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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.

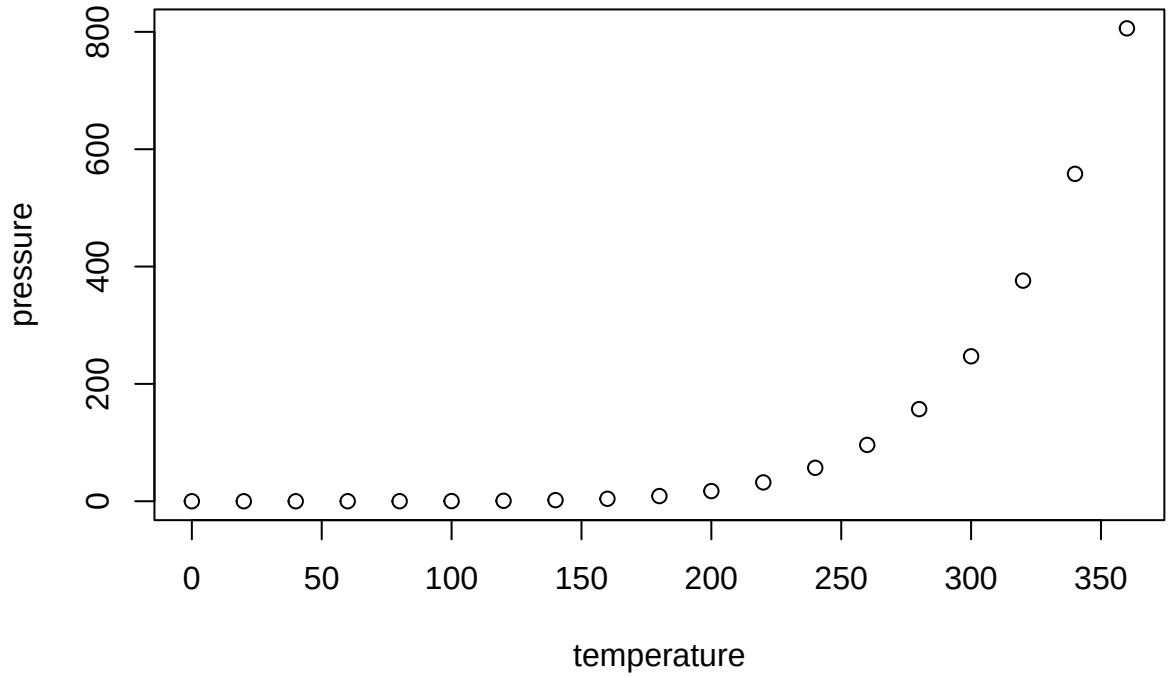
When you click the **Knit** button a document will be generated that includes both content as well as the output of any embedded R code chunks within the document. You can embed an R code chunk like this:

```
summary(cars)
```

```
##      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
```

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.

```
library(dslabs)
library(tidyverse)
```

```
## -- Attaching packages --------------------------------------- tidyverse 1.3.1 --

## v ggplot2 3.3.5     v purrr   0.3.4
## v tibble  3.1.4     v dplyr   1.0.7
## v tidyr   1.1.4     v stringr 1.4.0
## v readr   2.0.1     v forcats 0.5.1

## -- Conflicts ------------------------------------------ tidyverse_conflicts() --
## x dplyr::filter() masks stats::filter()
## x dplyr::lag()    masks stats::lag()
```

```
library(purrr)
data(murders)
```

1. Gunakan as_tibble untuk mengkonversi tabel dataset "US murders" dalam bentuk tibble dan simpan dalam objek baru bernama 'murders_tibble'.

```
murders_tibble <- as_tibble(murders)
murders_tibble
```

```
## # A tibble: 51 x 5
##    state                abb   region    population total
##    <chr>                <chr> <fct>          <dbl> <dbl>
##  1 Alabama              AL    South        4779736   135
##  2 Alaska               AK    West          710231    19
##  3 Arizona              AZ    West         6392017   232
##  4 Arkansas             AR    South        2915918    93
##  5 California           CA    West        37253956  1257
##  6 Colorado             CO    West         5029196    65
##  7 Connecticut          CT    Northeast    3574097    97
##  8 Delaware             DE    South         897934    38
##  9 District of Columbia DC    South         601723    99
## 10 Florida              FL    South       19687653   669
## # ... with 41 more rows
```

2. Gunakan fungsi group_by untuk mengkonversi dataset "US murders" menjadi sebuah tibble yang dikelompokkan berdasarkan 'region'.

```
as_tibble(murders) %>% group_by(region)
```

```
## # A tibble: 51 x 5
## # Groups:   region [4]
##    state                abb   region    population total
##    <chr>                <chr> <fct>          <dbl> <dbl>
##  1 Alabama              AL    South        4779736   135
##  2 Alaska               AK    West          710231    19
##  3 Arizona              AZ    West         6392017   232
##  4 Arkansas             AR    South        2915918    93
##  5 California           CA    West        37253956  1257
##  6 Colorado             CO    West         5029196    65
##  7 Connecticut          CT    Northeast    3574097    97
##  8 Delaware             DE    South         897934    38
##  9 District of Columbia DC    South         601723    99
## 10 Florida              FL    South       19687653   669
## # ... with 41 more rows
```

3. Tulis script tidyverse yang menghasilkan output yang sama dengan perintah berikut:exp(mean(log(murders$population))) Gunakan operator pipe sehingga setiap fungsi dapat dipanggil tanpa menambahkan argumen.Gunakan dot operator untuk mengakses populasi.

```
murders %>% .$population %>% log() %>% mean() %>% exp()
```

```
## [1] 3675209
```

4. Gunakan map_df untuk membuat data frame yang terdiri dari tiga kolom: 'n', 's_n', dan 's_n_2'. Kolom pertama harus berisi angka 1 hingga 100. Kolom kedua dan ketiga masingmasing harus berisi penjumlahan 1 hingga n, dimana n menyatakan jumlah baris.

```
compute_s_n <- function(n) {
 x <- 1:n
 sum(x)
}

n <- 1:100
s_n <- sapply(n, compute_s_n)
compute_s_n <- function(n) {
 x <- 1:n
 tibble(s_n = sum(x))
}
s_n <- map_df(n, compute_s_n)
as_tibble(s_n)
```

```
## # A tibble: 100 x 1
##      s_n
##    <int>
##  1     1
##  2     3
##  3     6
##  4    10
##  5    15
##  6    21
##  7    28
##  8    36
##  9    45
## 10    55
## # ... with 90 more rows
```