R Markdown Example

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 in R Studio a document will be generated that includes both content as well as the output of any embedded R code chunks within the document.

A useful summary of RMarkdown syntax can be found here: https://www.rstudio.com/resources/cheatsheets/

Formating Text

Enclose parts of text with asterisk to obtain change it to italics or bold: writing `*this text is in italics*` and `**this text is bold**` will result in *this text is in italics* and **this part is in bold** when you knit the document. End a line with two spaces to start a new paragraph.

To include a link use the following `[text for link](www.rstudio.com)` which yields text for link

Use hashtag to make headers: one for level 1 header as in `# Header 1`, two for level 2 e.g. `## Header 2`, etc:

Header 1

Header 2

Header 3

To create lists starts each line with an asterisk or a dash, for numbered lists start the line with numbers.

Math Formulas

To include math formulas you can use standard LaTeX syntax:

- for inline math write `$1+1=2$` to get $1 + 1 = 2$

- use `$$` before and after to get an equation

$$x + y = 3$$

- for an equation array use

```
$$
\begin{aligned}
x + y &= 3 \\
x - y &= 2
\end{aligned}
$$
```

  to obtain

$$
\begin{aligned}
x + y &= 3 \\
x - y &= 2
\end{aligned}
$$

For more details on LaTeX syntax please see https://en.wikibooks.org/wiki/LaTeX/Mathematics

R Code and Output

You can embed chunks of R code in RMarkdown document easily: start a chunk of R code with three backticks followed by r in curly brackets, and end it with three backtips. For example, including the following four lines in an R Markdown document
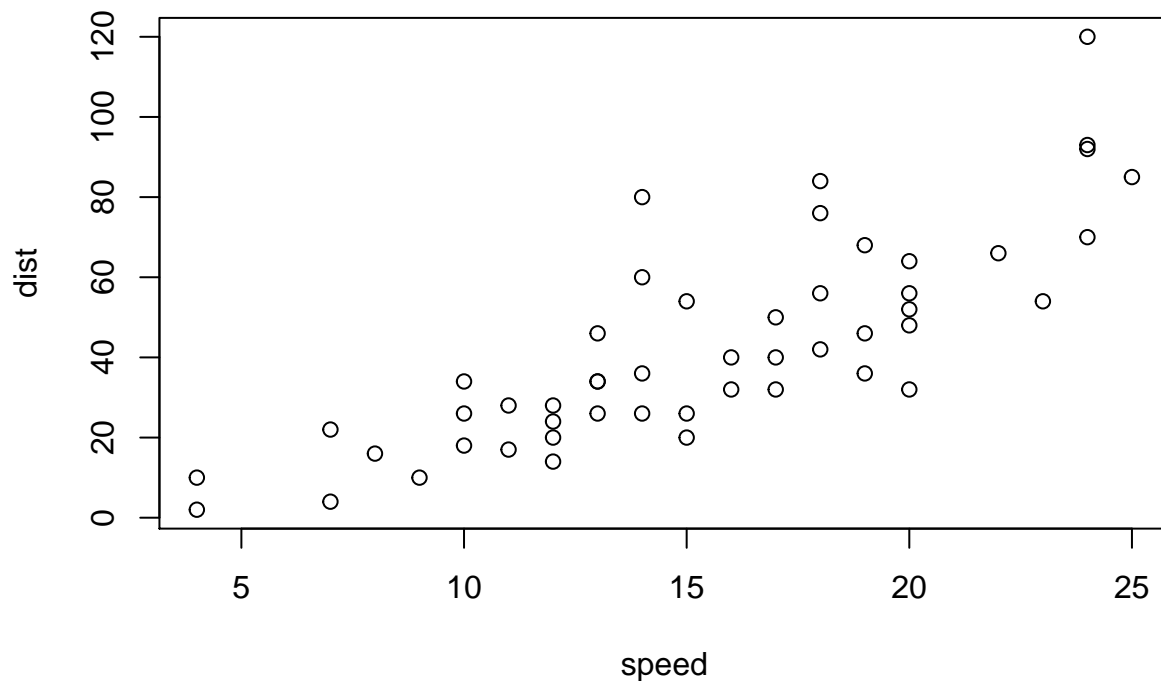
```{r}
summary(cars)
plot(cars)
```

is going to run the `summary` and `plot` functions on `cars` dataset and produce the following output

```r
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
```

```r
plot(cars)
```


To include some result inline put the R expression between single backticks and the letter **r**; for example, including the following line in the R Markdown file
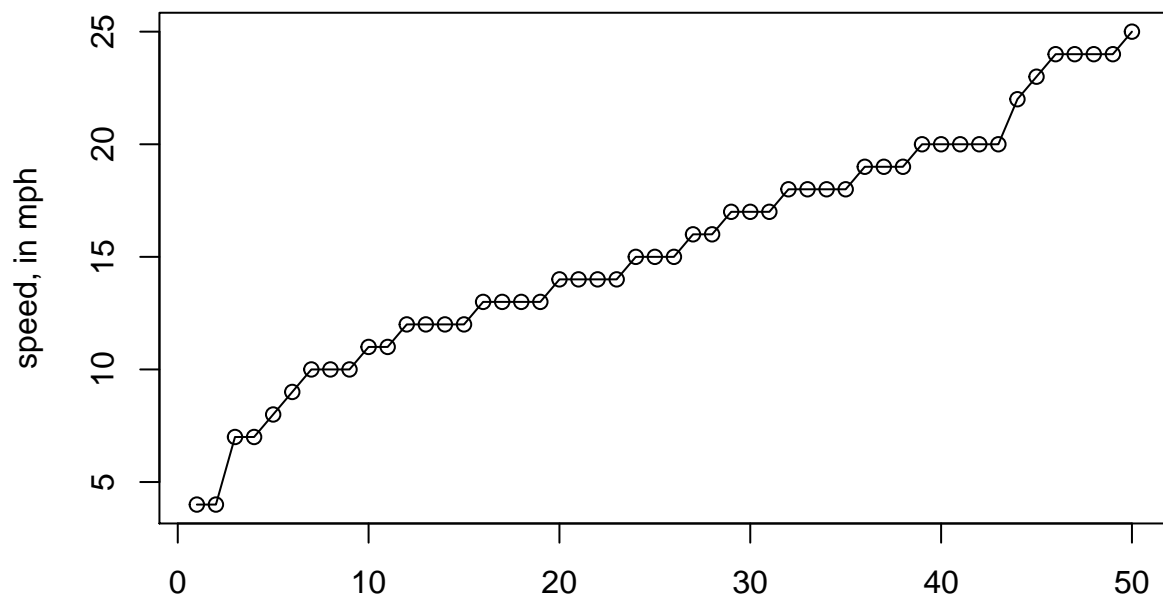
```
The averege speed is `r mean(cars$speed)` mph.
```

yields: The averege speed is 15.4 mph.

To supress the R code, warnings, or results to be printed out for any chunk you can use chunk options `echo=FALSE`, `warning=FALSE` and `include=FALSE`. Thus for example if the R Markdown file contains the following chunk

```{r, echo=FALSE}
plot(cars$speed, type='o', xlab='', ylab='speed, in mph')
```

graph will be shown but the command used to create it is not going to be displayed

See http://yihui.name/knitr/options/ for additional chunks options.