Modul6

DBRT

12/5/2020

Nomer 1

```r
library(dplyr)
```

```
##
## Attaching package: 'dplyr'

## The following objects are masked from 'package:stats':
##
##     filter, lag

## The following objects are masked from 'package:base':
##
##     intersect, setdiff, setequal, union
```

```r
library(dslabs)
```

```
## Warning: package 'dslabs' was built under R version 4.0.3
```

```r
data(murders)
murders <- mutate(murders , rate = total / population * 10 ^ 5)
```

```r
murders
```

```
##                    state abb       region population total        rate
## 1                Alabama  AL        South    4779736   135   2.8244238
## 2                 Alaska  AK         West     710231    19   2.6751860
## 3                Arizona  AZ         West    6392017   232   3.6295273
## 4               Arkansas  AR        South    2915918    93   3.1893901
## 5             California  CA         West   37253956  1257   3.3741383
## 6               Colorado  CO         West    5029196    65   1.2924531
## 7            Connecticut  CT    Northeast    3574097    97   2.7139722
## 8               Delaware  DE        South     897934    38   4.2319369
## 9   District of Columbia  DC        South     601723    99  16.4527532
## 10               Florida  FL        South   19687653   669   3.3980688
## 11               Georgia  GA        South    9920000   376   3.7903226
## 12                Hawaii  HI         West    1360301     7   0.5145920
## 13                 Idaho  ID         West    1567582    12   0.7655102
## 14              Illinois  IL North Central   12830632   364   2.8369608
```

```
## 15           Indiana  IN North Central   6483802    142  2.1900730
## 16              Iowa  IA North Central   3046355     21  0.6893484
## 17            Kansas  KS North Central   2853118     63  2.2081106
## 18          Kentucky  KY          South   4339367    116  2.6732010
## 19         Louisiana  LA          South   4533372    351  7.7425810
## 20             Maine  ME      Northeast   1328361     11  0.8280881
## 21          Maryland  MD          South   5773552    293  5.0748655
## 22     Massachusetts  MA      Northeast   6547629    118  1.8021791
## 23          Michigan  MI North Central   9883640    413  4.1786225
## 24         Minnesota  MN North Central   5303925     53  0.9992600
## 25       Mississippi  MS          South   2967297    120  4.0440846
## 26          Missouri  MO North Central   5988927    321  5.3598917
## 27           Montana  MT           West    989415     12  1.2128379
## 28          Nebraska  NE North Central   1826341     32  1.7521372
## 29            Nevada  NV           West   2700551     84  3.1104763
## 30     New Hampshire  NH      Northeast   1316470      5  0.3798036
## 31        New Jersey  NJ      Northeast   8791894    246  2.7980319
## 32        New Mexico  NM           West   2059179     67  3.2537239
## 33          New York  NY      Northeast  19378102    517  2.6679599
## 34    North Carolina  NC          South   9535483    286  2.9993237
## 35      North Dakota  ND North Central    672591      4  0.5947151
## 36              Ohio  OH North Central  11536504    310  2.6871225
## 37          Oklahoma  OK          South   3751351    111  2.9589340
## 38            Oregon  OR           West   3831074     36  0.9396843
## 39      Pennsylvania  PA      Northeast  12702379    457  3.5977513
## 40      Rhode Island  RI      Northeast   1052567     16  1.5200933
## 41    South Carolina  SC          South   4625364    207  4.4753235
## 42      South Dakota  SD North Central    814180      8  0.9825837
## 43         Tennessee  TN          South   6346105    219  3.4509357
## 44             Texas  TX          South  25145561    805  3.2013603
## 45              Utah  UT           West   2763885     22  0.7959810
## 46           Vermont  VT      Northeast    625741      2  0.3196211
## 47          Virginia  VA          South   8001024    250  3.1246001
## 48        Washington  WA           West   6724540     93  1.3829942
## 49     West Virginia  WV          South   1852994     27  1.4571013
## 50         Wisconsin  WI North Central   5686986     97  1.7056487
## 51           Wyoming  WY           West    563626      5  0.8871131
```

