Visualisasi data

Diagram batang

```
library(dplyr)
df <- read.csv('../data/murders.csv')
head(df)
```

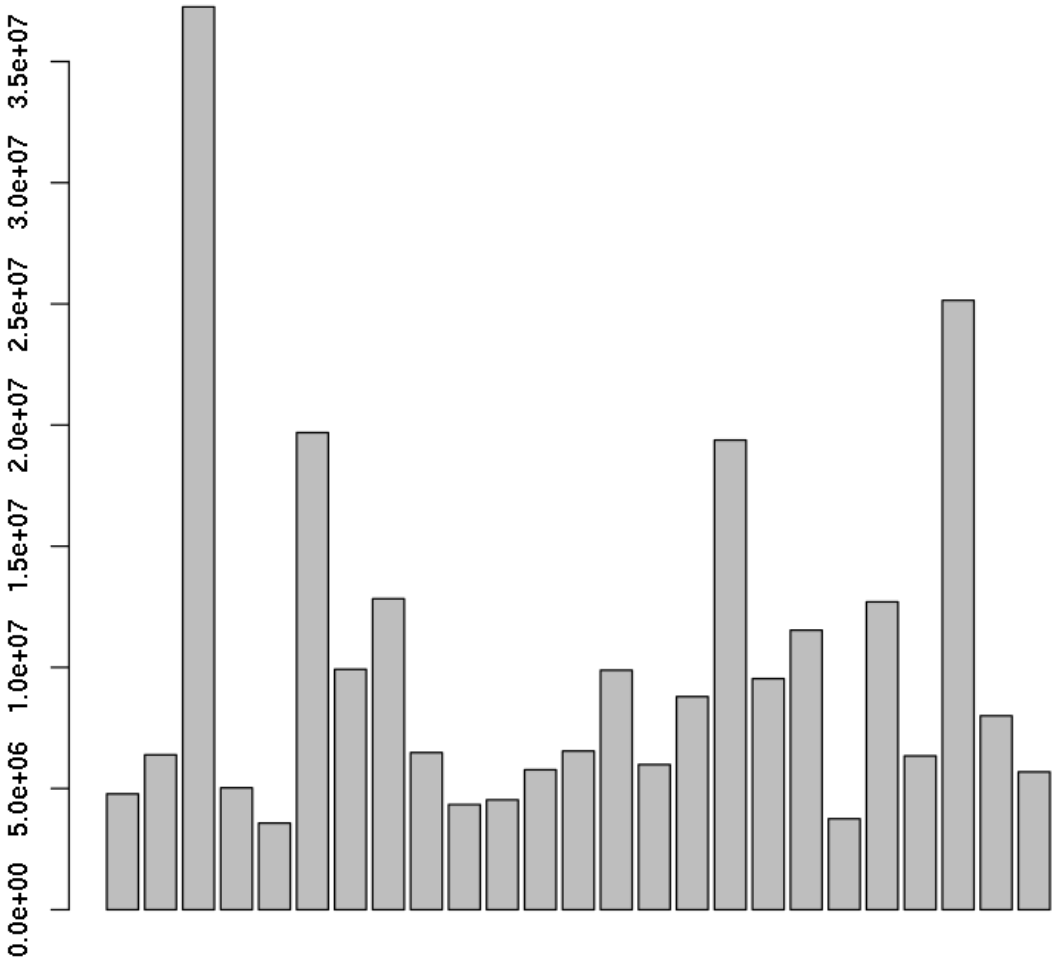
```
Attaching package: ‘dplyr’

The following objects are masked from ‘package:stats’:

    filter, lag

The following objects are masked from ‘package:base’:

    intersect, setdiff, setequal, union
```

state	abb	region	population	PopulationDensity	murders	gunmurders	gunownership
Alabama	AL	South	4779736	94.65	199	135	0.517
Arizona	AZ	West	6392017	57.05	352	232	0.311
California	CA	West	37253956	244.20	1811	1257	0.213
Colorado	CO	West	5029196	49.33	117	65	0.347
Connecticut	CT	Northeast	3574097	741.40	131	97	0.167
Florida	FL	South	19687653	360.20	987	669	0.245

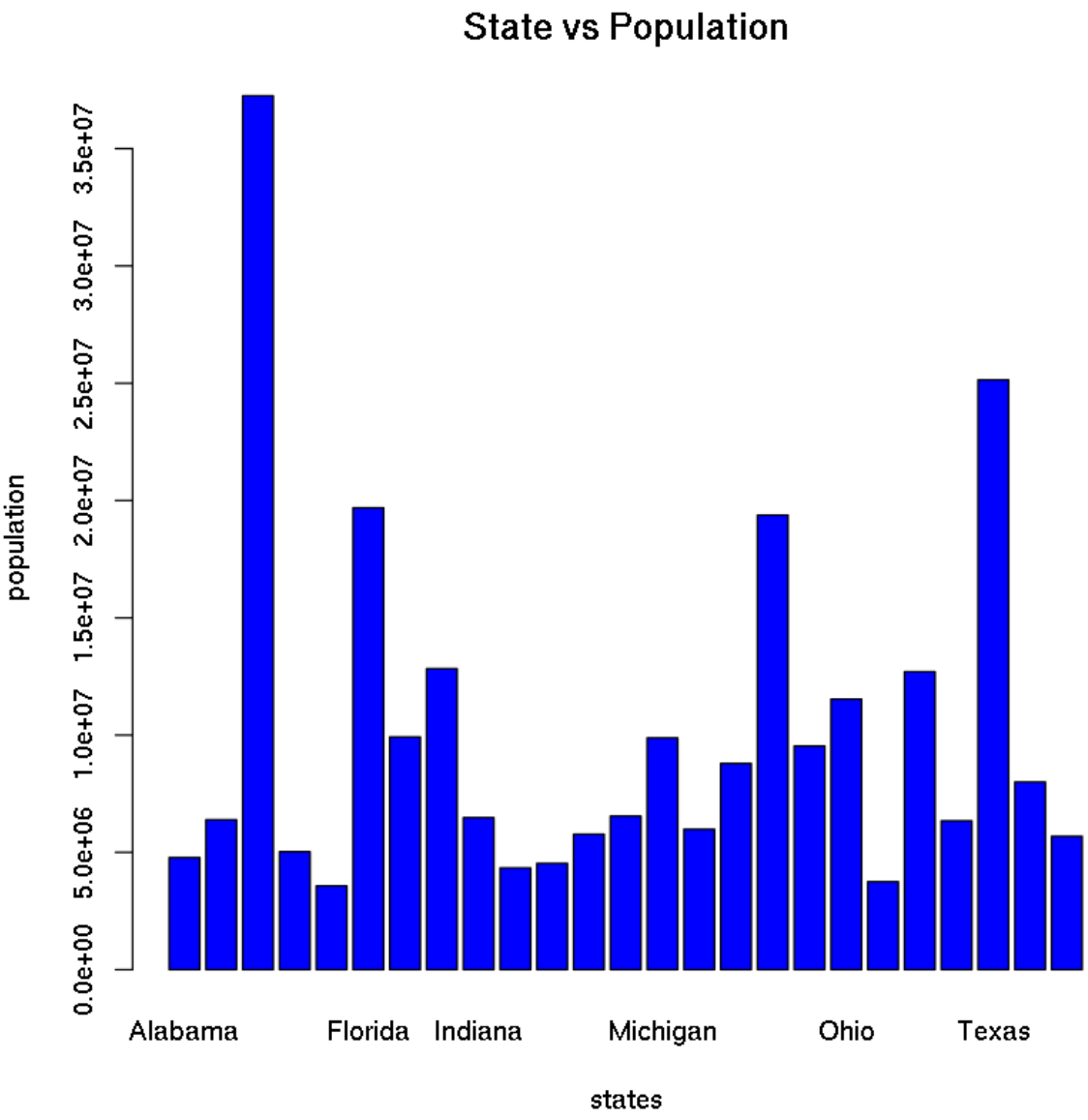
```
subdf <- select(df, state, population, murders)
head(subdf)
```

