TugasModul5

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2022-09-21

Import dataset “murders”;

library(dslabs)  
data(murders)

1. Fungsi nchar dapat digunakan untuk menghitung jumlah karakter dari suatu vektor karakter, Buatlah satu baris kode yang akan menyimpan hasil komputasi pada variabel ‘new\_names’ dan berisi singkatan nama negara ketika jumlah karakternya lebih dari 8 karakter jawab:

new\_names = nchar(murders$state)  
ifelse(new\_names > 8, murders$abb, murders$state)

## [1] "Alabama" "Alaska" "Arizona" "Arkansas" "CA" "Colorado"  
## [7] "CT" "Delaware" "DC" "Florida" "Georgia" "Hawaii"   
## [13] "Idaho" "Illinois" "Indiana" "Iowa" "Kansas" "Kentucky"  
## [19] "LA" "Maine" "Maryland" "MA" "Michigan" "MN"   
## [25] "MS" "Missouri" "Montana" "Nebraska" "Nevada" "NH"   
## [31] "NJ" "NM" "New York" "NC" "ND" "Ohio"   
## [37] "Oklahoma" "Oregon" "PA" "RI" "SC" "SD"   
## [43] "TN" "Texas" "Utah" "Vermont" "Virginia" "WA"   
## [49] "WV" "WI" "Wyoming"

1. Buat fungsi sum\_n yang dapat digunakan untuk menghitung jumlah bilangan bulat dari 1 hingga n. Gunakan pula fungsi ini untuk menentukan jumlah bilangan bulat dari 1 hingga 5000. Jawab:

sum\_n = function(n){  
 n = 1:n   
 sum(n)  
}  
sum\_n(5000)

## [1] 12502500

1. Buat fungsi compute\_s\_n yang dapat digunakan untuk menghitung jumlah Sn = 1^2 + 2^2 + 3^2 + … + n^2. Tampilkan hasil penjumlahan ketika n = 10. Jawab:

n = 10  
compute\_s\_n = function(n){  
 n = 1:n  
 sum(n^2)  
}  
compute\_s\_n(n)

## [1] 385

1. Buat vektor numerik kosong dengan nama: s\_n dengan ukuran:25 menggunakan s\_n <- vector (“numeric”, 25). Simpan dihasil komputasi S1,S2,…,Sn menggunakan FOR-LOOP Jawab:

s\_n = vector("numeric", 25)  
for(n in 1:25){  
 s\_n[n] <- compute\_s\_n(n)  
}  
s\_n

## [1] 1 5 14 30 55 91 140 204 285 385 506 650 819 1015 1240  
## [16] 1496 1785 2109 2470 2870 3311 3795 4324 4900 5525

1. Ulangi langkah pada soal no.4 dan gunakan fungsi sapply. Jawab:

n = 1:25  
sapply(n, compute\_s\_n)

## [1] 1 5 14 30 55 91 140 204 285 385 506 650 819 1015 1240  
## [16] 1496 1785 2109 2470 2870 3311 3795 4324 4900 5525

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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.