

# 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:

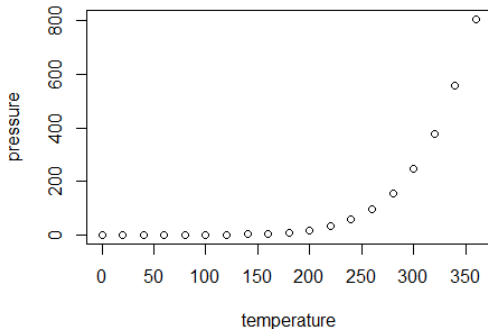
```
```{r echo=FALSE}  
plot(pressure)  
```
```

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

## output

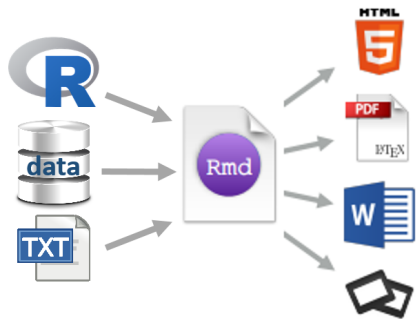
### Including Plots

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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