state	population	murders
Alabama	4779736	199
Arizona	6392017	352
California	37253956	1811
Colorado	5029196	117
Connecticut	3574097	131
Florida	19687653	987

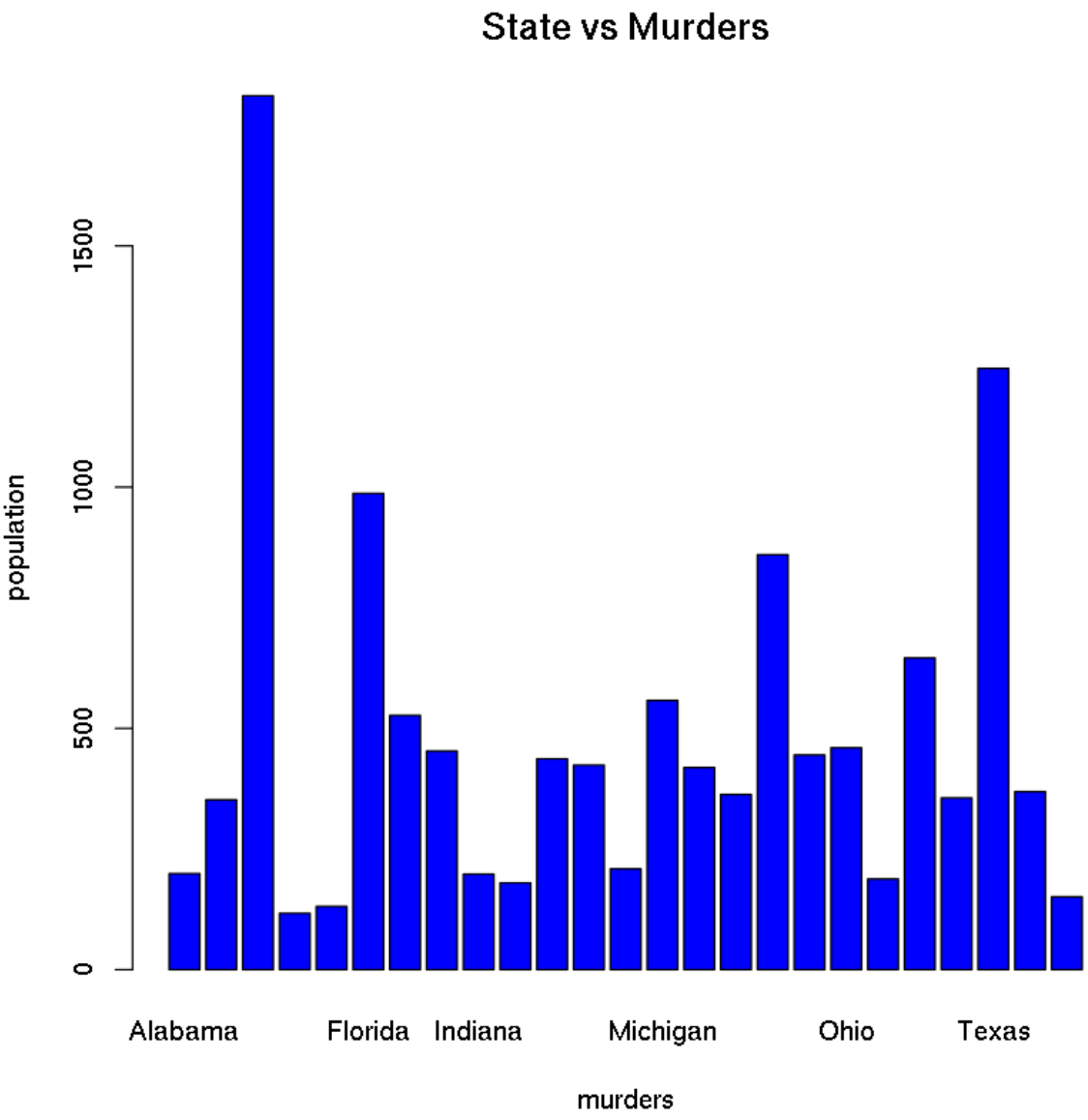
```
barplot(subdf$population)
```




```
# kostumisasi grafik
barplot(subdf$population,
       xlab='states',
       ylab='population',
       main='State vs Population',
       names.arg = subdf$state,
       col='blue')
```




```
# kostumisasi grafik murders
barplot(subdf$murders,
       xlab='murders',
       ylab='population',
       main='State vs Murders',
       names.arg = subdf$state,
       col='blue')
```




```r
# mengurutkan df berdasarkan angka pembunuhan (secara terbalik)
dfsort <- arrange(df, desc(murders))

# menseleksi kolom - kolom tertentu
subdfsort <- select(dfsort, state, population, murders)

# Mengambil 5 data tertinggi untuk kasus pembunuhan
topsubdfsort <- head(subdfsort,5)

# PLOT!!!
barplot(topsubdfsort$murders,
       xlab='murders',
       ylab='population',
       main='State vs Murders',
       names.arg = topsubdfsort$state,
       col='blue')
```

