

Interactive, annotatable, code-driven presentations

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1 The inspiration!

Figure 1 (somewhere in this document)

- Creating Visualizations with D3 by Eamonn Maguire

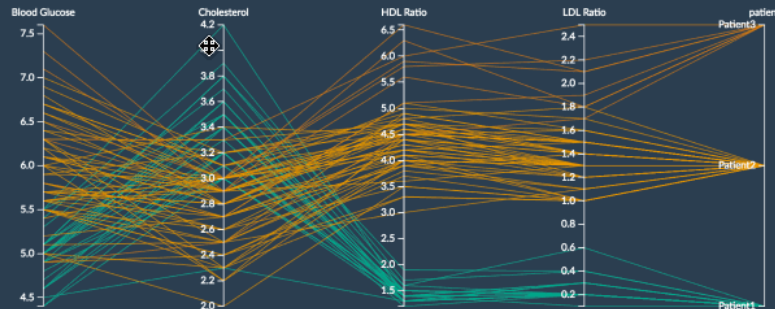
2 Using R code in your presentation

2.1 Example of some code

```
summary(mtcars)
```

```
##      mpg          cyl          disp          hp
##  Min.   :10.40   Min.    :4.000   Min.    : 71.1   Min.    : 52.0
## 1st Qu.:15.43   1st Qu.:4.000   1st Qu.:120.8   1st Qu.: 96.5
## Median :19.20   Median :6.000   Median :196.3   Median :123.0
## Mean   :20.09   Mean    :6.188   Mean    :230.7   Mean    :146.7
## 3rd Qu.:22.80   3rd Qu.:8.000   3rd Qu.:326.0   3rd Qu.:180.0
## Max.   :33.90   Max.    :8.000   Max.    :472.0   Max.    :335.0
##      drat          wt          qsec          vs
##  Min.   :2.760   Min.    :1.513   Min.    :14.50   Min.    :0.0000
```

Parallel Coordinates



Simply uses some of the techniques already shown here - scales, and brushing. Let's check
the code.

Figure 1: D3 visualisations by Eamonn Maguire

```
## 1st Qu.:3.080 1st Qu.:2.581 1st Qu.:16.89 1st Qu.:0.0000
## Median :3.695 Median :3.325 Median :17.71 Median :0.0000
## Mean :3.597 Mean :3.217 Mean :17.85 Mean :0.4375
## 3rd Qu.:3.920 3rd Qu.:3.610 3rd Qu.:18.90 3rd Qu.:1.0000
## Max. :4.930 Max. :5.424 Max. :22.90 Max. :1.0000
## am gear carb
## Min. :0.0000 Min. :3.000 Min. :1.000
## 1st Qu.:0.0000 1st Qu.:3.000 1st Qu.:2.000
## Median :0.0000 Median :4.000 Median :2.000
## Mean :0.4062 Mean :3.688 Mean :2.812
## 3rd Qu.:1.0000 3rd Qu.:4.000 3rd Qu.:4.000
## Max. :1.0000 Max. :5.000 Max. :8.000
```

2.2 Inline code

So, $\sqrt{81} \cdot 4 \cdot \pi$ becomes 113.0973355.

