TugasModul5

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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"
```

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 5000. Jawab:

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

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

3. 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
```

4. 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
```

5. 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
```

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.

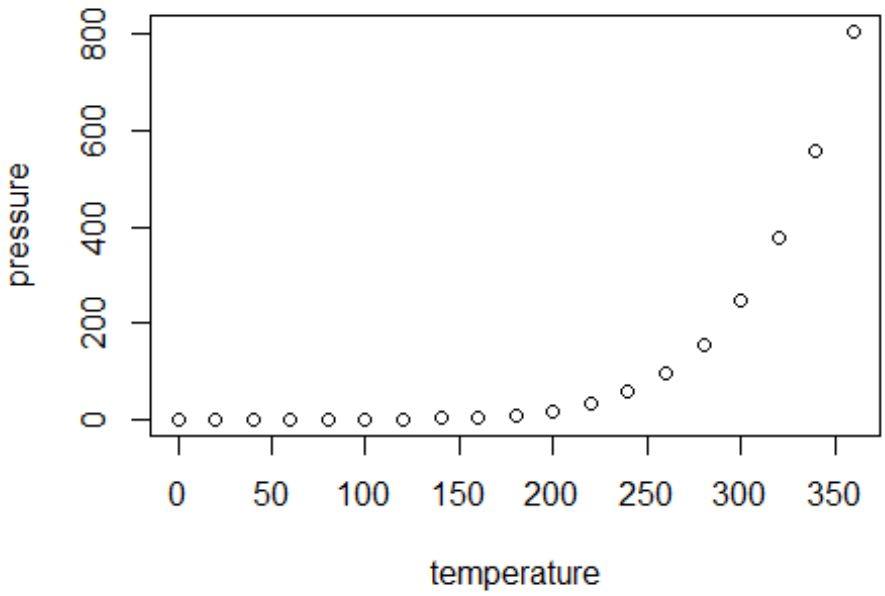
When you click the **Knit** button a document will be generated that includes both content as well as the output of any embedded R code chunks within the document. You can embed an R code chunk like this:

```
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.