Tugas Modul 3

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Import dataset “murders”;

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

1. Gunakan fungsi str untuk memeriksa struktur objek “murders”. Manakah dari pernyataan berikut ini yang paling menggambarkan karakter dari tiap variabel pada data frame? jawab:

c. Data berisi Nama negara bagian, singkatan dari nama negara bagian, wilayah negara bagian, dan populasi negara bagian serta jumlah total pembunuhan pada tahun 2010.

```
str(murders)
```

```
## 'data.frame':    51 obs. of  5 variables:
##  $ state     : chr  "Alabama" "Alaska" "Arizona" "Arkansas" ...
##  $ abb       : chr  "AL" "AK" "AZ" "AR" ...
##  $ region    : Factor w/ 4 levels "Northeast","South",..: 2 4 4 2 4 4 1 2
2 2 ...
##  $ population: num  4779736 710231 6392017 2915918 37253956 ...
##  $ total     : num  135 19 232 93 1257 ...
```

2. Sebutkan apa saja nama kolom yang digunakan pada data frame jawab:

```
names(murders)
```

```
## [1] "state"      "abb"        "region"     "population" "total"
```

3. Gunakan operator aksesor ($) untuk mengekstrak informasi singkatan negara dan menyimpannya pada objek “a”. Sebutkan jenis class dari objek tersebut. jawab:

```
a<-murders$abb
a
```

```
##  [1] "AL" "AK" "AZ" "AR" "CA" "CO" "CT" "DE" "DC" "FL" "GA" "HI" "ID" "IL"
"IN"
## [16] "IA" "KS" "KY" "LA" "ME" "MD" "MA" "MI" "MN" "MS" "MO" "MT" "NE" "NV"
"NH"
## [31] "NJ" "NM" "NY" "NC" "ND" "OH" "OK" "OR" "PA" "RI" "SC" "SD" "TN" "TX"
"UT"
## [46] "VT" "VA" "WA" "WV" "WI" "WY"
```

```
class(a)
```

```
## [1] "character"
```

4. Gunakan tanda kurung siku untuk mengekstrak singkatan negara dan menyimpannya pada objek “b”. Tentukan apakah variabel “a” dan “b” bernilai sama? jawab:

```
b<-murders[,2]
class(b)
```

```
## [1] "character"
```

```
a
```

```
##  [1] "AL" "AK" "AZ" "AR" "CA" "CO" "CT" "DE" "DC" "FL" "GA" "HI" "ID" "IL"
"IN"
## [16] "IA" "KS" "KY" "LA" "ME" "MD" "MA" "MI" "MN" "MS" "MO" "MT" "NE" "NV"
"NH"
## [31] "NJ" "NM" "NY" "NC" "ND" "OH" "OK" "OR" "PA" "RI" "SC" "SD" "TN" "TX"
"UT"
## [46] "VT" "VA" "WA" "WV" "WI" "WY"
```

```
b
```

```
##  [1] "AL" "AK" "AZ" "AR" "CA" "CO" "CT" "DE" "DC" "FL" "GA" "HI" "ID" "IL"
"IN"
## [16] "IA" "KS" "KY" "LA" "ME" "MD" "MA" "MI" "MN" "MS" "MO" "MT" "NE" "NV"
"NH"
## [31] "NJ" "NM" "NY" "NC" "ND" "OH" "OK" "OR" "PA" "RI" "SC" "SD" "TN" "TX"
"UT"
## [46] "VT" "VA" "WA" "WV" "WI" "WY"
```

```
a==b
```

```
##  [1] TRUE TRUE TRUE TRUE TRUE TRUE TRUE TRUE TRUE TRUE TRUE TRUE TRUE TRUE
TRUE
## [16] TRUE TRUE TRUE TRUE TRUE TRUE TRUE TRUE TRUE TRUE TRUE TRUE TRUE TRUE
TRUE
## [31] TRUE TRUE TRUE TRUE TRUE TRUE TRUE TRUE TRUE TRUE TRUE TRUE TRUE TRUE
TRUE
## [46] TRUE TRUE TRUE TRUE TRUE TRUE
```

5. Variabel region memiliki tipe data: factor. Dengan satu baris kode, gunakan fungsi level dan length untuk menentukan jumlah region yang dimiliki dataset. jawab:

```
length (levels(murders$region))
```

```
## [1] 4
```

6. Fungsi table dapat digunakan untuk ekstraksi data pada tipe vektor dan menampilkan frekuensi dari setiap elemen. Dengan menerapkan fungsi tersebut, dapat diketahui jumlah state pada tiap region. Gunakan fungsi table dalam satu baris kode untuk menampilkan tabel baru yang berisi jumlah state pada tiap region. jawab:

```
table(murders$region)
```

```
##
##     Northeast         South North Central          West
##             9            17            12            13
```

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.

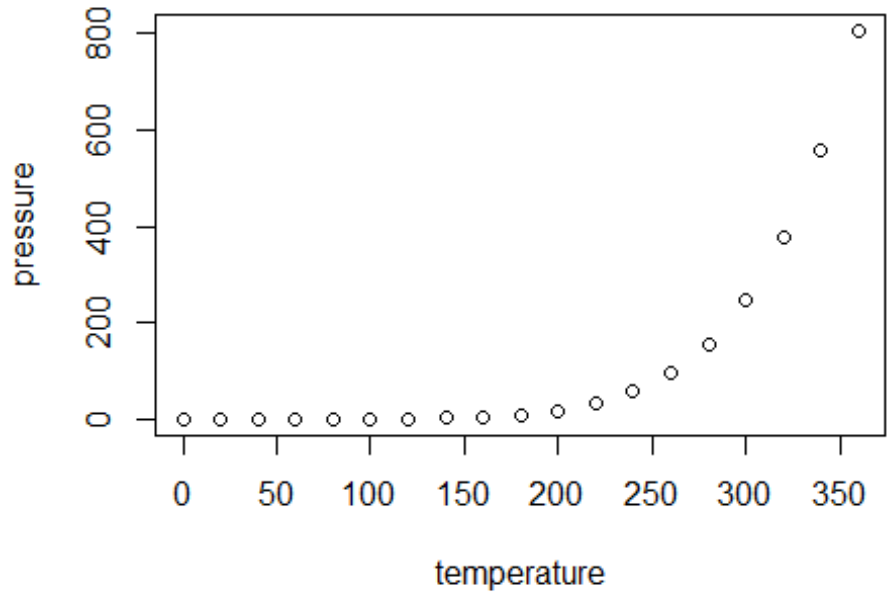
When you click the **Knit** button a document will be generated that includes both content as well as the output of any embedded R code chunks within the document. You can embed an R code chunk like this:

```
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.