Introdução à Linguagem de Programação em R

Dia 3

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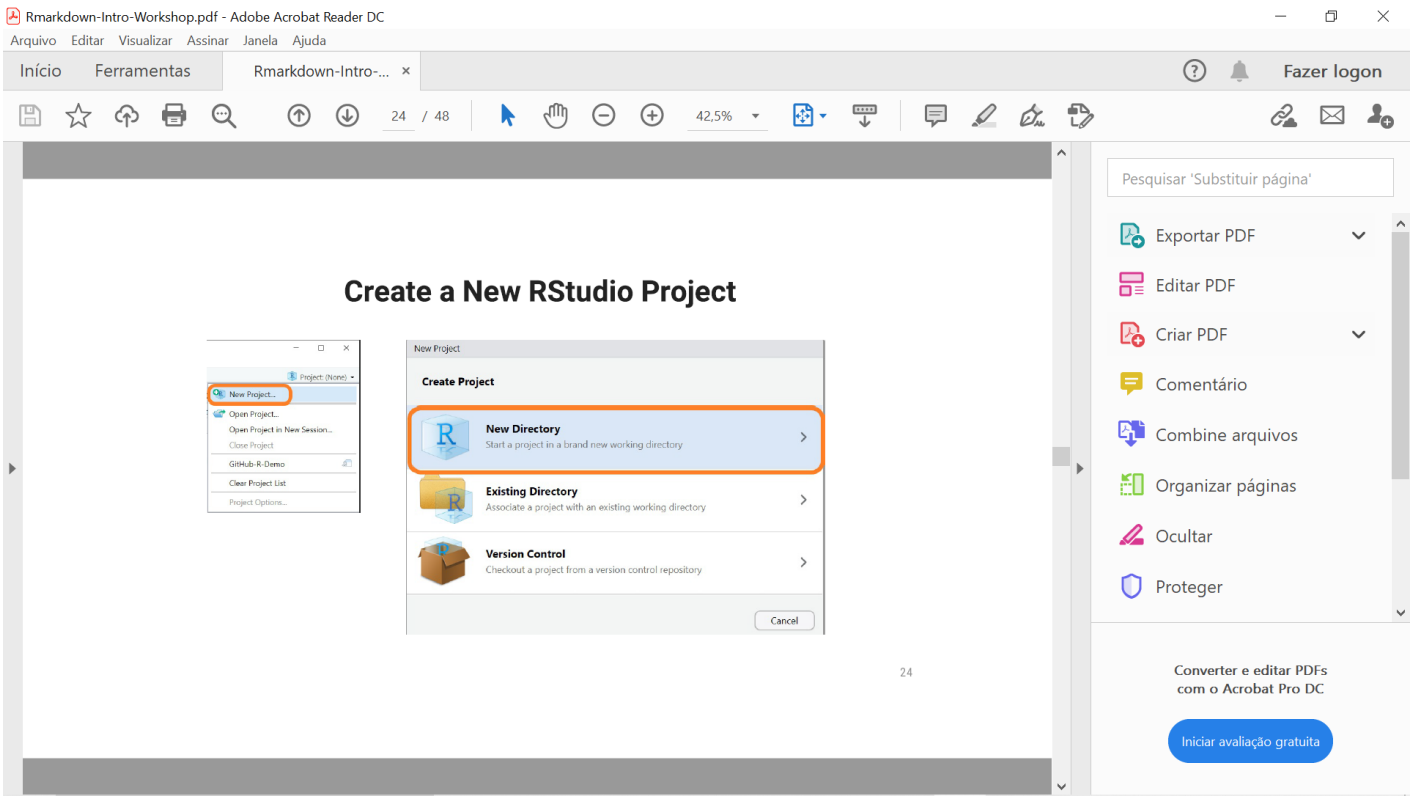
RStudio Projects

Put together in one place!!