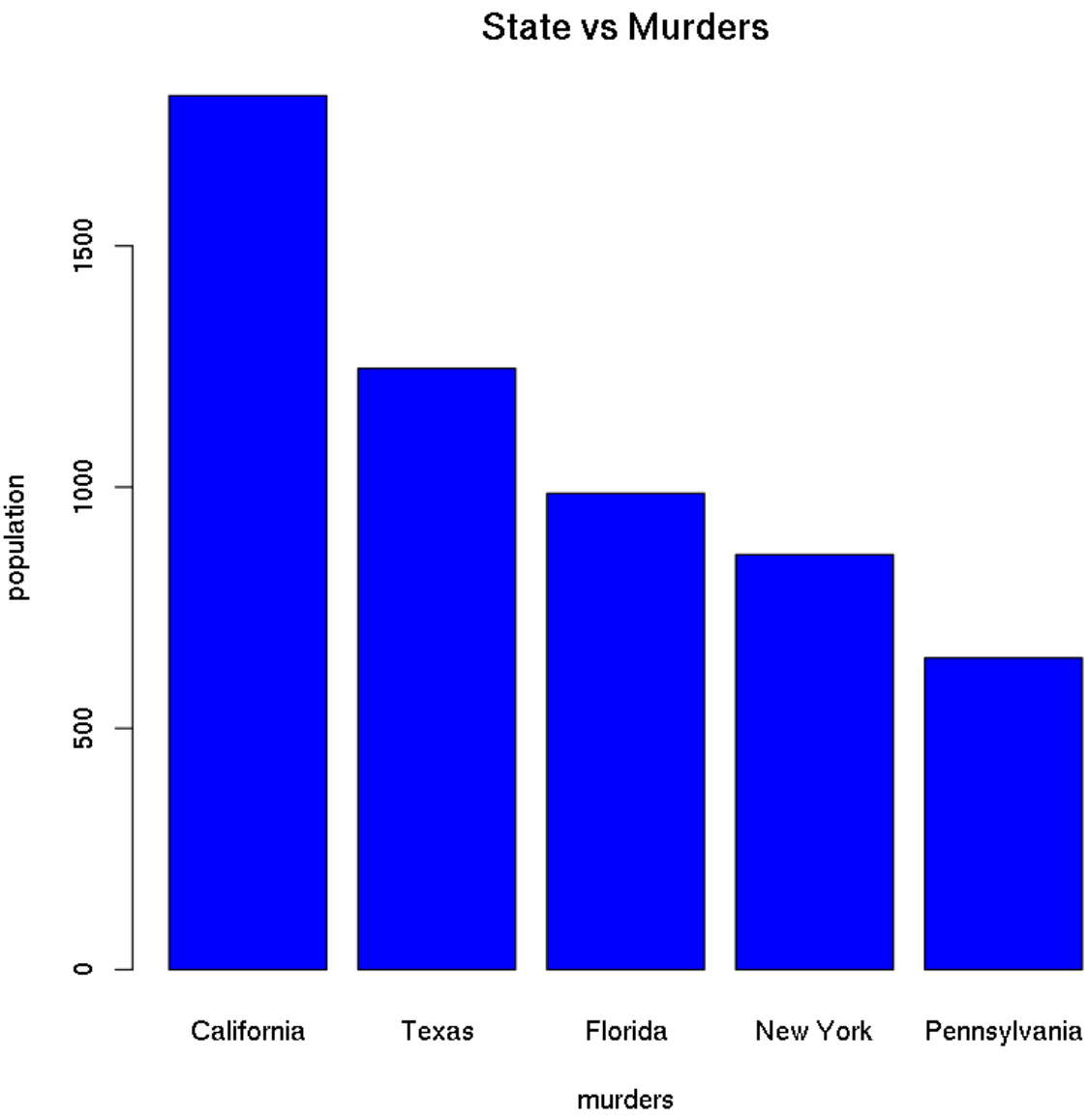


Diagram batang horizontal

```
df <- read.csv("../data/murdersmini.csv")
df
```

state	population	murders
Arizona	6392017	352
Colorado	5029196	117
Georgia	9920000	527
Iowa	3046355	38
Kansas	2853118	100
Maine	1328361	24
Michigan	9883640	558
New York	19378102	860
Texas	25145561	1246
Washington	6724540	151

```
seldf <- select(df, state, murders)
barplot(seldf$murders, horiz=T,
       xlab='Murders', ylab='States',
       main = 'States vs Murders',
       col='blue',
       names.arg = seldf$state)
```

