Tugas Modul 3

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

1. Fungsi str

a. Data murders memiliki 51 data di dalamnya

```
length(murders$state)
```

```
## [1] 51
```

b. Data berisi tingkat pembunuhan pada 50 negara bagian dan DC

```
murders
```

```
##                     state abb        region population total
## 1                 Alabama  AL         South    4779736   135
## 2                  Alaska  AK          West     710231    19
## 3                 Arizona  AZ          West    6392017   232
## 4                Arkansas  AR         South    2915918    93
## 5              California  CA          West   37253956  1257
## 6                Colorado  CO          West    5029196    65
## 7             Connecticut  CT     Northeast    3574097    97
## 8                Delaware  DE         South     897934    38
## 9    District of Columbia  DC         South     601723    99
## 10                Florida  FL         South   19687653   669
## 11                Georgia  GA         South    9920000   376
## 12                 Hawaii  HI          West    1360301     7
## 13                  Idaho  ID          West    1567582    12
## 14               Illinois  IL North Central   12830632   364
## 15                Indiana  IN North Central    6483802   142
## 16                   Iowa  IA North Central    3046355    21
## 17                 Kansas  KS North Central    2853118    63
## 18               Kentucky  KY         South    4339367   116
## 19              Louisiana  LA         South    4533372   351
## 20                  Maine  ME     Northeast    1328361    11
## 21               Maryland  MD         South    5773552   293
## 22          Massachusetts  MA     Northeast    6547629   118
```

```
## 23          Michigan  MI North Central   9883640  413
## 24         Minnesota  MN North Central   5303925   53
## 25       Mississippi  MS         South   2967297  120
## 26          Missouri  MO North Central   5988927  321
## 27           Montana  MT          West    989415   12
## 28          Nebraska  NE North Central   1826341   32
## 29            Nevada  NV          West   2700551   84
## 30     New Hampshire  NH     Northeast   1316470    5
## 31        New Jersey  NJ     Northeast   8791894  246
## 32        New Mexico  NM          West   2059179   67
## 33          New York  NY     Northeast  19378102  517
## 34    North Carolina  NC         South   9535483  286
## 35      North Dakota  ND North Central    672591    4
## 36              Ohio  OH North Central  11536504  310
## 37          Oklahoma  OK         South   3751351  111
## 38            Oregon  OR          West   3831074   36
## 39      Pennsylvania  PA     Northeast  12702379  457
## 40      Rhode Island  RI     Northeast   1052567   16
## 41    South Carolina  SC         South   4625364  207
## 42      South Dakota  SD North Central    814180    8
## 43         Tennessee  TN         South   6346105  219
## 44             Texas  TX         South  25145561  805
## 45              Utah  UT          West   2763885   22
## 46           Vermont  VT     Northeast    625741    2
## 47          Virginia  VA         South   8001024  250
## 48        Washington  WA          West   6724540   93
## 49     West Virginia  WV         South   1852994   27
## 50         Wisconsin  WI North Central   5686986   97
## 51           Wyoming  WY          West    563626    5
```

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 ...
```

d. "str" tidak menunjukkan informasi yang relevan, namun menunjukkan struktur dati suatu data

```
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##  $ 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. Nama kolom pada data frame adalah state, abb, region, population, dan total

```
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2 2 ...
##  $ population: num  4779736 710231 6392017 2915918 37253956 ...
##  $ total     : num  135 19 232 93 1257 ...
```

3. Jenis class objek "a" adalah "character"

```
a = murders$abb
class(a)

## [1] "character"
```

4. Jenis class objek "b" dan "a" adalah "character"

```
b <- murders$abb
class(b)

## [1] "character"
```

5. Jumlah region yang dimiliki dataset

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

## [1] 4
```

6. Jumlah state pada setiap region

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

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