RStudio Projects

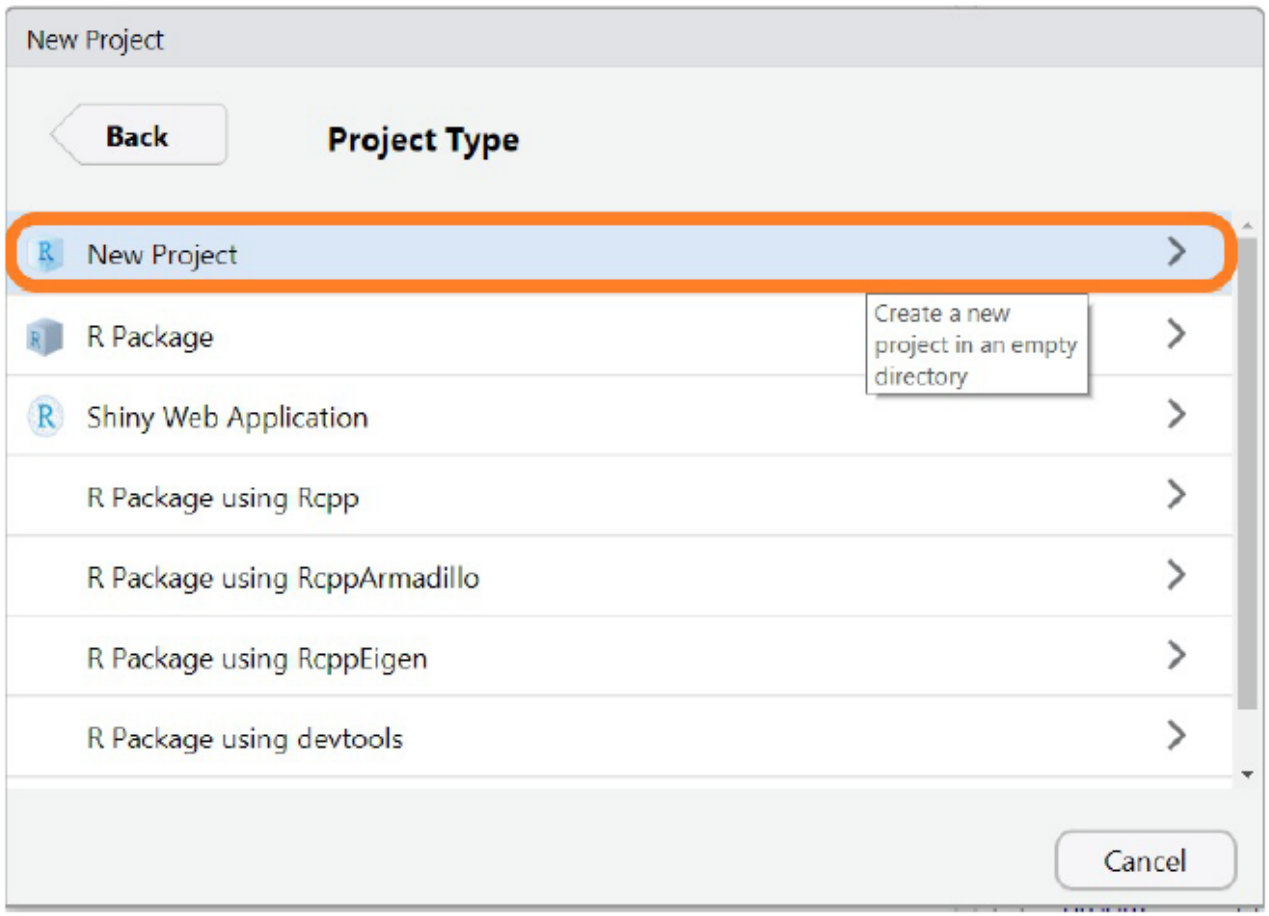
A project is simply a working directory designated with a `.RProj`
When you open a project (using File/Open Project in RStudio or by doubleclicking on the `.Rproj` file outside of R), the working directory will automatically be set to the directory that the `.RProj` file is located in.

