Tugas Modul 4

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# import library and get data set  
library(dslabs)  
data(murders)

# 1. Melakukan sort pada population dan menampilkan nilai terkecil

# menyimpan dan mengurutkan nilai population ke dalam pop  
pop <- sort(murders$population)  
  
# menampilkan nilai terkecil  
pop[1]

## [1] 563626

# 2. Menampilkan index data terkecil dari population

# mengambil dan mengurutkan nilai population berdasarkan index  
pop\_2 <- order(murders$population)  
  
# menampilkan index nilai data terkecil dari population  
pop\_2[1]

## [1] 51

# 3. Menampilkan index data terkecil dari population menggunakan which.min

which.min(murders$population)

## [1] 51

# 4. Menaampilkan nama negara yang memiliki populasi terkecil

# mengambil index data population terkecil  
index\_min <- which.min(murders$population)  
  
# menampilkan negara dengan populasi terkecil  
murders$state[index\_min]

## [1] "Wyoming"

# 5. buat data frame baru yang berisi nama negara bagian dan peringkatnya

ranks <- rank(murders$population)  
my\_df <- data.frame(state = murders$state, rank = ranks)  
my\_df

## state rank  
## 1 Alabama 29  
## 2 Alaska 5  
## 3 Arizona 36  
## 4 Arkansas 20  
## 5 California 51  
## 6 Colorado 30  
## 7 Connecticut 23  
## 8 Delaware 7  
## 9 District of Columbia 2  
## 10 Florida 49  
## 11 Georgia 44  
## 12 Hawaii 12  
## 13 Idaho 13  
## 14 Illinois 47  
## 15 Indiana 37  
## 16 Iowa 22  
## 17 Kansas 19  
## 18 Kentucky 26  
## 19 Louisiana 27  
## 20 Maine 11  
## 21 Maryland 33  
## 22 Massachusetts 38  
## 23 Michigan 43  
## 24 Minnesota 31  
## 25 Mississippi 21  
## 26 Missouri 34  
## 27 Montana 8  
## 28 Nebraska 14  
## 29 Nevada 17  
## 30 New Hampshire 10  
## 31 New Jersey 41  
## 32 New Mexico 16  
## 33 New York 48  
## 34 North Carolina 42  
## 35 North Dakota 4  
## 36 Ohio 45  
## 37 Oklahoma 24  
## 38 Oregon 25  
## 39 Pennsylvania 46  
## 40 Rhode Island 9  
## 41 South Carolina 28  
## 42 South Dakota 6  
## 43 Tennessee 35  
## 44 Texas 50  
## 45 Utah 18  
## 46 Vermont 3  
## 47 Virginia 40  
## 48 Washington 39  
## 49 West Virginia 15  
## 50 Wisconsin 32  
## 51 Wyoming 1

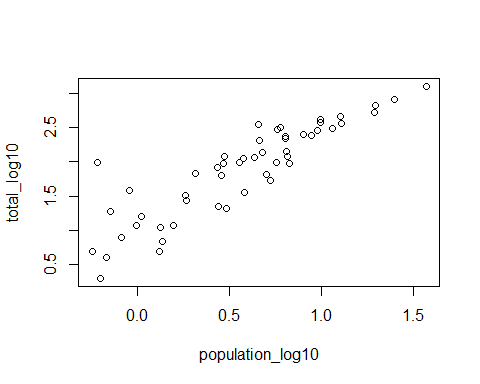
# 6. Urutkan data rank pada nomor 5

ranks <- rank(murders$population)  
sort\_ranks <- sort(ranks)  
index\_ranks <- order(ranks)  
rank\_state <- murders$state[index\_ranks]  
my\_df <- data.frame(state = rank\_state, rank = sort\_ranks)  
my\_df

## state rank  
## 1 Wyoming 1  
## 2 District of Columbia 2  
## 3 Vermont 3  
## 4 North Dakota 4  
## 5 Alaska 5  
## 6 South Dakota 6  
## 7 Delaware 7  
## 8 Montana 8  
## 9 Rhode Island 9  
## 10 New Hampshire 10  
## 11 Maine 11  
## 12 Hawaii 12  
## 13 Idaho 13  
## 14 Nebraska 14  
## 15 West Virginia 15  
## 16 New Mexico 16  
## 17 Nevada 17  
## 18 Utah 18  
## 19 Kansas 19  
## 20 Arkansas 20  
## 21 Mississippi 21  
## 22 Iowa 22  
## 23 Connecticut 23  
## 24 Oklahoma 24  
## 25 Oregon 25  
## 26 Kentucky 26  
## 27 Louisiana 27  
## 28 South Carolina 28  
## 29 Alabama 29  
## 30 Colorado 30  
## 31 Minnesota 31  
## 32 Wisconsin 32  
## 33 Maryland 33  
## 34 Missouri 34  
## 35 Tennessee 35  
## 36 Arizona 36  
## 37 Indiana 37  
## 38 Massachusetts 38  
## 39 Washington 39  
## 40 Virginia 40  
## 41 New Jersey 41  
## 42 North Carolina 42  
## 43 Michigan 43  
## 44 Georgia 44  
## 45 Ohio 45  
## 46 Pennsylvania 46  
## 47 Illinois 47  
## 48 New York 48  
## 49 Florida 49  
## 50 Texas 50  
## 51 California 51

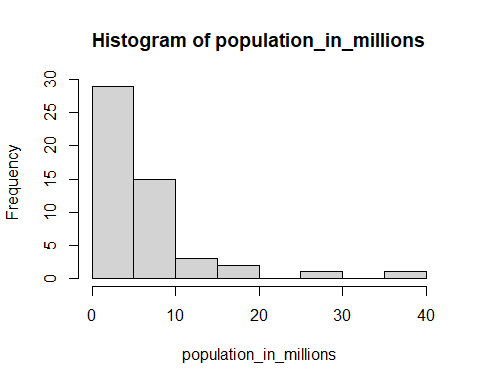
# 7. Transformasi nilai variabel menggunakan transformasi log10,kemudian tampilkan plot-nya.

population\_in\_millions <- murders$population/10^6  
total\_gun\_murders <- murders$total  
population\_log10 <- log10(population\_in\_millions)  
total\_log10 <- log10(total\_gun\_murders)  
plot(population\_log10, total\_log10)



# 8. Buat histogram dari populasi negara bagian

population\_in\_millions <- with(murders, population/10^6)  
hist(population\_in\_millions)



# 9. Hasilkan boxplot dari populasi negara bagian berdasarkan wilayahnya

population\_in\_millions <- with(murders, population/10^6)  
boxplot(population\_in\_millions~region, data = murders, horizontal = TRUE)