Nomer 2

```r
murders <- mutate(murders , rate_rank = rank(-murders$rate))
murders
```

```
##                   state abb    region population total       rate rate_rank
## 1               Alabama  AL     South    4779736   135  2.8244238        23
## 2                Alaska  AK      West     710231    19  2.6751860        27
## 3               Arizona  AZ      West    6392017   232  3.6295273        10
## 4              Arkansas  AR     South    2915918    93  3.1893901        17
## 5            California  CA      West   37253956  1257  3.3741383        14
## 6              Colorado  CO      West    5029196    65  1.2924531        38
## 7           Connecticut  CT Northeast    3574097    97  2.7139722        25
## 8              Delaware  DE     South     897934    38  4.2319369         6
## 9  District of Columbia  DC     South     601723    99 16.4527532         1
## 10              Florida  FL     South   19687653   669  3.3980688        13
```

```
## 11               Georgia GA       South  9920000 376 3.7903226         9
## 12                Hawaii HI        West  1360301   7 0.5145920        49
## 13                 Idaho ID        West  1567582  12 0.7655102        46
## 14              Illinois IL North Central 12830632 364 2.8369608       22
## 15               Indiana IN North Central  6483802 142 2.1900730       31
## 16                  Iowa IA North Central  3046355  21 0.6893484       47
## 17                Kansas KS North Central  2853118  63 2.2081106       30
## 18              Kentucky KY       South  4339367 116 2.6732010        28
## 19             Louisiana LA       South  4533372 351 7.7425810         2
## 20                 Maine ME   Northeast  1328361  11 0.8280881        44
## 21              Maryland MD       South  5773552 293 5.0748655         4
## 22         Massachusetts MA   Northeast  6547629 118 1.8021791        32
## 23              Michigan MI North Central  9883640 413 4.1786225        7
## 24             Minnesota MN North Central  5303925  53 0.9992600       40
## 25           Mississippi MS       South  2967297 120 4.0440846         8
## 26              Missouri MO North Central  5988927 321 5.3598917        3
## 27               Montana MT        West   989415  12 1.2128379        39
## 28              Nebraska NE North Central  1826341  32 1.7521372       33
## 29                Nevada NV        West  2700551  84 3.1104763        19
## 30         New Hampshire NH   Northeast  1316470   5 0.3798036        50
## 31            New Jersey NJ   Northeast  8791894 246 2.7980319        24
## 32            New Mexico NM        West  2059179  67 3.2537239        15
## 33              New York NY   Northeast 19378102 517 2.6679599        29
## 34        North Carolina NC       South  9535483 286 2.9993237        20
## 35          North Dakota ND North Central   672591   4 0.5947151       48
## 36                  Ohio OH North Central 11536504 310 2.6871225       26
## 37              Oklahoma OK       South  3751351 111 2.9589340        21
## 38                Oregon OR        West  3831074  36 0.9396843        42
## 39          Pennsylvania PA   Northeast 12702379 457 3.5977513        11
## 40          Rhode Island RI   Northeast  1052567  16 1.5200933        35
## 41        South Carolina SC       South  4625364 207 4.4753235         5
## 42          South Dakota SD North Central   814180   8 0.9825837       41
## 43             Tennessee TN       South  6346105 219 3.4509357        12
## 44                 Texas TX       South 25145561 805 3.2013603        16
## 45                  Utah UT        West  2763885  22 0.7959810        45
## 46               Vermont VT   Northeast   625741   2 0.3196211        51
## 47              Virginia VA       South  8001024 250 3.1246001        18
## 48            Washington WA        West  6724540  93 1.3829942        37
## 49         West Virginia WV       South  1852994  27 1.4571013        36
## 50             Wisconsin WI North Central  5686986  97 1.7056487       34
## 51               Wyoming WY        West   563626   5 0.8871131        43
```