RStudio Projects



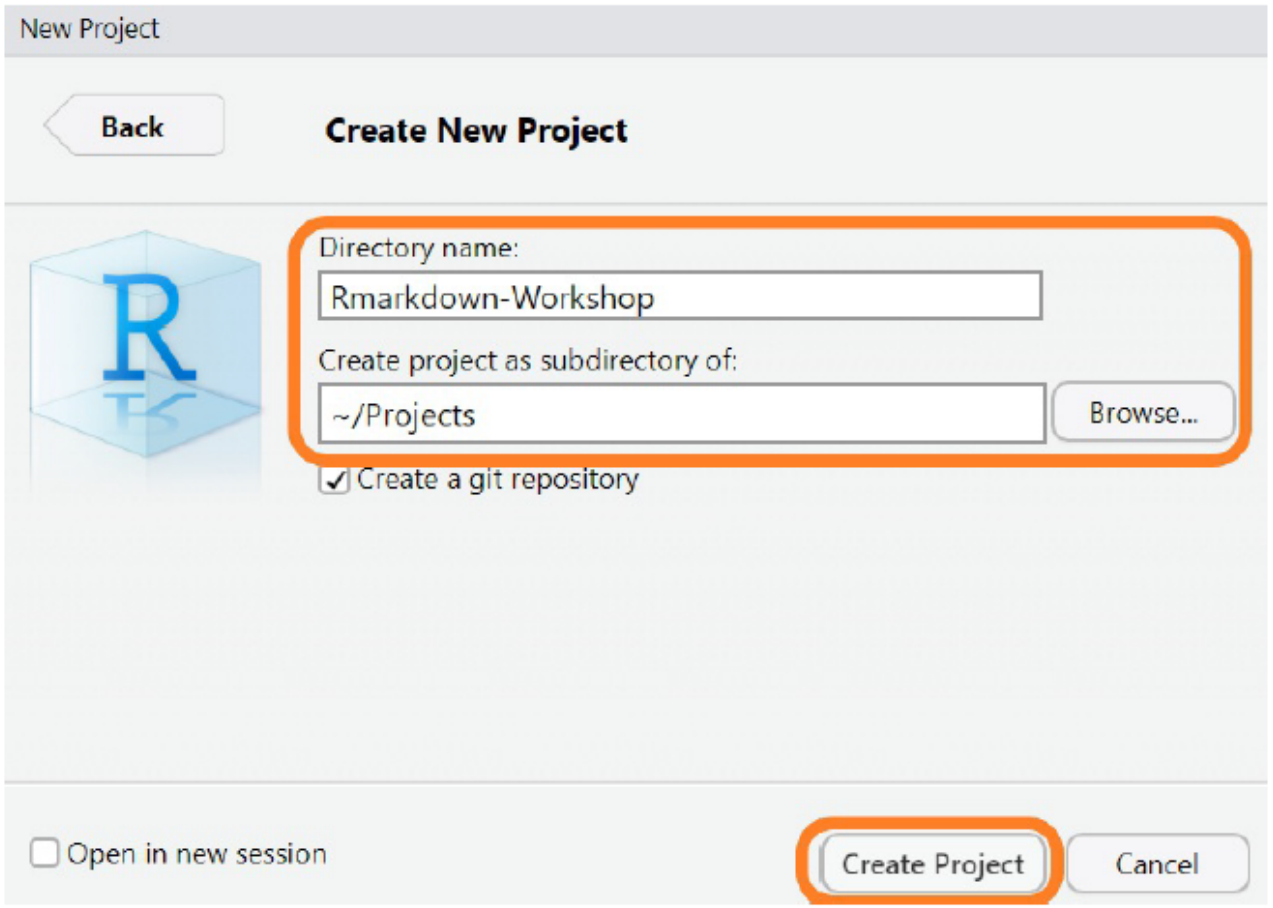
RStudio Projects

Select "New Project"

