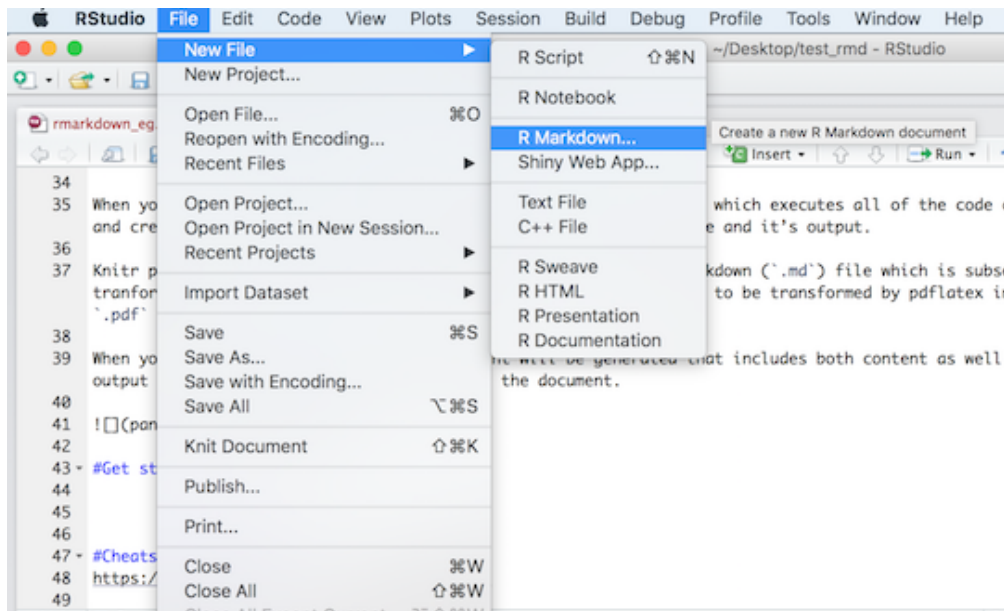
Further customization

rticles

- R packages **rticles** is a (potentially) useful package to format articles according to the specification of a journal.
- But first, you need to install it in the R console.

```
install.packages("rticles")
```


- Once installed, you can start a new R markdown document according to your journal of interest.



- Right now, few templates available.
- Some templates may be slower to render, depending on what *LaTeX* package they depend on and need to be installed.

LaTeX template: manuscript

- This allows further options in the *.Rmd* file when going from *.tex* file to *.pdf*.
- You can build your own *.tex* template if you know LaTeX...
- But, there are also many templates available on the web that you can use.

- Here is one I like for manuscripts (Thanks svmler on )
 - For example, using this template, I am writing a scientific paper entirely in R markdown.

1 A commercial seaweed extract strongly structured 2 microbial communities associated with tomato and 3 pepper roots and significantly increased crop yield

4 Sébastien Renault^{1,2}, Jacynthe Masse^{1,2}, Jeffrey P. Norrie³, Bachar Blal³ Mohamed Hijri^{1,2}

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6 4101 Sherbrooke Est, Montreal, H1X 2B2, Quebec, Canada. ²Quebec Centre for Biodiversity Science,
7 Montreal, Quebec, Canada ³Acadian Seaplant Ltd, 30 Brown Avenue, Dartmouth, Nova Scotia, Canada,
8 B3B 1X8

9 Seaweeds have been used as a source of natural fertilizer and biostimulant in agriculture
10 for centuries. However, their effects on soil and crop roots microbiota remain unclear.
11 Here, we used a commercially available *Ascophyllum nodosum* extract (ANE) to test its ef-
12 fect on bacterial and fungal communities of rhizospheric soils and roots of pepper and
13 tomato plants in greenhouse trials. Two independent trials were conducted in a split

- The only real objection I see, is integrating the comments of co-authors.

LaTeX template: CV

- Here is a template I like for *Curriculum Vitae*
 - For example, using this template, I re-wrote my CV to give it a fresh look!