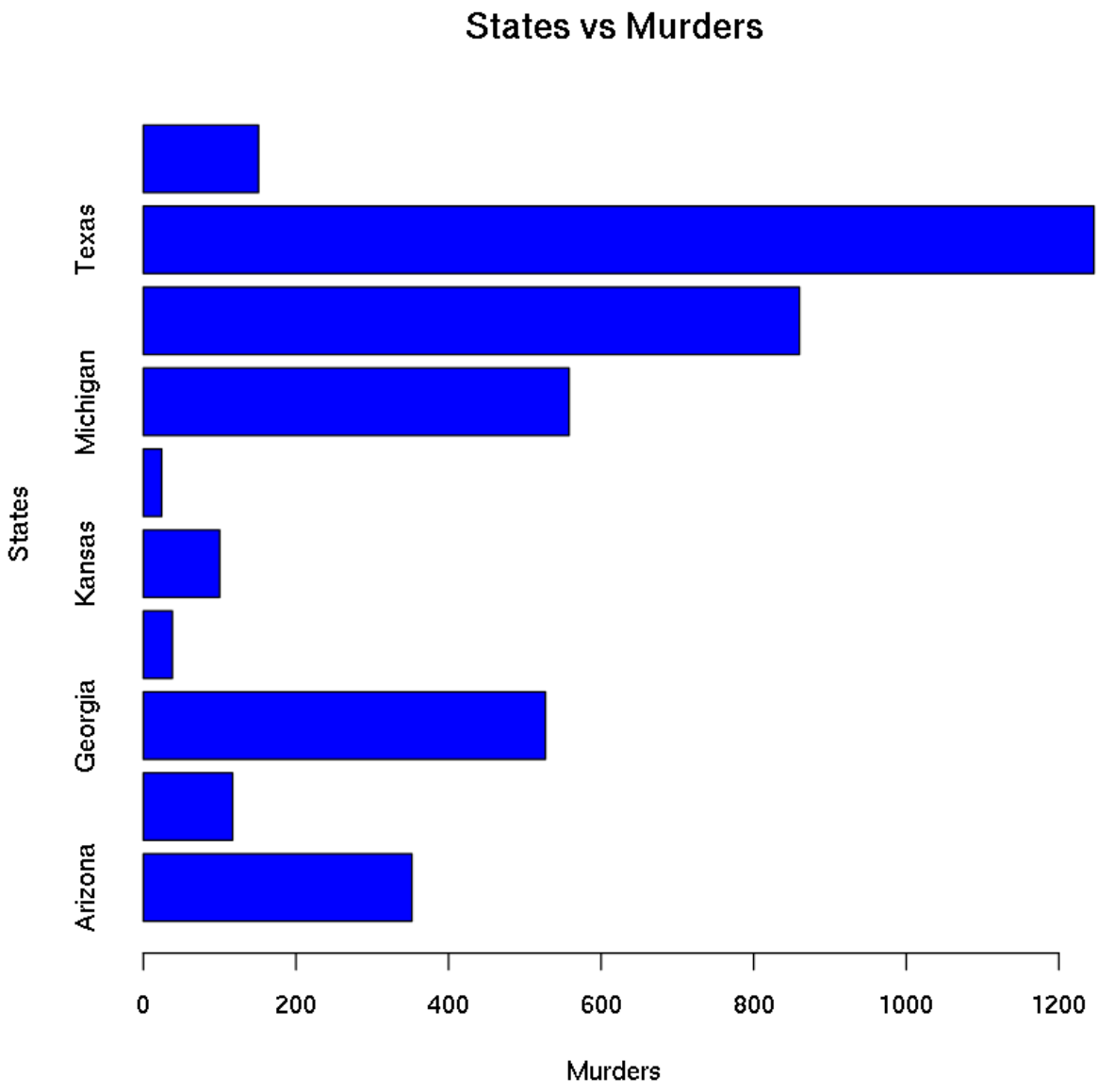


Diagram batang bertumpuk

```
df
```

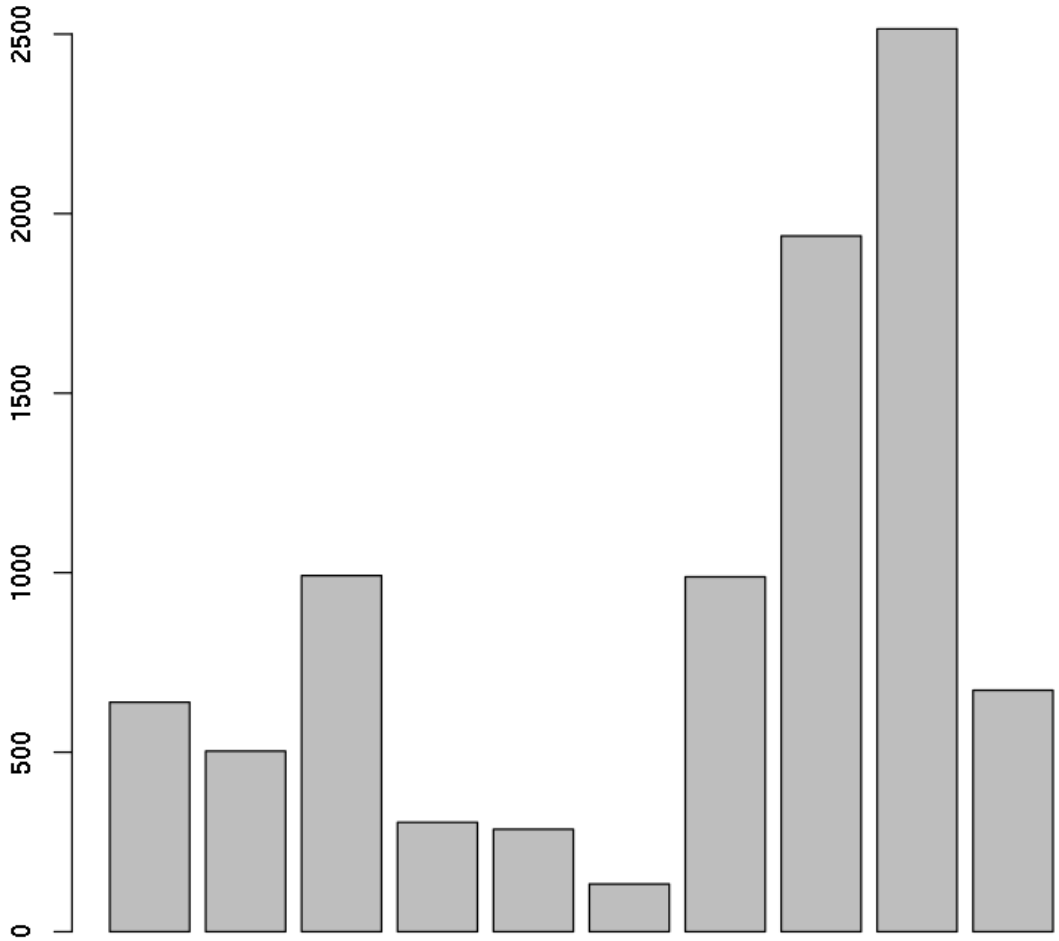
state	population	murders
Arizona	6392017	352
Colorado	5029196	117
Georgia	9920000	527
Iowa	3046355	38
Kansas	2853118	100
Maine	1328361	24
Michigan	9883640	558
New York	19378102	860
Texas	25145561	1246
Washington	6724540	151

```
dfs <- mutate(df,pop = population / 10000)
```

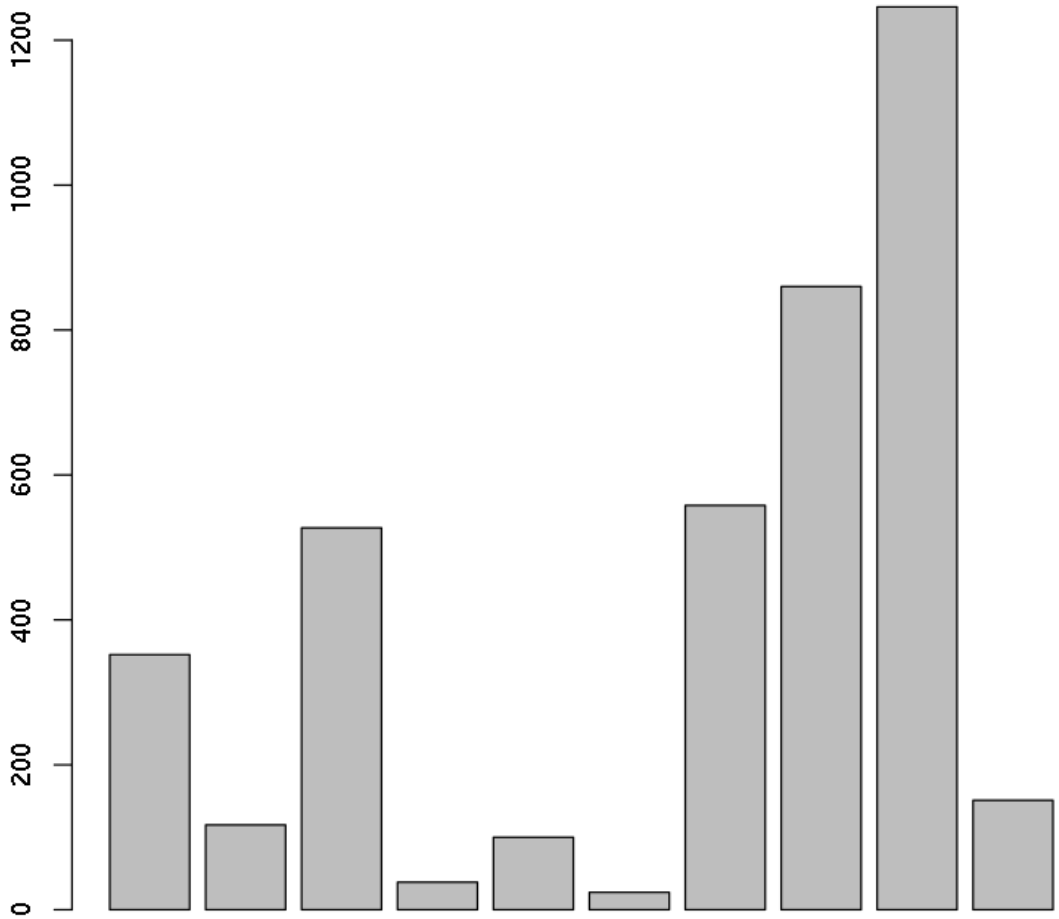
```
names(dfs)
```

1. 'state'
2. 'population'
3. 'murders'
4. 'pop'

```
dfs <- dfs[c(1,3,4)]
barplot(dfs$pop)
```