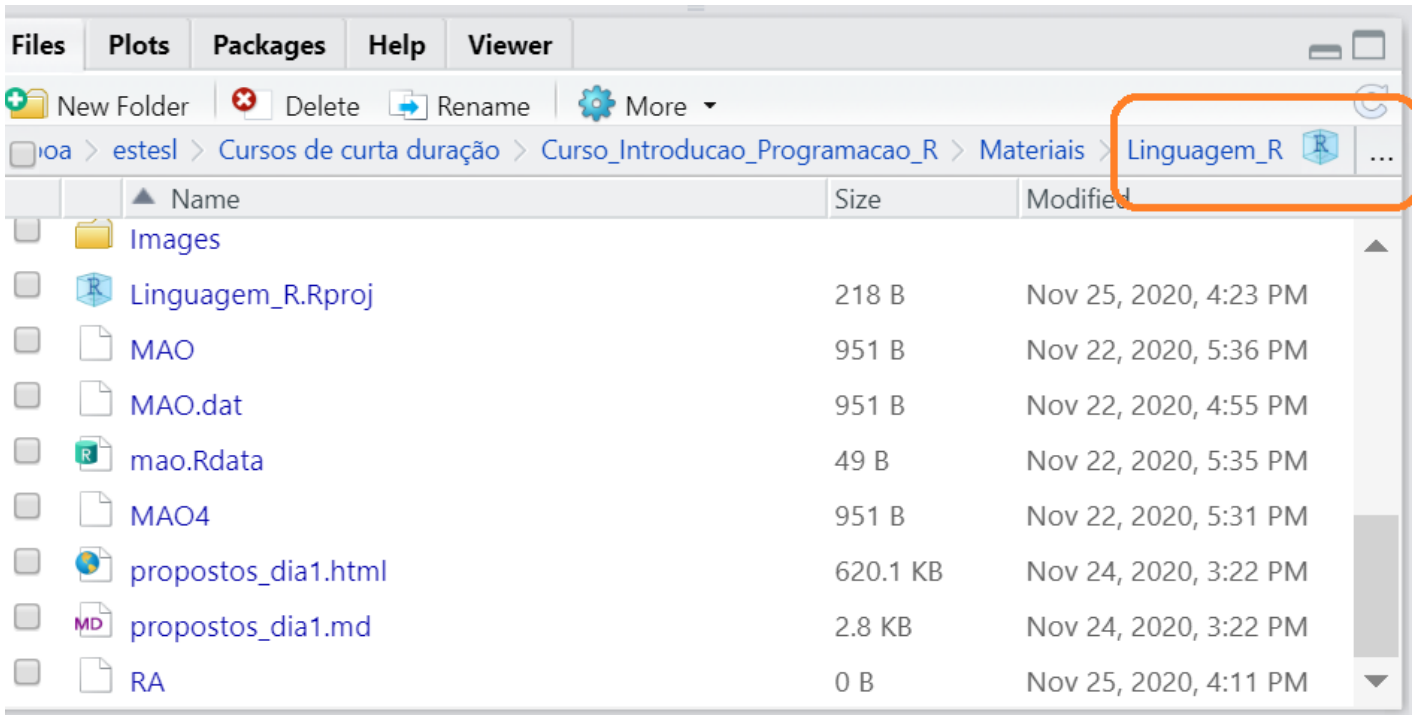


RStudio Projects

Define Directory Location



RStudio Projects



RStudio Projects

In summary, RStudio projects give you a solid workflow that will serve you well in the future:

- Create an RStudio project for each data analysis project.
- Keep data files there.
- Keep scripts there; edit them, run them.
- Save your outputs (plots and cleaned data) there.
- Everything you need is in one place, and cleanly separated from all the other projects that you are working on.

Writing beautiful documents!!!

Introduction

HTML "Analysis" Document

World Population Data
Exercise Questions
Read in the data
Pre-processing the Data
Exercise Answers
Portugal: 1950 v 2017
World Population
Population by Continent
Population by Country
Portugal: 1950 to 2015
High & Low Female Proportion
Portuguese Females Over Time

Read in the data

First load the `data.table` package (hint: use the `library()` function). Then use the `fread()` function to read in the data file `World-Population.csv` in an object called `un`. Finally look at the `un` dataset using the `str()` function.

```
library(data.table)
un <- fread("World-Population.csv")
un
```