2.3 Import some data

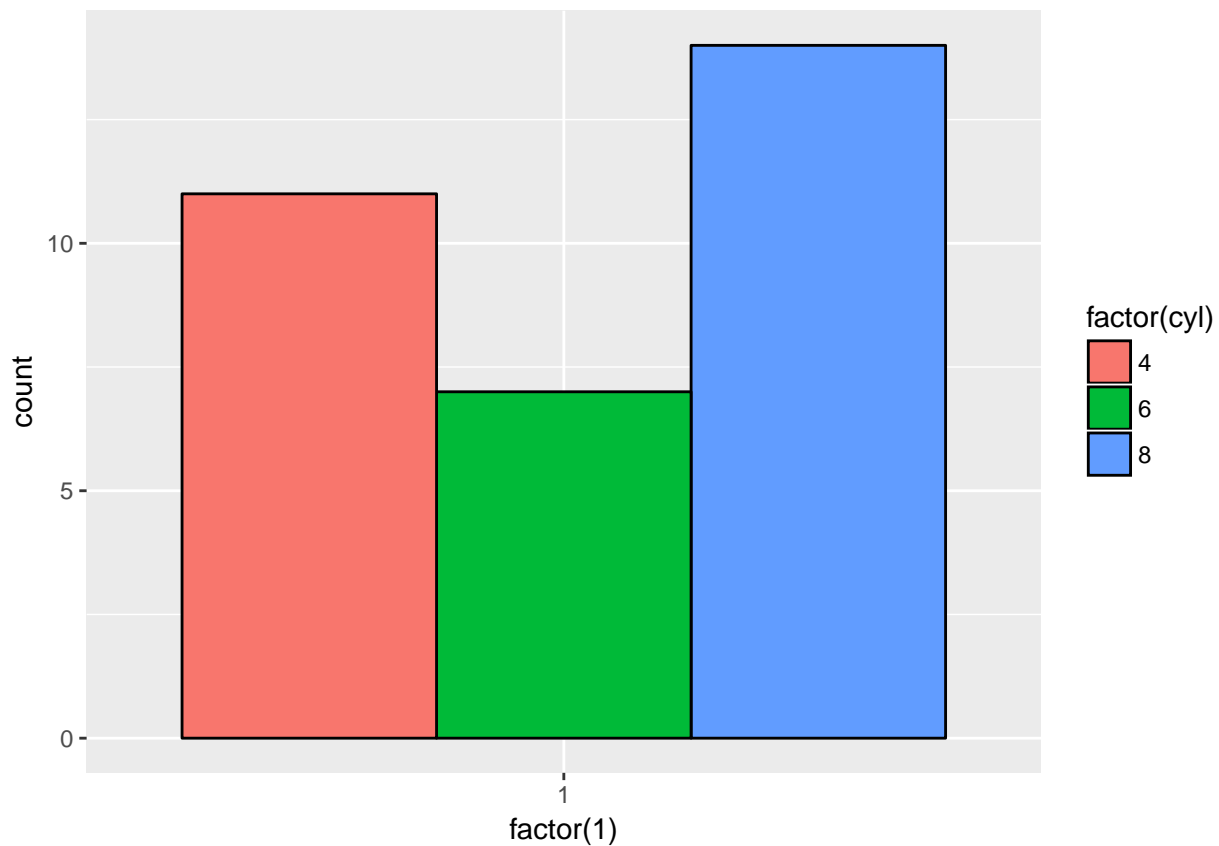
```
I_jean <- read.delim("http://bit.ly/avml_ggplot2_data")
head(I_jean)
```

```
## Name Age Sex Word FolSegTrans Dur_msec F1 F2 F1.n
## 1 Jean 61 f I'M M 130 861.7 1335.8 1.6608625
```

```
## 2 Jean 61 f I N 140 1010.4 1349.3 2.6882695
## 3 Jean 61 f I'LL L 110 670.1 1292.7 0.3370482
## 4 Jean 61 f I'M M 180 869.8 1307.0 1.7168275
## 5 Jean 61 f I R 80 743.0 1418.7 0.8407333
## 6 Jean 61 f I'VE V 120 918.2 1580.8 2.0512357
## F2.n
## 1 -0.8855366
## 2 -0.8536494
## 3 -0.9873394
## 4 -0.9535626
## 5 -0.6897257
## 6 -0.3068434
```

- Source: <https://jofrhwld.github.io/avml2012/>

2.4 Static plots (only)



3 Making a reveal.js presentation

3.1 R Markdown with embedded R code

- Source
- Hosted on GitHub: [RaoOfPhysics/contained-revealr](https://github.com/RaoOfPhysics/contained-revealr)

- Displayed using GitHub Pages: raoofphysics.github.io/contained-revealr
- Annotatable using Hypothesis:
 - Add `<script src="https://hypothes.is/embed.js" async></script>`

3.2 The source file itself

- Create a new R Markdown file named `index.Rmd`
 - Select `reveal.js` from templates
- Add YAML frontmatter!
- Instructions for `reveal.js` presentations: rmarkdown.rstudio.com/revealjs_presentation_format.html
- Create sections and add content+code
- Knit your presentation!