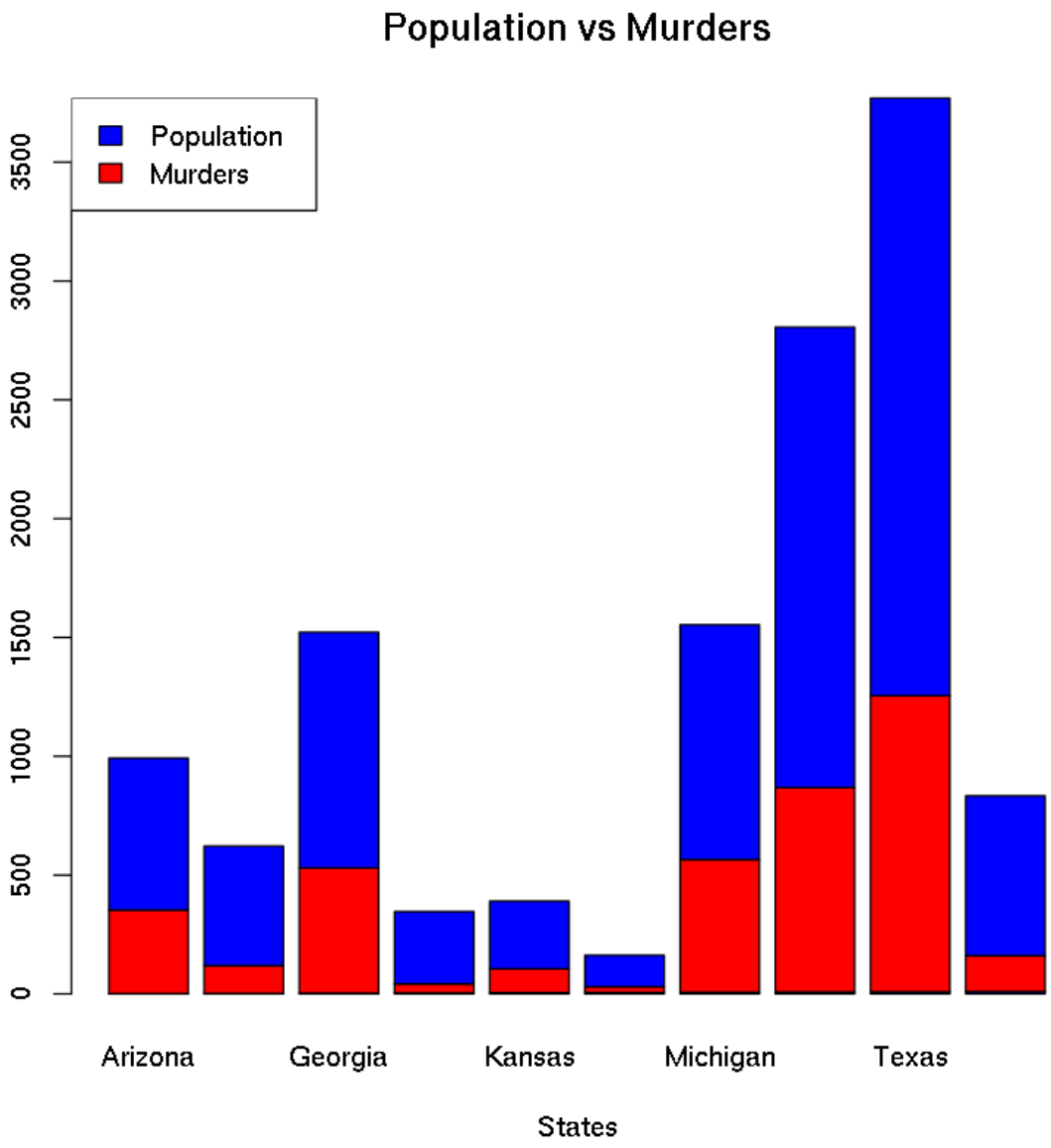

```
barplot(dfs$murders)
```




```
mat <- data.matrix(dfs)
mat <- t(mat) # transpos
mat
```

state	1.0000	2.0000	3	4.0000	5.0000	6.0000	7.000	8.00	9.000	10.000
murders	352.0000	117.0000	527	38.0000	100.0000	24.0000	558.000	860.00	1246.000	151.000
pop	639.2017	502.9196	992	304.6355	285.3118	132.8361	988.364	1937.81	2514.556	672.454

```
barplot(mat,
       xlab='States',
       main='Population vs Murders',
       col=c('blue', 'red'),
       names.arg=dfs$state)
legend('topleft', c('Population', 'Murders'), fill=c('blue', 'red'))
```



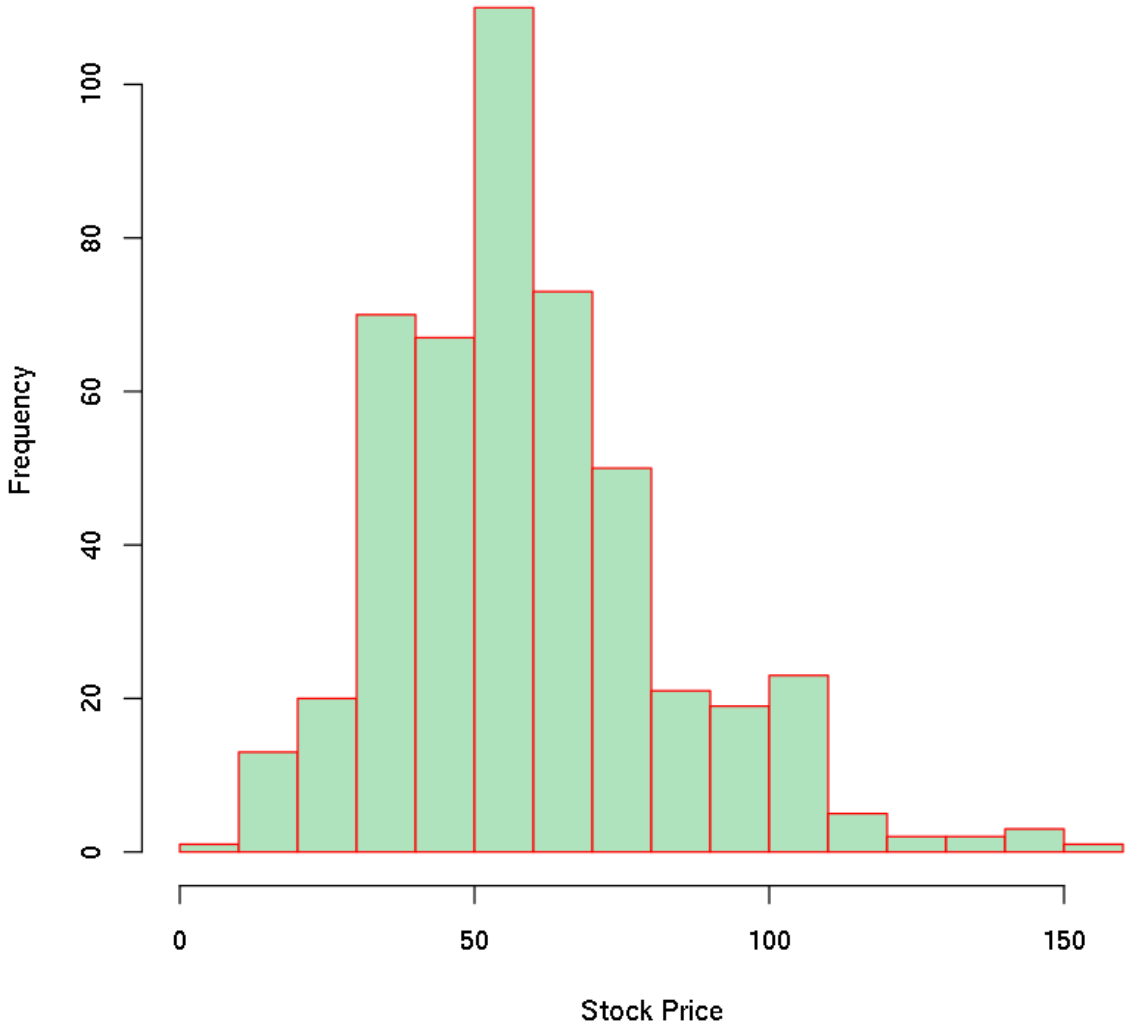
Histogram

```
df <- read.csv('../data/GEStock.csv')
head(df)
```

