Latihan Modul 5

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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.

```
new_names = ifelse(nchar(murders$state) >8, murders$abb, murders$state)
new_names
```

```
##  [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 5.000.

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

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

3. Buat fungsi compute_s_n yang dapat digunakan untuk menghitung jumlah

Tampilkan hasil penjumlahan ketika n = 10.

```
compute_s_n = function(n){
 a = 1:n
 a = a^2
 print(sum(a))
```

```
}
compute_s_n(10)
```

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

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.

```
s_n = vector("numeric",25)
for(n in 1:25){
 s_n[n] = compute_s_n(n)
}
```

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

5. Ulangi langkah pada soal no. 4 dan gunakan fugsi sapply.

```
s_n <- sapply(1:25, compute_s_n)
```

```
## [1] 1
## [1] 5
## [1] 14
## [1] 30
## [1] 55
## [1] 91
## [1] 140
## [1] 204
```

```
## [1] 285
## [1] 385
## [1] 506
## [1] 650
## [1] 819
## [1] 1015
## [1] 1240
## [1] 1496
## [1] 1785
## [1] 2109
## [1] 2470
## [1] 2870
## [1] 3311
## [1] 3795
## [1] 4324
## [1] 4900
## [1] 5525
```

R Markdown

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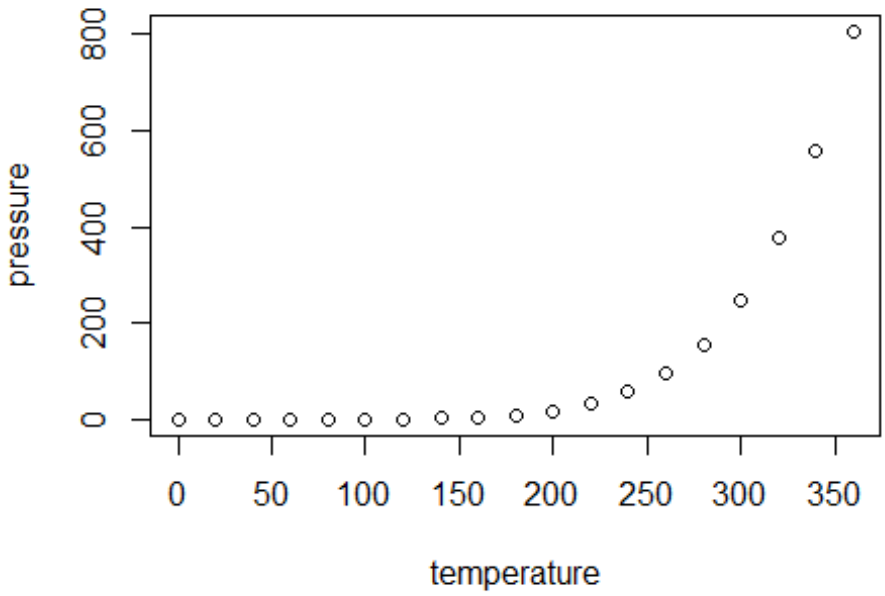
When you click the **Knit** button a document will be generated that includes both content as well as the output of any embedded R code chunks within the document. You can embed an R code chunk like this:

```
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.