

Software overview

R learn a new language for data analysis and computing

R Markdown learn a new mark-up syntax for formatted prose

Git for local version control (via RStudio)

GitHub for collaboration (via RStudio)

RStudio one GUI to find them and in the research bind them

Overview of creating a reproducible report

R Markdown script

```
---
title: "Sample report"
author: "Richard Layton"
date: "September 1, 2016"
output: word_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>.

Output document

Sample report

Richard Layton

September 1, 2016

R Markdown

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script

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:

```
```{r}
summary(cars)
```
```

output

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```
summary(cars)
```

| ## | 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 |

script

```
## Including Plots
```

You can also embed plots, for example:

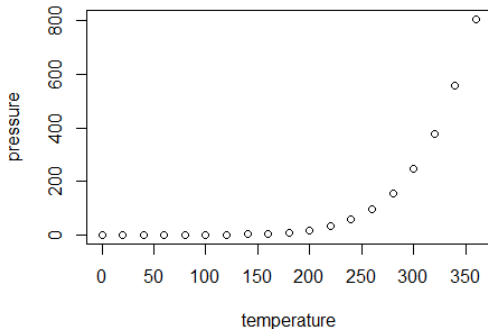
```
```{r echo=FALSE}  
plot(pressure)
```
```

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

output

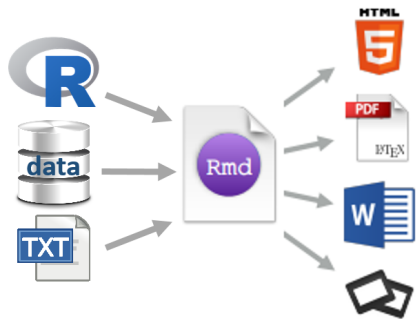
Including Plots

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

Eliminate copy and paste & GUI menu clicks



- ▶ text and R code in the same script
- ▶ R for computing and graphics
- ▶ flexible output formats