Date	Price
1/1/70	74.25333
2/1/70	69.97684
3/1/70	72.15857
4/1/70	74.25273
5/1/70	66.66524
6/1/70	67.59318

```
subdf <- select(df, Date, Price)
```

```
hist(subdf$Price,
    xlab='Stock Price',
    main='',
    col='#afe3be',
    border='red',
    breaks = 20) # secara default bins=10
```



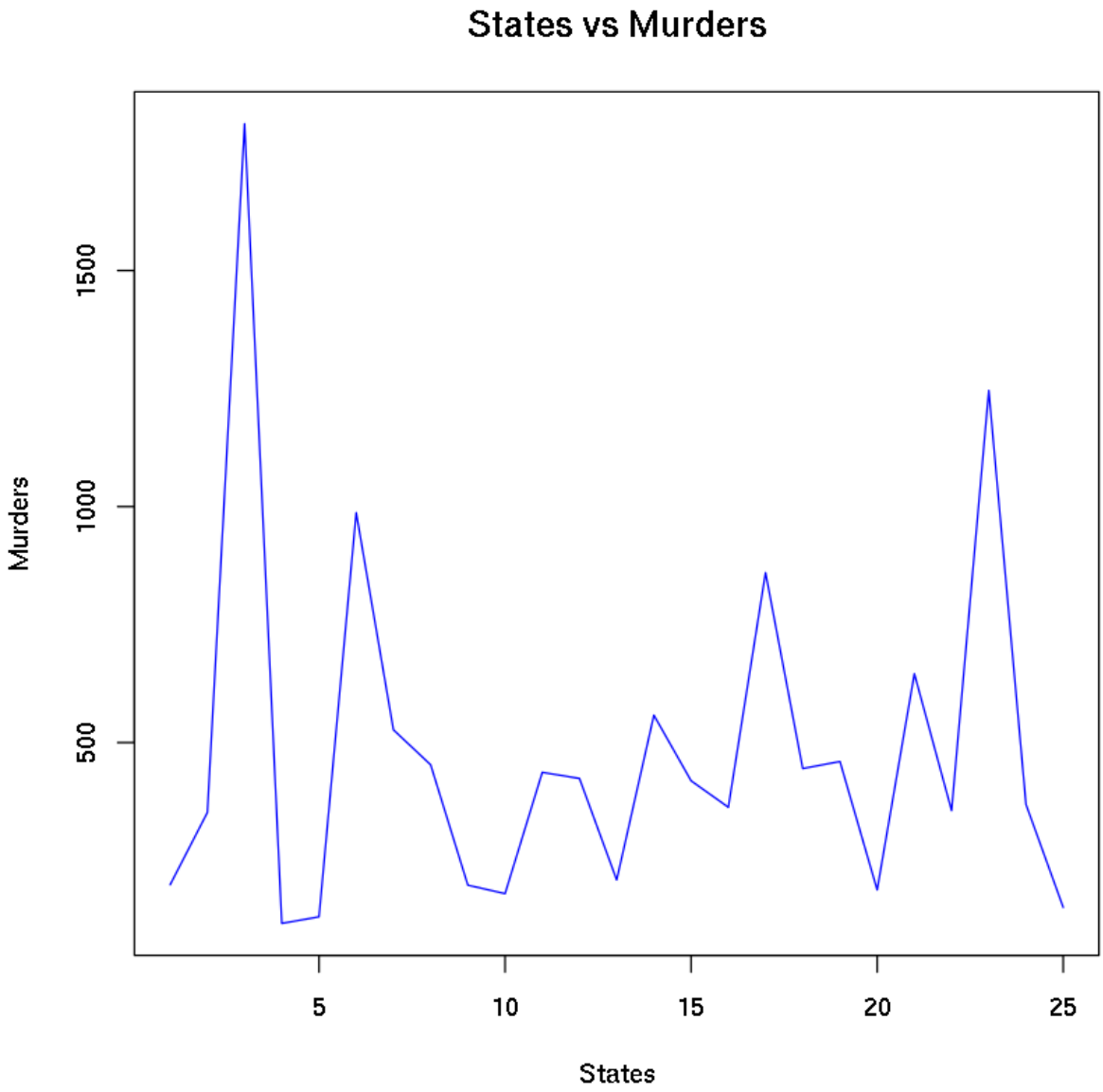
Scatterplot

```
df <- read.csv("../data/murders.csv")
df <- select(df,state,population,murders)
```

```
plot(df$population, df$murders,
    xlab='Population', ylab='Murders',
    main='Population vs Murders', col='red',
    pch = 20)
```

Diagram garis

```
plot(df$murders,type='l',
    xlab='States', ylab='Murders',
    main='States vs Murders',
    col='blue')
```

