

R Markdown Cheat Sheet

learn more at rmarkdown.rstudio.com

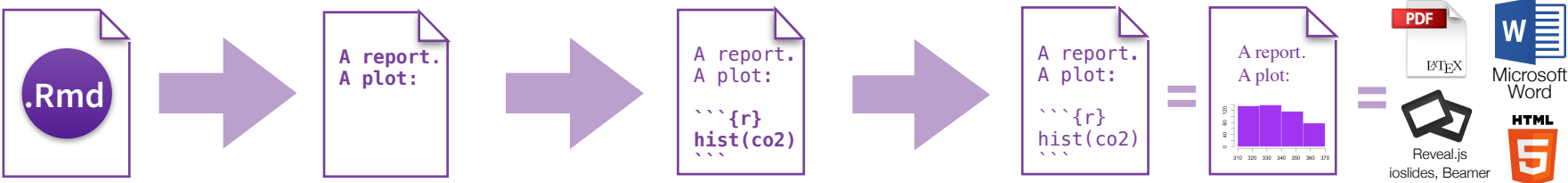
rmarkdown 0.2.50 Updated: 8/14



1. Workflow

R Markdown is a format for writing reproducible, dynamic reports with R. Use it to embed R code and results into slideshows, pdfs, html documents, Word files and more. To make a report:

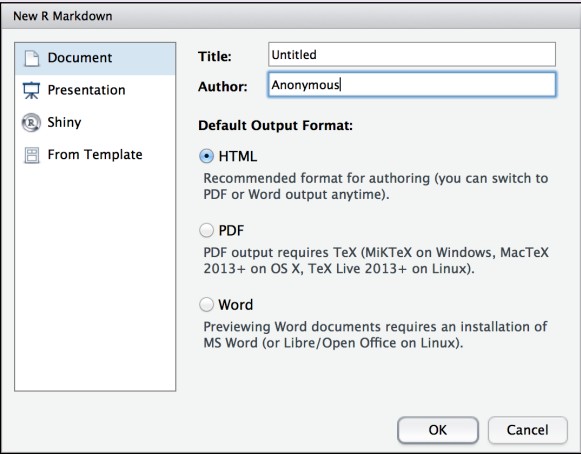
- i. Open** - Open a file that uses the .Rmd extension.
- ii. Write** - Write content with the easy to use R Markdown syntax
- iii. Embed** - Embed R code that creates output to include in the report
- iv. Render** - Replace R code with its output and transform the report into a slideshow, pdf, html or ms Word file.



2. Open File

Start by saving a text file with the extension .Rmd, or open an RStudio Rmd template

- In the menu bar, click **File ► New File ► R Markdown...**
- A window will open. Select the class of output you would like to make with your .Rmd file
- Select the specific type of output to make with the radio buttons (you can change this later)
- Click OK



3. Markdown

Next, write your report in plain text. Use markdown syntax to describe how to format text in the final report.

syntax

Plain text
End a line with two spaces to start a new paragraph.
italics and *_italics_*
****bold**** and **__bold__**
^{superscript^2^}
~~~strikethrough~~~  
[\[link\]\(www.rstudio.com\)](#)

# Header 1  
## Header 2  
### Header 3  
#### Header 4  
##### Header 5  
##### Header 6

endash: --  
emdash: ---  
ellipsis: ...  
inline equation:  $A = \pi * r^2$   
image: 

### becomes

Plain text  
End a line with two spaces to start a new paragraph.  
*italics* and *italics*  
**bold** and **bold**  
<sup>superscript<sup>2</sup></sup>  
~~strikethrough~~  
[link](#)

Header 1  
Header 2  
Header 3  
Header 4  
Header 5  
Header 6

endash: –  
emdash: —  
ellipsis: …  
inline equation:  $A = \pi * r^2$

## 4. Choose Output

Write a YAML header that explains what type of document to build from your R Markdown file.

### YAML

A YAML header is a set of key: value pairs at the start of your file. Begin and end the header with a line of three dashes (---)

