

Tugas 4

Ayi

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```
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 2.0.2        v forcats 0.5.1

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

library(dslabs)
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’.

```
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.

```
exp(mean(log(murders$population)))
```

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

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

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

###4.

```
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
```