Q-3)

```
library (dplyr)
setwd ("D:/rp/Pop/Data")
mydata <- read.csv ("D:/rp/Pop/pop.csv")
View(mydata)
str (mydata)
plot (mydata)
barplot(mydata$GrowthRate, col = 'purple')
pie (mydata $ year)
min (mydata $year)
max (mydata $ year)
mean (mydata $ year)
median (mydata $ year)
sd (mydata $ GrowthRate)
var (mydata $ GrowthRate)
List (mydata $year, col = 'blue')
boxplot (mydata $year, col = 'red')
dotchart (mydata $year, col = 'black')
quantile (mydata $ GrowthRate, 0.25)
quantile (mydata $ GrowthRate, 0.75)
summary (mydata)
```

R version 4.1.1 (2021-08-10) -- "Kick Things"
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Platform: x86_64-w64-mingw32/x64 (64-bit)

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[Workspace loaded from D:/rp/Pop/

```
Data/.RData]

> ## loading the dplyr library
> 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

Warning message:
package 'dplyr' was built under R
version 4.1.2
>
> ## setting working directory
> setwd("D:/rp/Pop/Data")
>
> ## reading the dataset (.csv)
> mydata<-read.csv("D:/rp/Pop/
pop.csv")
>
```

```
> ## viewing dataset
> View(mydata)
>
> ## displaying internal structure
> str(mydata)
'data.frame': 12 obs. of  3 variables:
 $ Year      : int  2021 2020 2019 2018
2017 2016 2015 2014 2013 2012 ...
 $ Population: int  1393409038
1380004385 1366417754
1352642280 1338676785
1324517249 1310152403
1295600772 1280842125
1265780247 ...
 $ GrowthRate: num  0.97 0.99 1.02
1.04 1.07 1.1 1.12 1.15 1.19 1.24 ...
>
> ## drawing points (markers)
> plot(mydata)
>
> ## representing data in rectangular
bars with length of the bar
proportional to the value of variable
> barplot(mydata$GrowthRate, col =
'purple')
>
> ## representing data as slices of a
circle with different colors
```

```
> pie(mydata$Year)
>
> ## finding minimum element
present in the dataset
> min(mydata$Year)
[1] 2010
>
> ## finding maximum element
present in the dataset
> max(mydata$Year)
[1] 2021
>
> ## calculating arithmetic mean of
the dataset
> mean(mydata$Year)
[1] 2015.5
>
> ## calculating median (middle
most value) in the dataset
> median(mydata$Year)
[1] 2015.5
>
> ## calculating standard diviation
> sd(mydata$GrowthRate)
[1] 0.123543
>
> ## calculating variance
> var(mydata$GrowthRate)
```

```
[1] 0.01526288
>
> ## representing the frequencies of
values of variables
> hist(mydata$Year, col = 'blue')
>
> ## representing that how well
distributed is the data in the dataset
> boxplot(mydata$Year, col = 'red')
>
> ## representing specified data in
the dot form
> dotchart(mydata$Year, color =
'black')
>
> ## creating sample quantiles
within a dataset with probability [0, 1]
> quantile(mydata$GrowthRate, 0.25)
  25%
1.035
>
> quantile(mydata$GrowthRate, 0.75)
   75%
1.2025
>
> ## summary of the dataset
> summary(mydata)
      Year       Population
```

```
> quantile(mydata$GrowthRate, 0.25)
  25%
1.035
>
> quantile(mydata$GrowthRate, 0.75)
  75%
1.2025
>
> ## summary of the dataset
> summary(mydata)
      Year       Population
GrowthRate
 Min.   :2010   Min.   :1.234e+09
Min.   :0.970
 1st Qu.:2013   1st Qu.:1.277e+09
1st Qu.:1.035
 Median :2016   Median :1.317e+09
Median :1.110
 Mean   :2016   Mean   :1.316e+09
Mean   :1.129
 3rd Qu.:2018   3rd Qu.:1.356e+09
3rd Qu.:1.202
 Max.   :2021   Max.   :1.393e+09
Max.   :1.360
```