Duke_2026_demo_report

Test your knowledge

Type your name

2026-01-17

Contents

0.1 Goals

1. Give you a sense for what is possible with `R Markdown`
2. Show you the basic components so you can publish your work online
3. Build something quickly and share your progress!

In the longer term: Use this file and tutorial as a starting point, then go to YouTube, Google or your preferred AI to keep going. Ideally, you'll be able to articulate what you want a little better after this tutorial.

Remember: Almost nothing works well the first time. It just needs to work well enough for you to learn something and prove a concept. This tutorial is meant to be rough and ready ™. It's okay if you're unsure about some part of the process. Getting comfortable will take time.

0.2 Components of an R based report

1. An R Markdown file (.Rmd)
    - i.e. this file that
    - Contains all the pieces we need and will be render into our outputs (PDF, HTML, Word,)
    - **make a new .RmD file in R studio -> 'click' `file` -> `new file` -> `R Markdown`**
2. YAML code (lives in the .Rmd)
    - lives at the top of the Rmd file
    - sets the outputs for making PDFs, HTML, Word docs, etc
3. Markdown code (lives in the .Rmd)
    - all of your text is written in markdown
    - See RMarkdown documentation for help in the future: https://rmarkdown.rstudio.com/lesson-1.html
    - Download the Cheatsheet
4. R code (lives in the .Rmd)
    - data
    - calculations
    - graphs and data viz
5. Outputs (what you publish/share)
    - PDF
    - Word

- HTML (website)
- Graphs (PNG/JPG)

6. Publishing (if we have time)
   - Github Pages
   - Free forever, and relatively easy to use!
   - Publishing your work in github pages

0.3 Coding in R and annotating w/ Markdown

0.4 Reference later

0.4.1 Keyboard Shortcuts

- Make a new code chunk (Command + Option + I)
- Assign a new variable (Option + Dash)

0.4.2 Code Chunk Options

Chunk option	What it controls	Why it matters in reports	Plain-language explanation
`echo`	Whether the R code is shown	Separates analysis from presentation	Show or hide the code
`eval`	Whether the code is executed	Lets you display example code without running it	Run this code or not
`message`	Package and function messages	Keeps output clean and professional	Hide messages like "Attaching package..."
`warning`	Warning messages	Prevents confusing output for readers	Show or hide warnings
`include`	Whether code *and* results appear	Allows silent background computation	Run this but don't show anything
`results`	How printed output is treated	Required for tables and formatted text	Control how output is displayed
`fig.width` / `fig.height`	Figure size (in inches)	Ensures readable, publication-ready figures	Control plot size
`fig.cap`	Figure caption text	Enables figure numbering and captions	Text shown under the figure
`cache`	Whether results are saved	Speeds up slow reports	Don't re-run unless code changes
`error`	Behavior when errors occur	Useful for teaching and debugging	Keep knitting even if this fails

```
lm(y ~ x, data = df)
```

0.5 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.

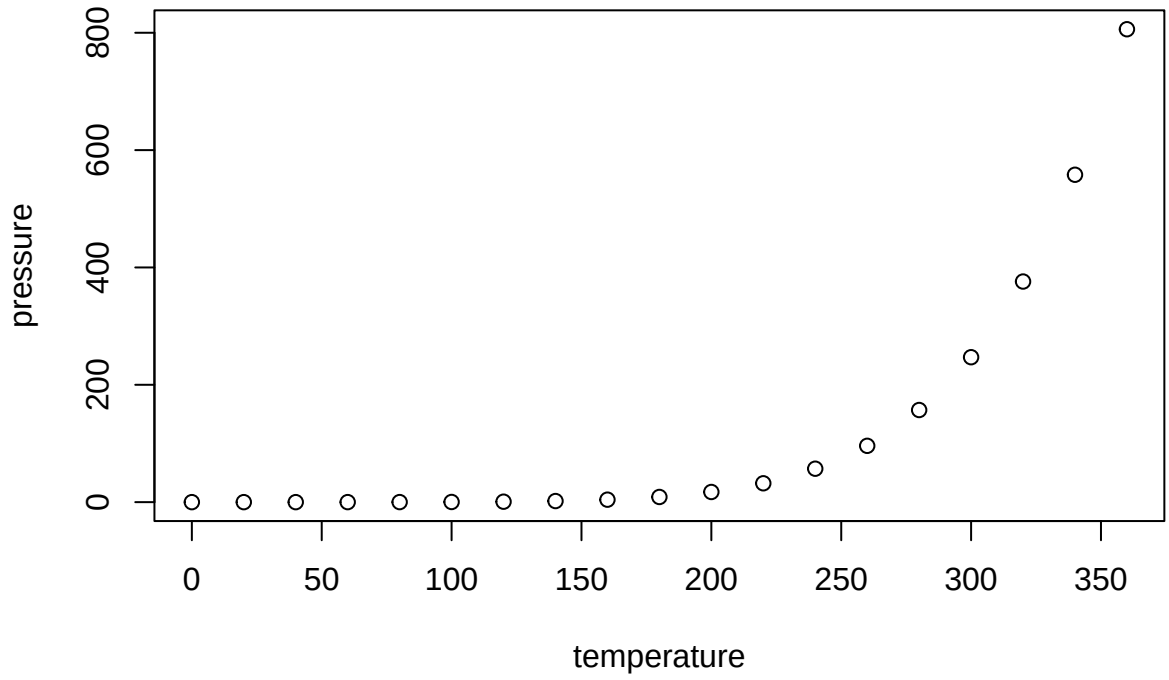
When you click the **Knit** button a document will be generated that includes both content as well as the output of any embedded R code chunks within the document. You can embed an R code chunk like this:

```
##      speed           dist
##  Min.   : 4.0   Min.   :  2.00
```

```
##  1st Qu.:12.0   1st Qu.: 26.00
##  Median :15.0   Median : 36.00
##  Mean   :15.4   Mean   : 42.98
##  3rd Qu.:19.0   3rd Qu.: 56.00
##  Max.   :25.0   Max.   :120.00
```

0.6 Including Plots

You can also embed plots, for example:



Note that the `echo = FALSE` parameter was added to the code chunk to prevent printing of the R code that generated the plot.