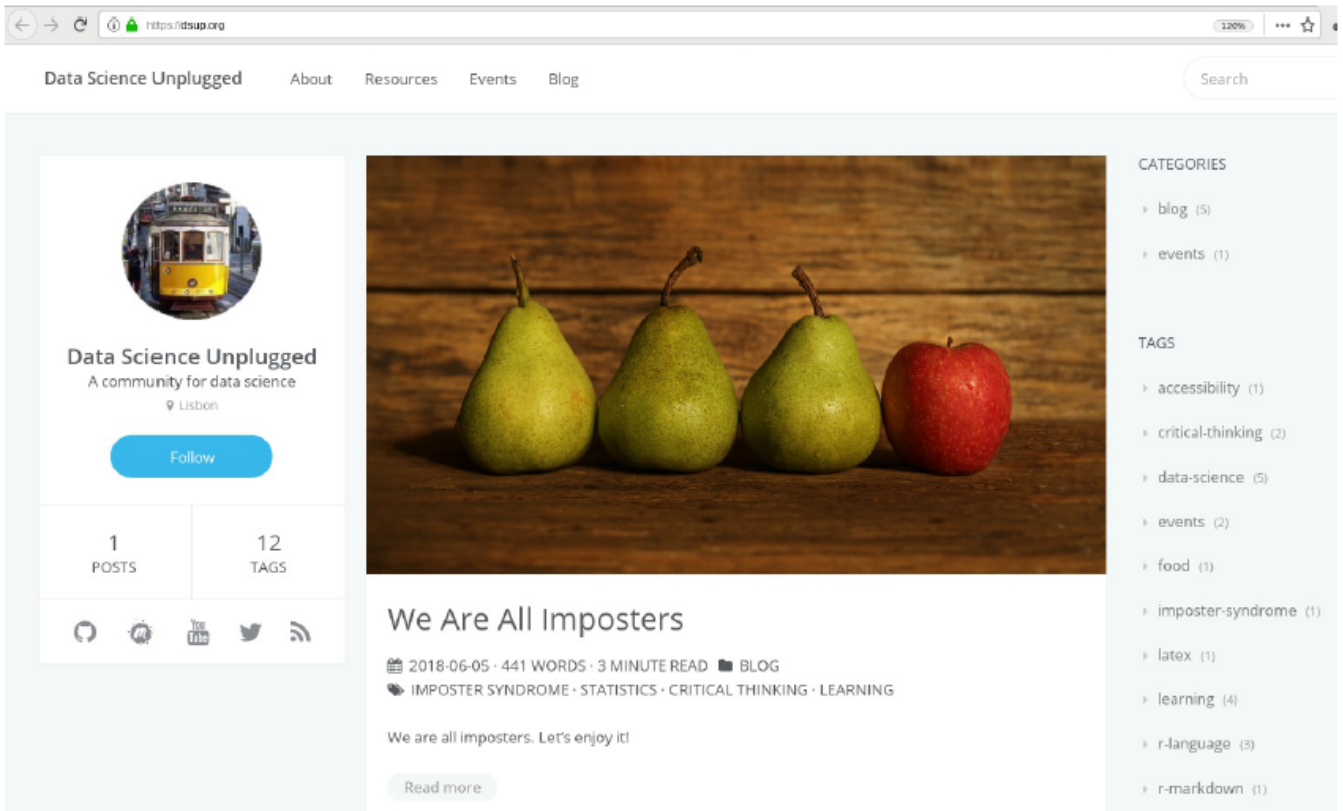
```
##         continent    Location Time AgeGrp AgeGrpStart PopFemale PopMale
##      1:      Asia Afghanistan 1950    0-4           0    661.58  630.04
##      2:      Asia Afghanistan 1950    5-9           5    487.33  516.21
##      3:      Asia Afghanistan 1950  10-14          10    423.33  461.38
##      4:      Asia Afghanistan 1950  15-19          15    369.36  414.37
##      5:      Asia Afghanistan 1950  20-24          20    318.39  374.11
##     ---
## 47942:    Africa      Zambia 2015  80-84          80     23.30   16.10
## 47943:    Africa      Zambia 2015  85-89          85      9.17    5.84
## 47944:    Africa      Zambia 2015  90-94          90      2.40    1.30
## 47945:    Africa      Zambia 2015  95-99          95      0.35    0.16
## 47946:    Africa      Zambia 2015   100+         100      0.03    0.01
```

```
str(un)
```

```
## Classes 'data.table' and 'data.frame':   47946 obs. of  7 variables:
##  $ continent  : chr  "Asia" "Asia" "Asia" "Asia" ...
##  $ Location   : chr  "Afghanistan" "Afghanistan" "Afghanistan" "Afghanistan" ...
##  $ Time       : int  1950 1950 1950 1950 1950 1950 1950 1950 1950 1950 ...
##  $ AgeGrp     : chr  "0-4" "5-9" "10-14" "15-19" ...
##  $ AgeGrpStart: int  0 5 10 15 20 25 30 35 40 45 ...
##  $ PopFemale  : num  662 487 423 369 318 ...
```

Introduction

HTML Website



Introduction

HTML Book

R Markdown: The Definitive Guide

Preface
How to read this book
Structure of the book
Software information and conventions
Acknowledgments
About the Authors
Yihui Xie
J.J. Allaire
Garrett Grolemund
I Get Started
1 Installation
2 Basics
2.1 Example applications
2.1.1 Airbnb's knowledge reposit...
2.1.2 Homework assignments on...
2.1.3 Personalized mail
2.1.4 2017 Employer Health Ben...

R Markdown: The Definitive Guide

Yihui Xie, J. J. Allaire, Garrett Grolemund

2019-06-03

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.

