Tugas Modul 7

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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(dplyr)
data("murders")

tbl_murders = as_tibble(murders)
murders_tibble = tbl_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
```

```
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
```

```r
library(dplyr)
murders %>% pull(population) %>% log %>% mean %>% exp
```

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

```r
library(dplyr)

compute_s_n = function(n){
  s_n = sum(1:n)
  data_frame(n = n, s_n = s_n, s_n_2 = s_n)
}
n = 1:100
map_df(n, compute_s_n)
```

```
## Warning: 'data_frame()' was deprecated in tibble 1.1.0.
## Please use 'tibble()' instead.
## This warning is displayed once every 8 hours.
## Call 'lifecycle::last_warnings()' to see where this warning was generated.
```

```
## # A tibble: 100 x 3
##        n   s_n s_n_2
##    <int> <int> <int>
##  1     1     1     1
##  2     2     3     3
##  3     3     6     6
##  4     4    10    10
##  5     5    15    15
##  6     6    21    21
##  7     7    28    28
##  8     8    36    36
##  9     9    45    45
## 10    10    55    55
## # ... with 90 more rows
```