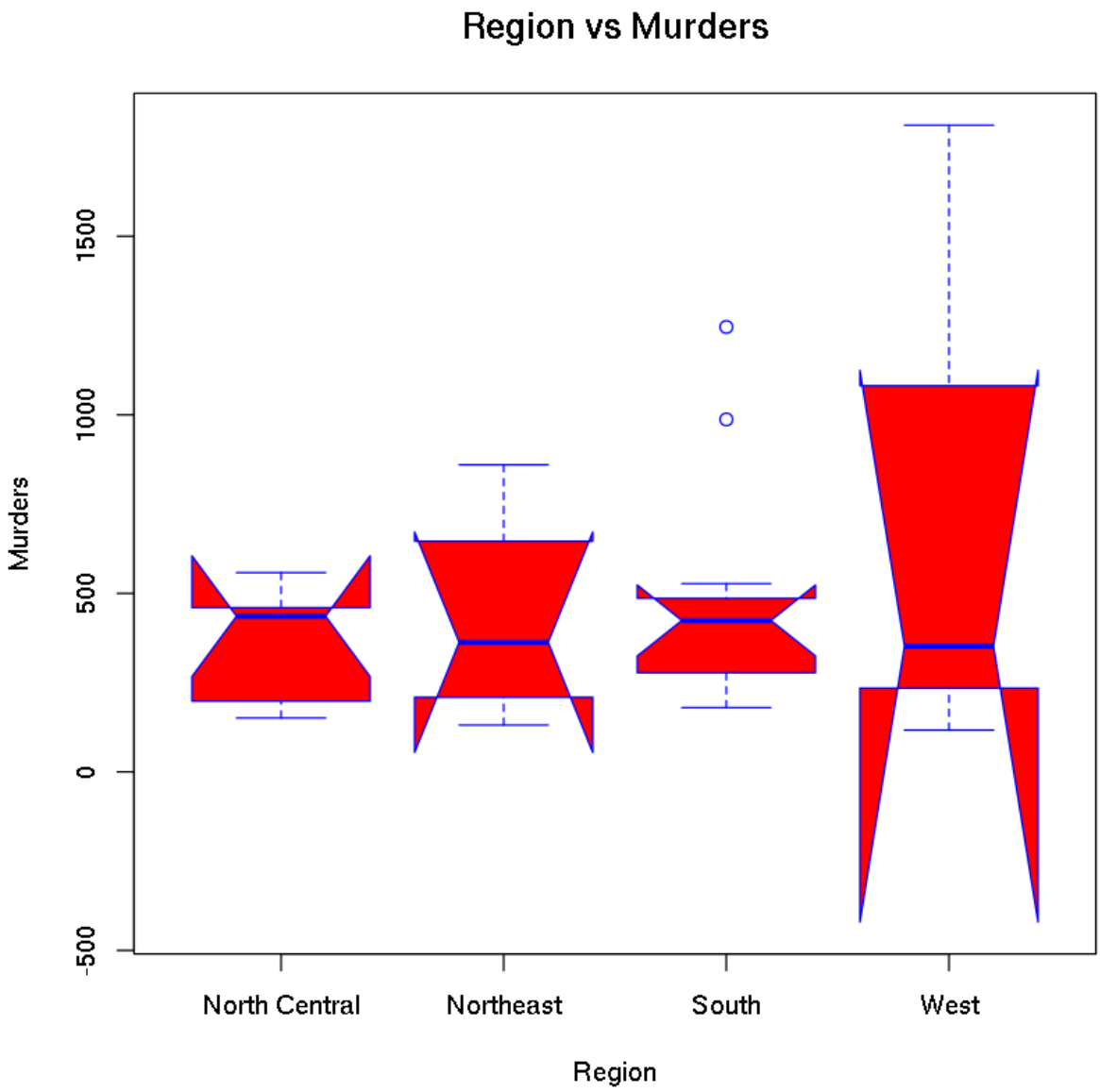


Boxplot

```
df <- read.csv('../data/murders.csv')
df <- select(df, state, population,murders, region)
```

```
boxplot(df$murders ~ df$region,
       xlab='Region', ylab='Murders',
       main='Region vs Murders',
       col='red', border='blue',
       notch=T) # dipisahkan berdasarkan region
```

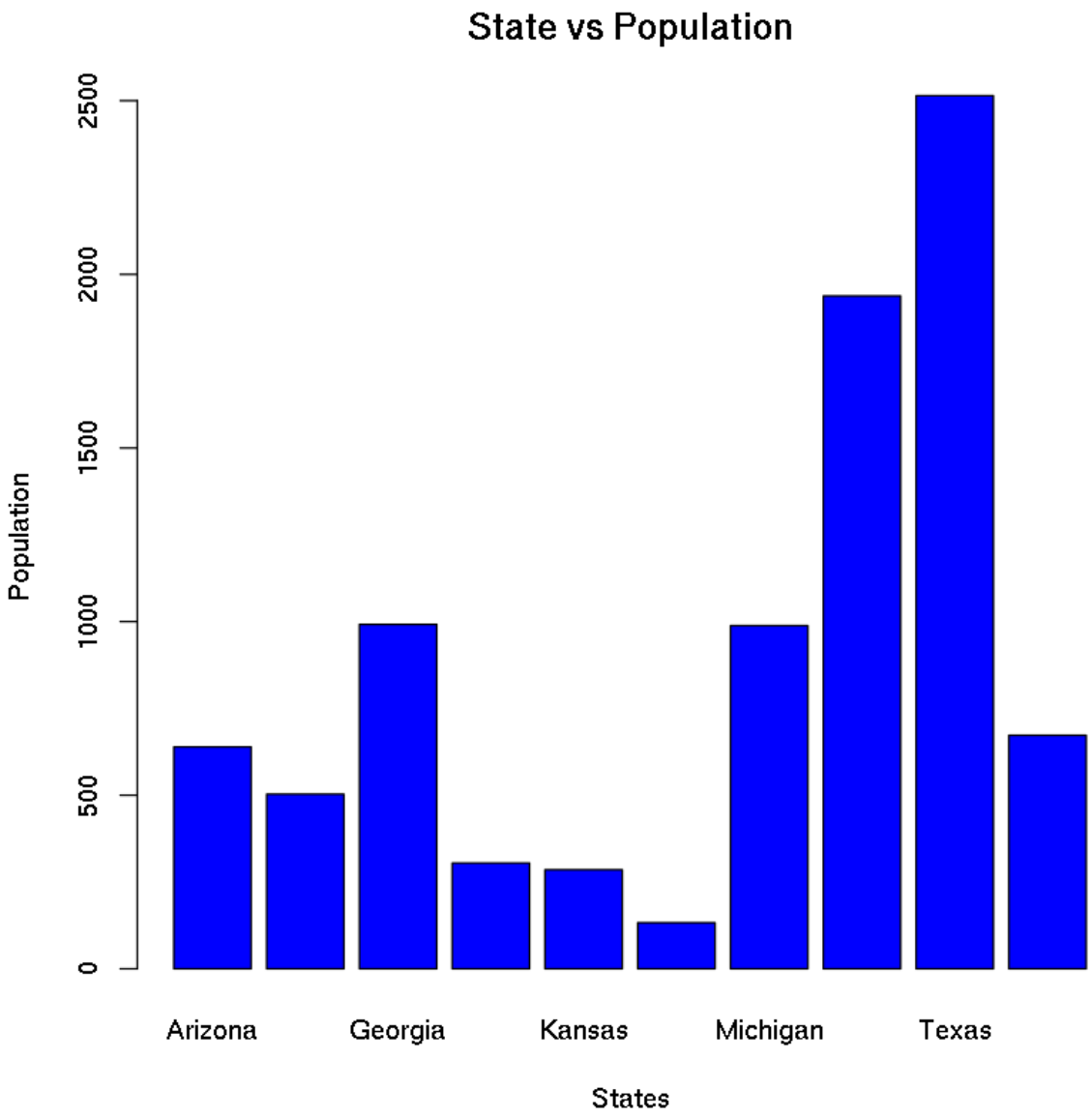
```
Warning message in bxp(list(stats = structure(c(151, 198, 436, 460, 558, 131, 209, :
“some notches went outside hinges ('box'): maybe set notch=FALSE”
```



