# Example

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### 1 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:

#### summary(cars)

```
##
                          dist
        speed
    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
##
            :25.0
                            :120.00
##
    Max.
                    Max.
```

## 2 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.

## 3 Caching

The GHA workflow maintains cached *knitr* results between subsequent runs to reduce runtime. Caching can be enabled by specifying cache=TRUE in the code chunk header.

Note that this should be used with caution, as caches may become invalid when code is changed, potentially leading to unsuspected results.

```
## Run with caching enabled
Sys.time()
```

## [1] "2021-11-09 08:36:41 UTC"

## Session info

Session info

## [1] "2021-12-01 10:42:49 UTC"

```
## - Session info -------------
   hash: left-facing fist: medium-dark skin tone, sign of the horns: medium skin tone, right-facing fi
##
## setting value
##
     version R version 4.1.2 (2021-11-01)
## os macOS Catalina 10.15.7
## system x86_64, darwin17.0
## ui
                X11
## language (EN)
## collate en_US.UTF-8
## ctype en_US.UTF-8
                UTC
## tz
## date
               2021-12-01
## pandoc 2.7.3 @ /usr/local/bin/ (via rmarkdown)
##
## ! package
                      * version date (UTC) lib source
## P cli
                        3.1.0 2021-10-27 [?] CRAN (R 4.1.0)
## P colorspace 2.0-2 2021-06-24 [?] CRAN (R 4.1.0)
## P colorspace 2.0 2 2021 00 24 1.3 cmm (M 1.1.5)
## P crayon 1.4.1 2021-02-08 [?] CRAN (R 4.1.0)
## P digest 0.6.27 2020-10-24 [?] CRAN (R 4.1.0)
## P ellipsis 0.3.2 2021-04-29 [?] CRAN (R 4.1.0)
## P evaluate 0.14 2019-05-28 [?] CRAN (R 4.1.0)
## P fansi 0.5.0 2021-05-25 [?] CRAN (R 4.1.0)
## P farver
                       2.1.0 2021-02-28 [?] CRAN (R 4.1.0)
## P fastmap
                        1.1.0 2021-01-25 [?] CRAN (R 4.1.0)
## P ggplot2
                      * 3.3.5 2021-06-25 [?] CRAN (R 4.1.0)
                       1.4.2 2020-08-27 [?] CRAN (R 4.1.0)
## P glue
## P gtable
                       0.3.0 2019-03-25 [?] CRAN (R 4.1.0)
## P gtable 0.3.0 2019-03-25 [?] CRAN (R 4.1.0)
## P highr 0.9 2021-04-16 [?] CRAN (R 4.1.0)
## P htmltools 0.5.2 2021-08-25 [?] CRAN (R 4.1.0)
## P knitr 1.33 2021-04-24 [?] CRAN (R 4.1.0)
## P labeling 0.4.2 2020-10-20 [?] CRAN (R 4.1.0)
## P lifecycle 1.0.0 2021-02-15 [?] CRAN (R 4.1.0)

## P magrittr 2.0.1 2020-11-17 [?] CRAN (R 4.1.0)

## P munsell 0.5.0 2018-06-12 [?] CRAN (R 4.1.0)

## P pillar 1.6.2 2021-07-29 [?] CRAN (R 4.1.2)

## P pkgconfig 2.0.3 2021-11-09 [?] Github (r-lib/pkgconfig@b81ae03)

## P R6 2.5.1 2021-08-19 [?] CRAN (R 4.1.0)
                 2.5.1 2021-06-18 [.] CRAN (R 4.1.0)
0.14.0 2021-07-21 [1] CRAN (R 4.1.0)
0.4.11 2021-04-30 [?] CRAN (R 4.1.0)
##
       renv
## P rlang
## P rmarkdown 2.10 2021-08-06 [?] CRAN (R 4.1.2) ## P scales 1.1.1 2020-05-11 [?] CRAN (R 4.1.0)
## P sessioninfo 1.2.1 2021-11-02 [?] CRAN (R 4.1.0)
                       1.7.4 2021-08-25 [?] CRAN (R 4.1.2)
## P stringi
                        1.4.0 2019-02-10 [?] CRAN (R 4.1.0)
## P stringr
## P tibble
                         3.1.4 2021-08-25 [?] CRAN (R 4.1.2)
## P utf8
                        1.2.2 2021-07-24 [?] CRAN (R 4.1.0)
## P vctrs
                        0.3.8 2021-04-29 [?] CRAN (R 4.1.0)
## P withr
                         2.4.2 2021-04-18 [?] CRAN (R 4.1.0)
## P xfun
                         0.25
                                    2021-08-06 [?] CRAN (R 4.1.2)
                          2.2.1 2020-02-01 [?] CRAN (R 4.1.0)
## P yaml
##
```

## [1] /Users/runner/work/singleCellCourse/singleCellCourse/renv/library/R-4.1/x86\_64-apple-darwin17.0