RMarkdown Formats

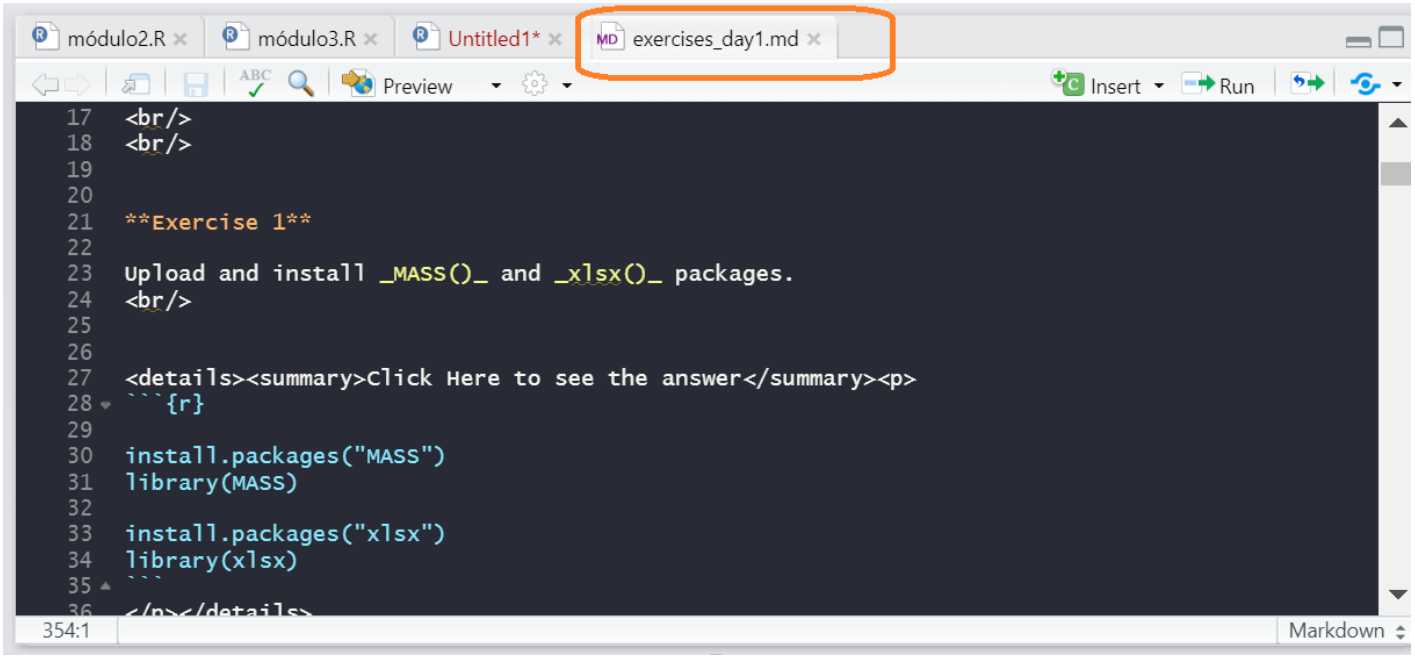
- HTML
- PDF
- Word
- PPT
- Dashboards
- Web Applications
- CVs

What is Markdown

Special computer language ("Markup")