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Employment

Research Professional, Université de Montréal, Montreal 2014-current

- Provide bioinformatics support and supervise graduate students
- Conduct multi-disciplinary research (microbial ecology, genomics, biodiversity)
- Lead, teach and organize training workshops
- Draft reports and grant applications

Education

Postdoctoral fellow, Biodiversity Research Centre, UBC, Vancouver

2010-2014

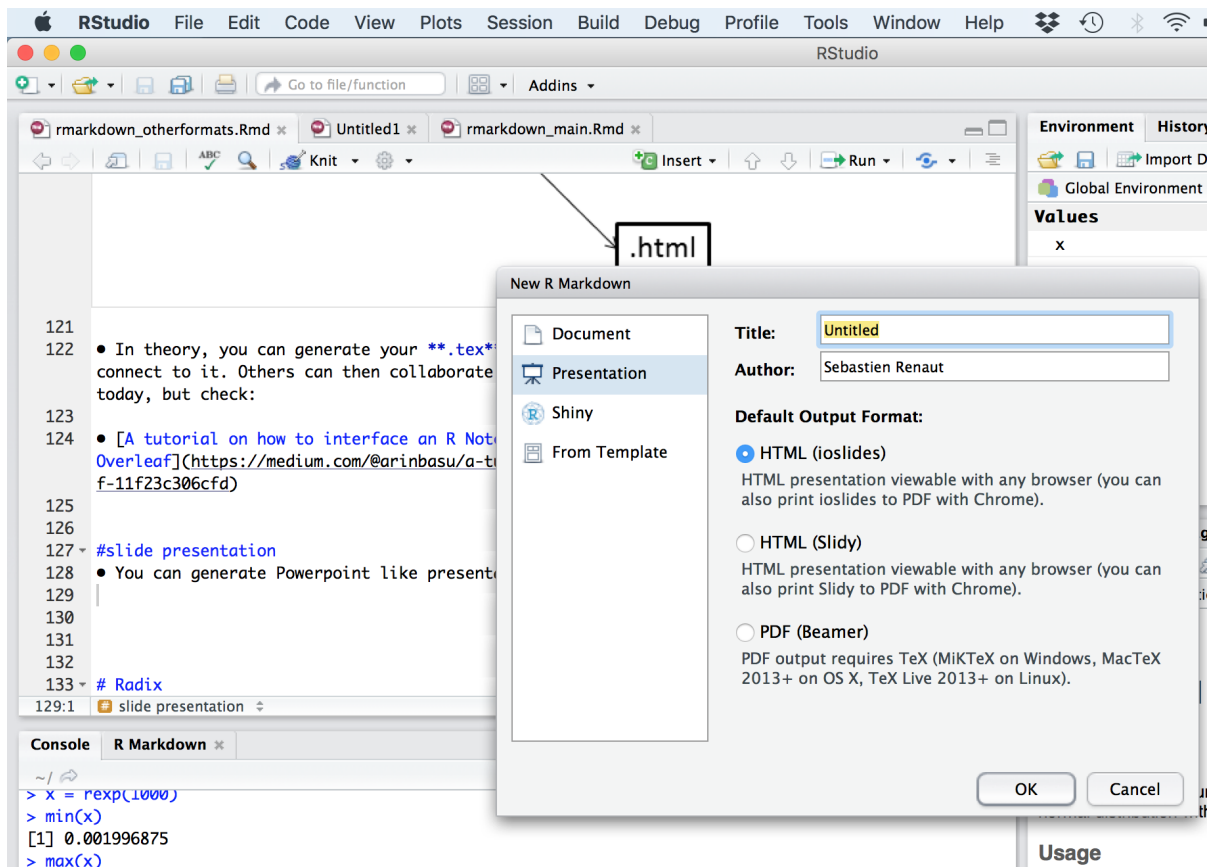
(supervisor: Dr. Loren Biesecker)

- Let's briefly examine and knit the *svm-rmarkdown-cv.Rmd* file in the `reference_material` directory.


Presentations

```
---
title: "Untitled"
author: "Sebastien Renault"
date: "27/02/2019"
output: ioslides_presentation
---
```

- You can also generate Powerpoint-like presentations.



Bookdown

- Bookdown  is an open-source R package that facilitates writing books and long-form articles/reports with R Markdown.

R Markdown: The Definitive Guide

Yihui Xie, J. J. Allaire, Garrett Golemund

2019-01-29

Preface

Note: This book has been published by [Chapman & Hall/CRC](#). The online version of this book is free to read here (thanks to Chapman & Hall/CRC), and licensed under the [Creative Commons Attribution-NonCommercial-ShareAlike 4.0 International License](#).