Nomer 3

```
select(murders , state , abb)
```

```
##                 state abb
## 1             Alabama  AL
## 2              Alaska  AK
## 3             Arizona  AZ
## 4            Arkansas  AR
## 5          California  CA
## 6            Colorado  CO
```

```
## 7               Connecticut  CT
## 8                 Delaware  DE
## 9   District of Columbia  DC
## 10                  Florida  FL
## 11                  Georgia  GA
## 12                   Hawaii  HI
## 13                    Idaho  ID
## 14                 Illinois  IL
## 15                  Indiana  IN
## 16                     Iowa  IA
## 17                   Kansas  KS
## 18                 Kentucky  KY
## 19                Louisiana  LA
## 20                    Maine  ME
## 21                 Maryland  MD
## 22            Massachusetts  MA
## 23                 Michigan  MI
## 24                Minnesota  MN
## 25              Mississippi  MS
## 26                 Missouri  MO
## 27                  Montana  MT
## 28                 Nebraska  NE
## 29                   Nevada  NV
## 30            New Hampshire  NH
## 31               New Jersey  NJ
## 32               New Mexico  NM
## 33                 New York  NY
## 34           North Carolina  NC
## 35             North Dakota  ND
## 36                     Ohio  OH
## 37                 Oklahoma  OK
## 38                   Oregon  OR
## 39             Pennsylvania  PA
## 40             Rhode Island  RI
## 41           South Carolina  SC
## 42             South Dakota  SD
## 43                Tennessee  TN
## 44                    Texas  TX
## 45                     Utah  UT
## 46                  Vermont  VT
## 47                 Virginia  VA
## 48               Washington  WA
## 49            West Virginia  WV
## 50                Wisconsin  WI
## 51                  Wyoming  WY
```

Nomer 4

```r
filter(murders , rate_rank <= 5)
```

```
##                   state abb     region population total      rate rate_rank
## 1 District of Columbia  DC      South     601723    99 16.452753         1
## 2            Louisiana  LA      South    4533372   351  7.742581         2
```

```
## 3          Maryland  MD          South  5773552  293  5.074866          4
## 4          Missouri  MO North Central  5988927  321  5.359892          3
## 5     South Carolina  SC          South  4625364  207  4.475323          5
```

Nomer 5

```r
murders %>%
  filter(region == "Northeast" | region == "West") %>%
  filter(rate < 1) %>%
  select(state , rate , rate_rank)
```

```
##             state      rate rate_rank
## 1          Hawaii 0.5145920        49
## 2           Idaho 0.7655102        46
## 3           Maine 0.8280881        44
## 4   New Hampshire 0.3798036        50
## 5          Oregon 0.9396843        42
## 6            Utah 0.7959810        45
## 7         Vermont 0.3196211        51
## 8         Wyoming 0.8871131        43
```

Nomer 1

```r
data(murders)
my_states <- murders
my_states %>%
  mutate(rate = total / population * 10 ^ 5 , rate_rank = rank(-rate)) %>%
  filter(region == "Northeast" | region == "Eastwest" | rate < 1) %>%
  select(state , rate , rate_rank)
```

```
##             state       rate rate_rank
## 1     Connecticut 2.7139722        25
## 2          Hawaii 0.5145920        49
## 3           Idaho 0.7655102        46
## 4            Iowa 0.6893484        47
## 5           Maine 0.8280881        44
## 6   Massachusetts 1.8021791        32
## 7       Minnesota 0.9992600        40
## 8   New Hampshire 0.3798036        50
## 9      New Jersey 2.7980319        24
## 10       New York 2.6679599        29
## 11   North Dakota 0.5947151        48
## 12         Oregon 0.9396843        42
## 13   Pennsylvania 3.5977513        11
## 14   Rhode Island 1.5200933        35
## 15   South Dakota 0.9825837        41
## 16           Utah 0.7959810        45
## 17        Vermont 0.3196211        51
## 18        Wyoming 0.8871131        43
```