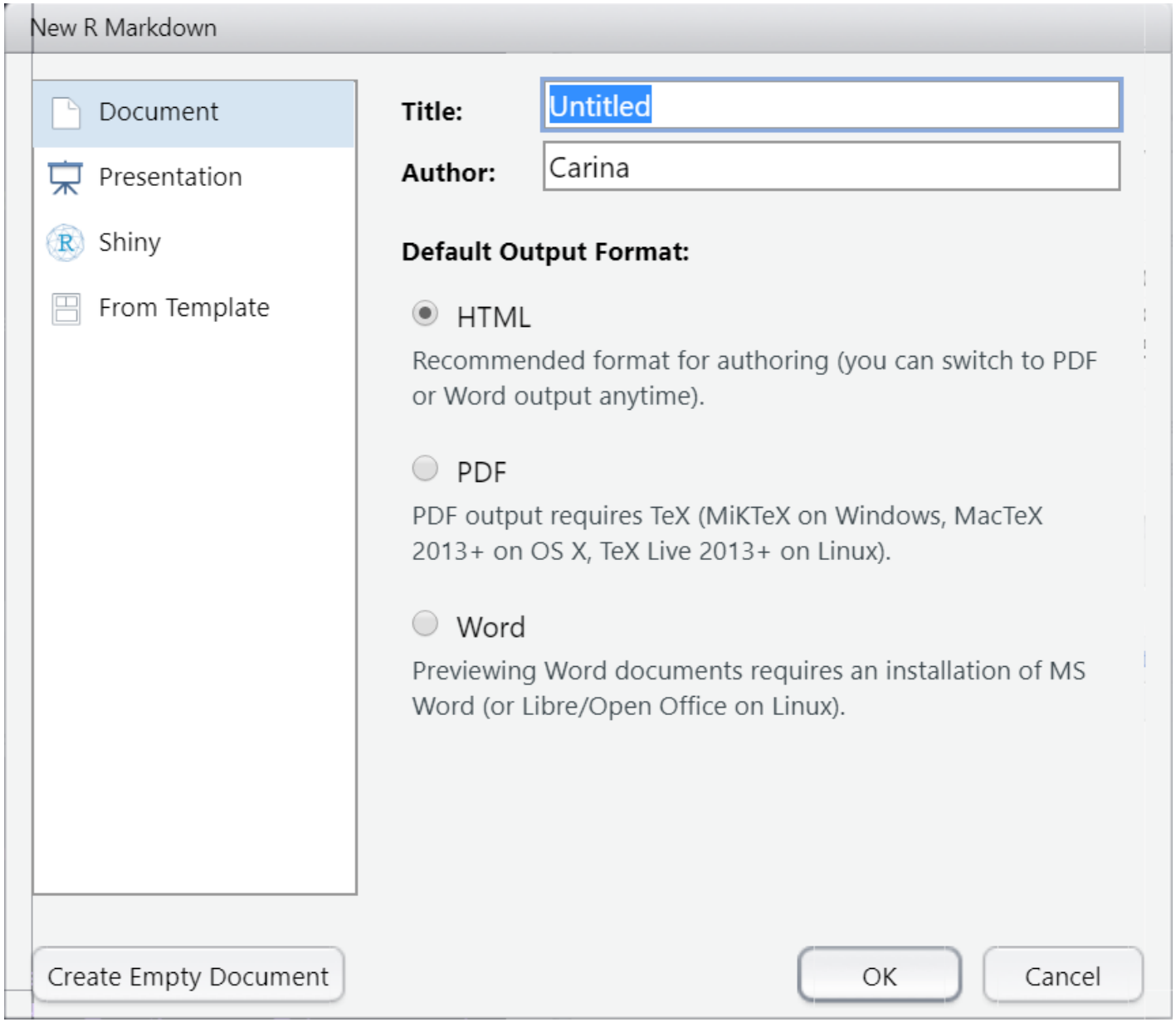
- Plain text with special syntax.
- Human readable.
- Converts HTML, PDF, ...

