Tugas Modul 5

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import dataset “murders”;

```
library(dslabs)
data(murders)
```

Soal Nomor 1

Fungsi ncahr 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"
```

Soal Nomor 2

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 5.000 Jawab :

```
sum_n <- function(n) {
  n <- 1:n
  sum(n)
}
sum_n(5000)
```

```
## [1] 12502500
```

Soal Nomor 3

Buat fungsi compute_s_n yang dapat digunakan untuk menghitung jumlah Sn = 1^2 + 2^2 + 3^2 + … n^2. Tampilkan hasil penyimpanan ketika n = 10. Jawab :

```
n <- 10
compute_s_n <- function(n) {
  a <- 0
  for(i in 1:n) {
    a <- a + i^2
  }
  a
}
compute_s_n(n)
```

```
## [1] 385
```

Soal Nomro 4

Buat vektor numerik kosong dengan nama: s_n dengan ukuran:25 menggunakan s_n <- vector ("numeric", 25) Simpan di hasil komputasi S1, S2,. . . S25 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
```

Soal Nomor 5

Ulangi langkah pada soal no. 4 dan gunakan fugsi sapply jawab :

```
sapply(25, compute_s_n)
```

```
## [1] 5525
```

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:

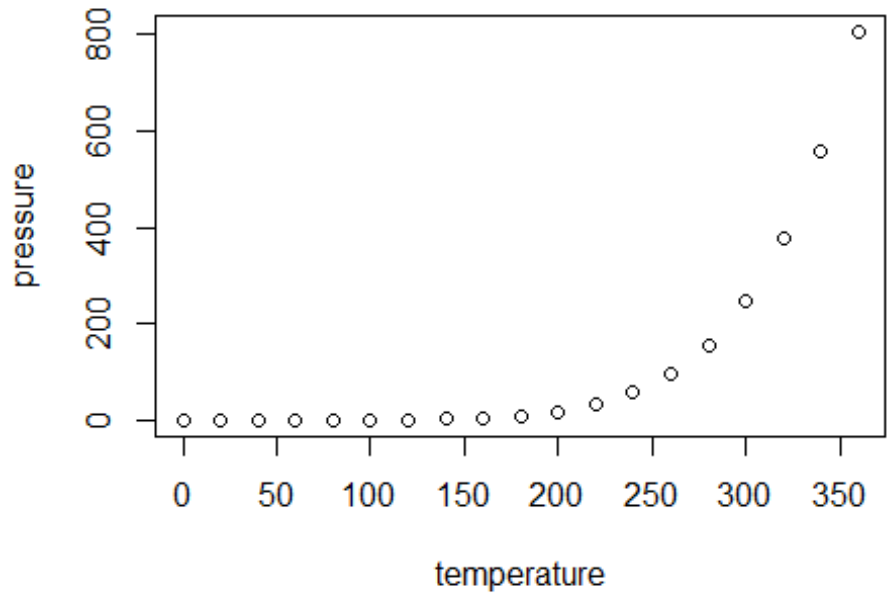
```
summary(cars)
```

```
##      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.