

# R Markdown

R for Data Science workshop

2019-05-01 (updated: 2019-05-16)

# R Markdown

## Outline

- Overview
- R Markdown basics
- Code chunks
- YAML header

# Data science workflow



Image source: [R for Data Science](#) by Hadley Wickham & Garrett Golemund.

# Data science workflow

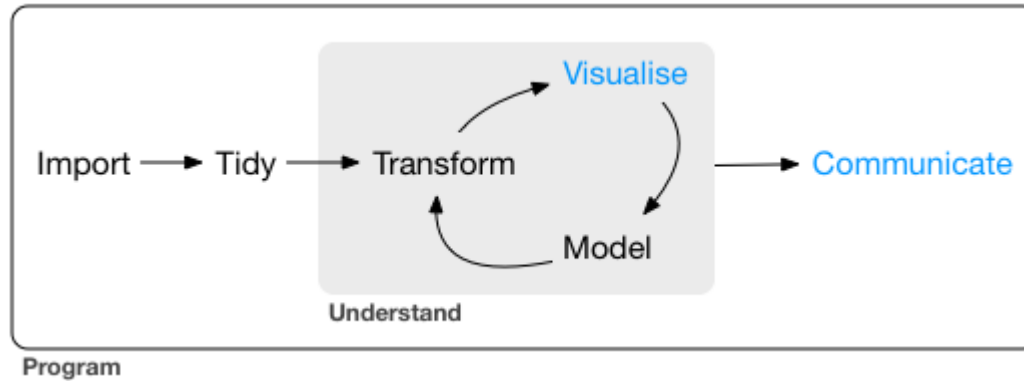


Image source: [R for Data Science](#) by Hadley Wickham & Garrett Golemund.

# R Markdown Overview

Use cases:

- Communicating with decision makers
- Collaborating with other data scientists
- Environment for *doing* data science

# Reproducible research

```
Karl -- this is very interesting,  
however you used an old version of  
the data (n=143 rather than n=226).
```

```
I'm really sorry you did all that  
work on the incomplete dataset.
```

```
Bruce
```

# R Markdown basics

Many output formats are available. See [Formats](https://rmarkdown.rstudio.com/Formats) at [rmarkdown.rstudio.com](https://rmarkdown.rstudio.com).

# R Markdown basics

Plain text file with extension *.Rmd*

## Three types of content

1. Optional **YAML** header
2. **Chunks** of R code
3. Text with **Markdown** formatting

## "Knitting" with **knitr**





# R Markdown basics

Markdown Quick Reference in RStudio Help

Demo

# Code chunks

**knitr** provides almost 60 options for code chunks.

RStudio provides help for the most common ones.

Inline code too.

## Demo

Couldn't figure out how to display markdown in markdown. 😊

# YAML header

- Used for "whole document" settings.
- Can use it to parameterize a document.

```
title: "Parameters example"
output: html_document
params:
  year: 2019
---
```

- Knit with parameters or

```
rmarkdown::render("my-report.Rmd", params = list(year = 2019))
```

In the document, use parameters like this in a code chunk:

```
filter(year == params$year)
```

- Much more

# R Markdown resources

- Extensive documentation and examples at [rmarkdown.rstudio.com](https://rmarkdown.rstudio.com)
- [R Markdown: The Definitive Guide](#) by Yihui Xie, J. J. Allaire, Garrett Grolemund

# Your turn

## R Markdown

- Create a new R Markdown document with *File > New File > R Markdown...*
- Knit it by clicking the appropriate button.
- Knit it by using the appropriate keyboard short cut.
- Verify that you can modify the input and see the output update.