4 “But I hate / don’t use R...”

4.1 Other “engines” for code chunks

Language	In RMarkdown	Plotly available
Python	Yes	Yes
JavaScript	Yes	Yes
SQL	Yes	No
Bash	Yes	No

More: http://rmarkdown.rstudio.com/authoring_knitr_engines.html

5 “But I don’t want to install R and its packages...”

5.1 RStudio via Docker

Figure 2 (somewhere in this document)

5.2 Using RStudio in your browser

- **Caveat!** Non-R engines don’t work out of the box
- Create a directory for your project
- Add this `Dockerfile` and this `docker-compose.yml` to the directory
- Run `$ docker-compose up -d`
- Open RStudio in your browser at `localhost:8787` or `0.0.0.0:8787`
- Log in with “`rstudio`” as both the username and password
- To shutdown: `$ docker-compose down`

6 Questions?

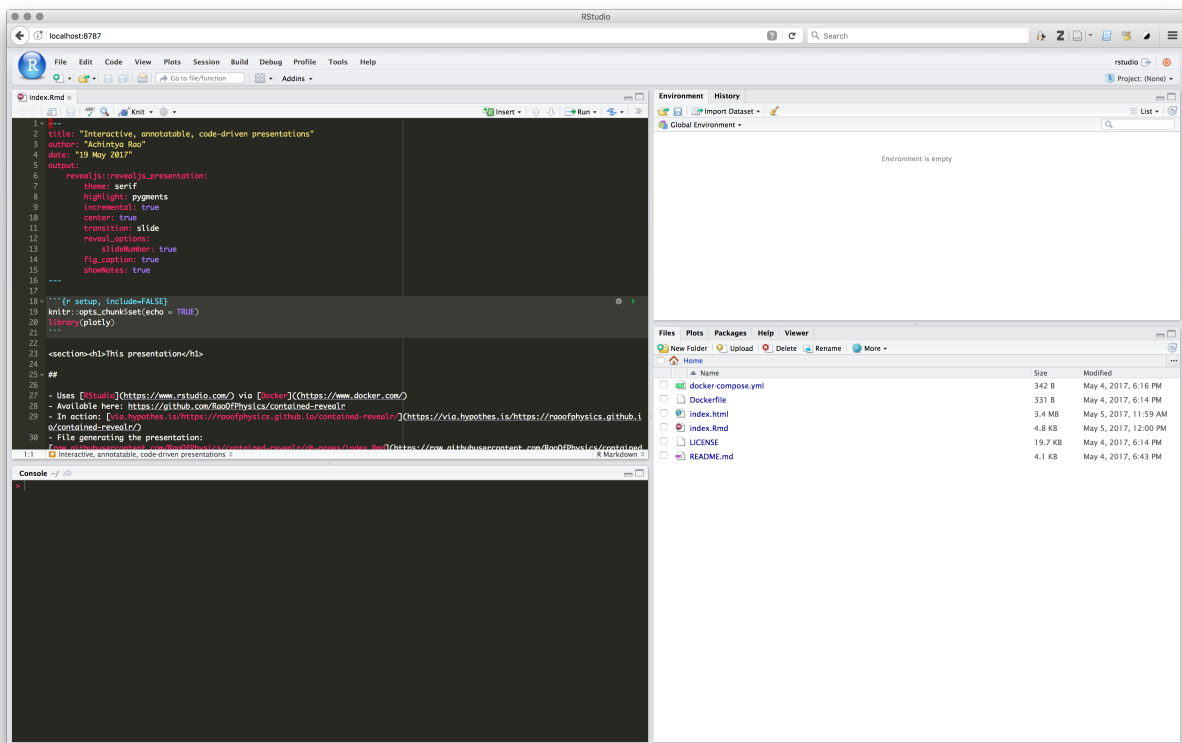


Figure 2: RStudio via Docker