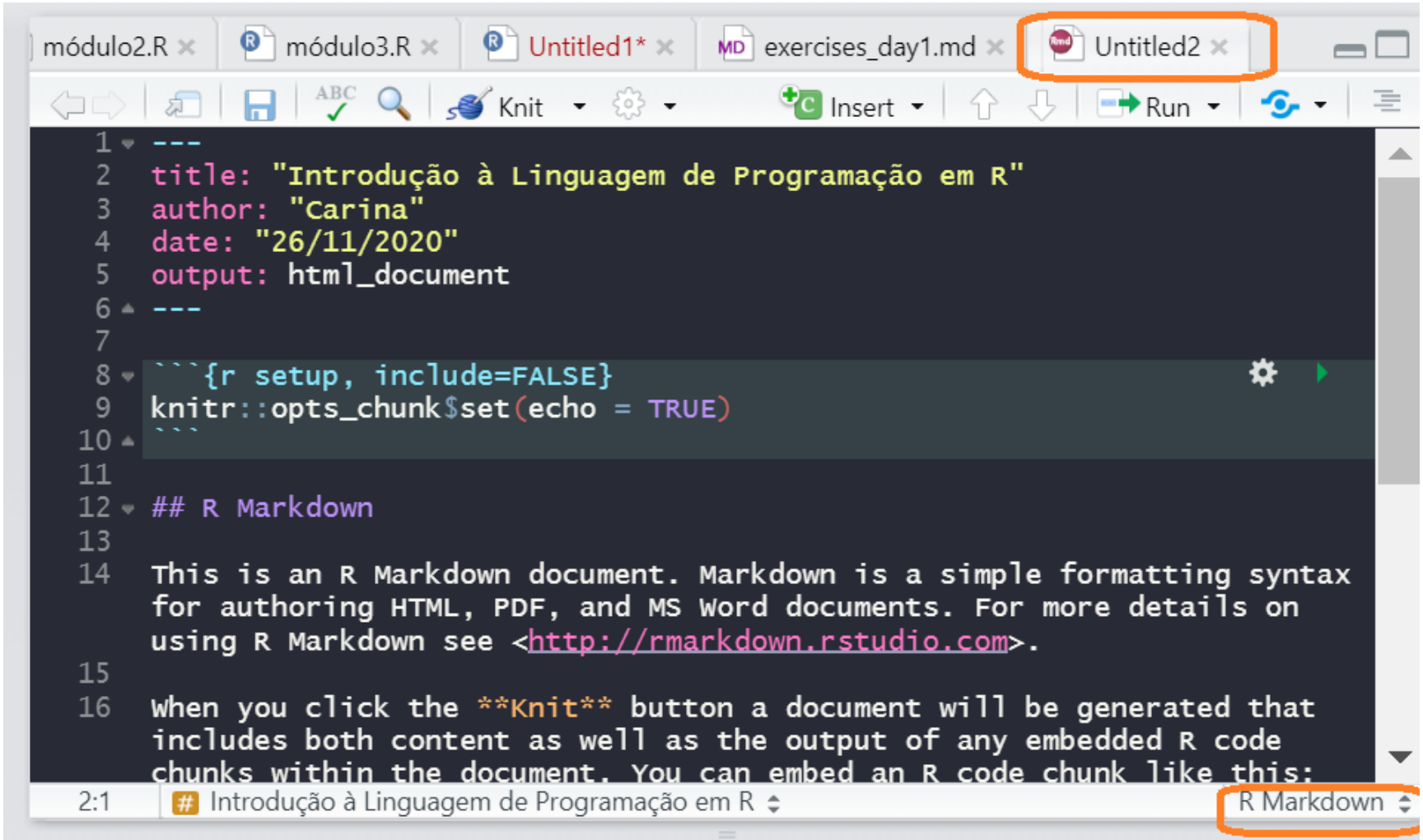
Markdown Example



What is R Markdown

- R code and documentation in one place.
- Great for doing reproducible research.
- Great for collaborating and sharing.
- Converts to HTML, websites, articles, books, ...


New R Markdown
Document
Presentation
Shiny
From Template
Title:
Untitled
Author:
Carina
Default Output Format:
HTML
Recommended format for authoring (you can switch to PDF or Word output anytime).
PDF
PDF output requires TeX (MiKTeX on Windows, MacTeX 2013+ on OS X, TeX Live 2013+ on Linux).
Word
Previewing Word documents requires an installation of MS Word (or Libre/Open Office on Linux).
Create Empty Document
OK
Cancel


módulo2.R
módulo3.R
Untitled1*
exercises_day1.md
Untitled2
Knit
Insert
Run
---
title: "Introdução à Linguagem de Programação em R"
author: "Carina"
date: "26/11/2020"
output: html_document

```{r setup, include=FALSE}
knitr::opts_chunk$set(echo = TRUE)
```
R Markdown
This is an R Markdown document. 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>.
When you click the **Knit** button a document will be generated that includes both content as well as the output of any embedded R code chunks within the document. You can embed an R code chunk like this:
2:1
Introdução à Linguagem de Programação em R
R Markdown

módulo2.R | módulo3.R | Untitled1* | exercises_day1.md | Untitled2

Knit | Insert | Run

```
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includes both content as well as the output of any embedded R code
chunks within the document. You can embed an R code chunk like this:
```

2:1 | Introdução à Linguagem de Programação em R | R Markdown

R Markdown

- File extension is `.Rmd`
- Top is YAML header
  - Descriptive information.
  - Format and style.
- Below the YAML header
  - markdown code.
  - R code chunks.

Markdown Components

- **Metadata**: written between a pair of three dashes —
- **Text**: regular text and math elements, plus tables, images and figures
- **Code:**
  - inline R code: `` `r  `` end with backtick `` ` ``
  - code chunk: starts with three backticks ```` ```r ```` where `r` indicates the language name and ends with three backticks ```` ``` ````.