Tugas Modul 3

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9/23/2021

Nomer 1

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

1.A. Terdiri dari 51 Negara

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

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

1.B. Tingkat pembunuhan pada 50 negara bagian dan DC

```
murders$state
```

```
##  [1] "Alabama"              "Alaska"               "Arizona"
##  [4] "Arkansas"             "California"           "Colorado"
##  [7] "Connecticut"          "Delaware"             "District of Columbia"
## [10] "Florida"              "Georgia"              "Hawaii"
## [13] "Idaho"                "Illinois"             "Indiana"
## [16] "Iowa"                 "Kansas"               "Kentucky"
## [19] "Louisiana"            "Maine"                "Maryland"
## [22] "Massachusetts"        "Michigan"             "Minnesota"
## [25] "Mississippi"          "Missouri"             "Montana"
## [28] "Nebraska"             "Nevada"               "New Hampshire"
## [31] "New Jersey"           "New Mexico"           "New York"
## [34] "North Carolina"       "North Dakota"         "Ohio"
## [37] "Oklahoma"             "Oregon"               "Pennsylvania"
## [40] "Rhode Island"         "South Carolina"       "South Dakota"
## [43] "Tennessee"            "Texas"                "Utah"
## [46] "Vermont"              "Virginia"             "Washington"
## [49] "West Virginia"        "Wisconsin"            "Wyoming"
```

1.C. Menampilkan nama negara bagian,singkatan,wilayah negara bagian,populasi serta total pembunuhan

```
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
```

2. Nama Kolom yang digunakan pada data frame

```
names(murders)
```

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

3. Menggunakan aksesor untuk mengekstrak informasi singkatan negara dan menyimpan objek "a". dan menyebutkan jenis class

```
a = murders$abb

class(a)
```

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

4. Gunakan objek tanda kurung siku untuk mengekstrak singkatan negara dan menyimpan pada objek b. dan bernilai sama

```
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"
```

5. Gunakan fungsi level dan length untuk menentukan jumlah region yang dimiliki dataset

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

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

6. gunakan fungsi table dalam satu baris kode untuk menampilkan tabel baru yang berisi jumlah state pada tiap region

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

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