```
---  
title: "Untitled"  
author: "Anonymous"  
output: html_document  
---
```

This is the start of my report. The above is metadata saved in a YAML header.

The RStudio template writes the YAML header for you

The output value determines which type of file R will build from your .Rmd file (in Step 6)

- output: html\_document** ..... html file (web page)
- output: pdf\_document** ..... pdf document
- output: word\_document** ..... Microsoft Word .docx
- output: beamer\_presentation** ..... beamer slideshow (pdf)
- output: ioslides\_presentation** ..... ioslides slideshow (html)



horizontal rule (or slide break):

\*\*\*

> block quote

\* unordered list  
\* item 2  
+ sub-item 1  
+ sub-item 2

1. ordered list  
2. item 2  
+ sub-item 1  
+ sub-item 2

| Table Header | Second Header |
|--------------|---------------|
| Table Cell   | Cell 2        |
| Cell 3       | Cell 4        |

block quote

- unordered list
- item 2
  - sub-item 1
  - sub-item 2

1. ordered list  
2. item 2

- sub-item 1
- sub-item 2

| Table Header | Second Header |
|--------------|---------------|
| Table Cell   | Cell 2        |
| Cell 3       | Cell 4        |

## 5. Embed Code

Use knitr syntax to embed R code into your report. R will run the code and include the results when you render your report.

### inline code

Surround code with back ticks and `r`. R replaces inline code with its results.

Two plus two equals ``r 2 + 2``.

Two plus two equals 4.

### code chunks

Start a chunk with ````{r}`.  
End a chunk with `````.

Here's some code  
````{r}  
dim(iris)  
````

Here's some code

```
dim(iris)
```

```
## [1] 150 5
```

### display options

Use knitr options to style the output of a chunk. Place options in brackets above the chunk.

Here's some code  
````{r eval=FALSE}  
dim(iris)  
````

Here's some code

```
dim(iris)
```

Here's some code  
````{r echo=FALSE}  
dim(iris)  
````

Here's some code

```
## [1] 150 5
```

| option     | default  | effect                                                    |
|------------|----------|-----------------------------------------------------------|
| eval       | TRUE     | Whether to evaluate the code and include its results      |
| echo       | TRUE     | Whether to display code along with its results            |
| warning    | TRUE     | Whether to display warnings                               |
| error      | FALSE    | Whether to display errors                                 |
| message    | TRUE     | Whether to display messages                               |
| tidy       | FALSE    | Whether to reformat code in a tidy way when displaying it |
| results    | "markup" | "markup", "asis", "hold", or "hide"                       |
| cache      | FALSE    | Whether to cache results for future renders               |
| comment    | "##"     | Comment character to preface results with                 |
| fig.width  | 7        | Width in inches for plots created in chunk                |
| fig.height | 7        | Height in inches for plots created in chunk               |

For more details visit [yihui.name/knitr/](http://yihui.name/knitr/)

## 6. Render

Use your .Rmd file as a blueprint to build a finished report.

Render your report in one of two ways

1. Run `rmarkdown::render("<file path>")`
2. Click the **knit HTML** button at the top of the RStudio scripts pane



When you render, R will

- execute each embedded code chunk and insert the results into your report
- build a new version of your report in the output file type
- open a preview of the output file in the viewer pane
- save the output file in your working directory

## 7. Interactive Docs

Turn your report into an interactive Shiny document in 3 steps

1 Add **runtime: shiny** to the YAML header

```
---  
title: "Line graph"  
output: html_document  
runtime: shiny  
---
```

2 In the code chunks, add Shiny **input** functions to embed widgets. Add Shiny **render** functions to embed reactive output

```
---  
title: "Line graph"  
output: html_document  
runtime: shiny  
---  
  
Choose a time series:  
```{r echo = FALSE}  
selectInput("data", "",  
  c("co2", "lh"))  
```  
  
See a plot:  
```{r echo = FALSE}  
renderPlot({  
  d <- get(input$data)  
  plot(d)  
})
```

3 Render with **rmarkdown::run** or click **Run Document** in RStudio



\* Note: your report will be a Shiny app, which means you must choose an html output format, like **html\_document** (for an interactive report) or **ioslides\_presentation** (for an interactive slideshow).

## 8. Publish

Share your report where users can visit it online

### Rpubs.com

Share non-interactive documents on RStudio's free R Markdown publishing site  
[www.rpubs.com](http://www.rpubs.com)

### ShinyApps.io

Host an interactive document on RStudio's server. Free and paid options  
[www.shinyapps.io](http://www.shinyapps.io)

Click the "Publish" button in the RStudio preview window to publish to [rpubs.com](http://rpubs.com) with one click.



## 9. Learn More

Documentation and examples - [rmarkdown.rstudio.com](http://rmarkdown.rstudio.com)

Further Articles - [shiny.rstudio.com/articles](http://shiny.rstudio.com/articles)

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