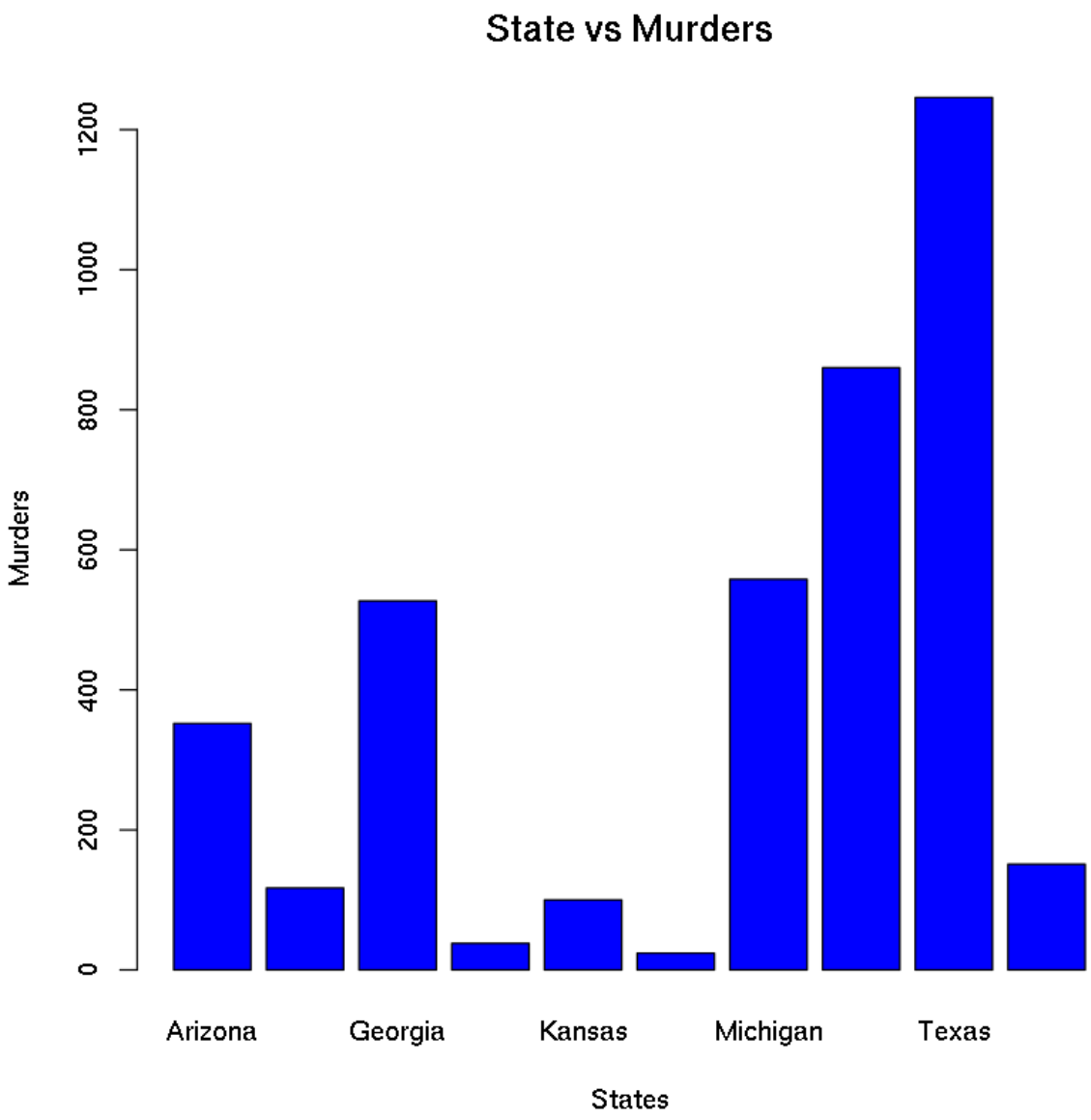
Kombinasi plot

```
df <- read.csv("../data/murdersmini.csv")
df <- mutate(df, pop = population/10000)
df <- df[c(1,3,4)] # seleksi kolom 1, 3, dan 4
```

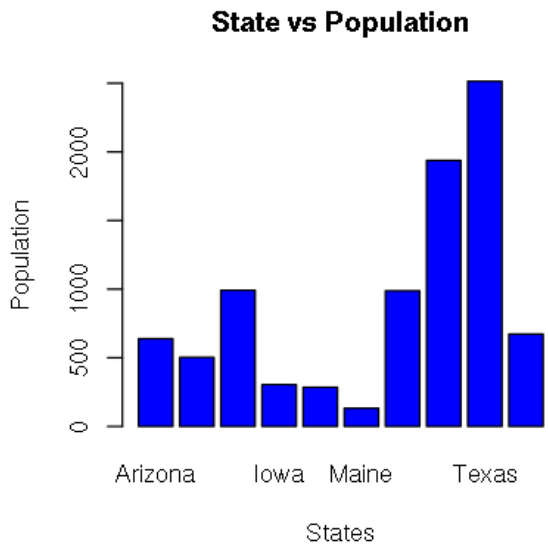
```
barplot(df$pop, xlab='States', ylab='Population',
        main='State vs Population', col='blue', names.arg=df$state)
```

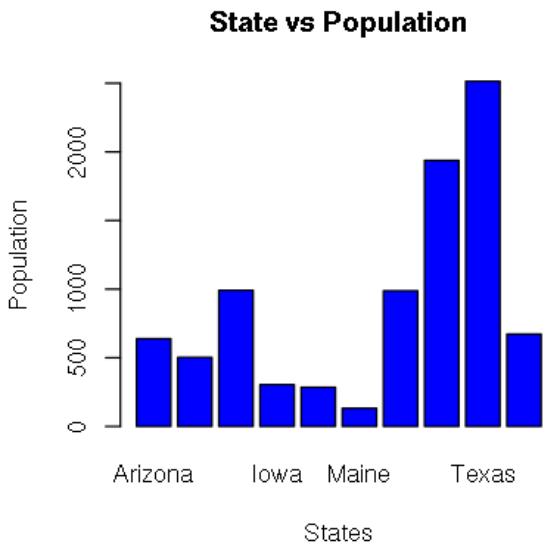



```
barplot(df$murders, xlab='States', ylab='Murders',
        main='State vs Murders', col='blue',
       names.arg=df$state)
```




```
# Supaya tidak jadi dua plot:
par(mfrow=c(2,2)) # 2 baris, 2 kolom
barplot(df$pop, xlab='States', ylab='Population',
        main='State vs Population', col='blue', names.arg=df$state)
barplot(df$pop, xlab='States', ylab='Population',
        main='State vs Population', col='blue', names.arg=df$state)
plot(df$pop, df$murders, xlab='Population', ylab='Murders',
     col='red',pch=20, main='Population vs Murders')
```


State vs Population
Population
0
500
1000
2000
Arizona
Iowa
Maine
Texas
States


State vs Population
Population
0
500
1000
2000
Arizona
Iowa
Maine
Texas
States


Population vs Murders
Murders
0
200
600
1000
500
1000
1500
2000
2500
Population