

# Tugas Modul 7

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1. Gunakan `as_tibble` untuk mengkonversi tabel dataset “US murders” dalam bentuk tibble dan simpan dalam objek baru bernama ‘murders\_tibble’.

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

```
## -- Attaching packages ----- tidyverse 1.3.2 --
## v ggplot2 3.3.6      v purrr   0.3.4
## v tibble  3.1.8      v dplyr  1.0.10
## v tidyr   1.2.0      v stringr 1.4.1
## v readr   2.1.2      v forcats 0.5.2
## -- Conflicts ----- tidyverse_conflicts() --
## x dplyr::filter() masks stats::filter()
## x dplyr::lag()     masks stats::lag()
```

```
data(murders)
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’.

```
murders_tibble %>% 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)))
```

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

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 masing-masing harus berisi penjumlahan 1 hingga n, dimana n menyatakan jumlah baris.

```
library(dplyr)
library(purrr)

df <- 1:100 %>%
  map_df(~ tibble(n = (.x), s_n = (.x) * (.x+1) / 2, s_n_2 = (((.x) * (.x+1) / 2) * ((.x) * (.x+1) / 2))))

print(df[1:100,])
```

```
## # A tibble: 100 x 3
##       n    s_n s_n_2
##   <int> <dbl> <dbl>
## 1     1     1     1
## 2     2     3     9
## 3     3     6    36
## 4     4    10   100
## 5     5    15   225
## 6     6    21   441
## 7     7    28   784
```

```
##      8      8      36 1296
##      9      9      45 2025
##     10     10      55 3025
## # ... with 90 more rows
```

## 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.