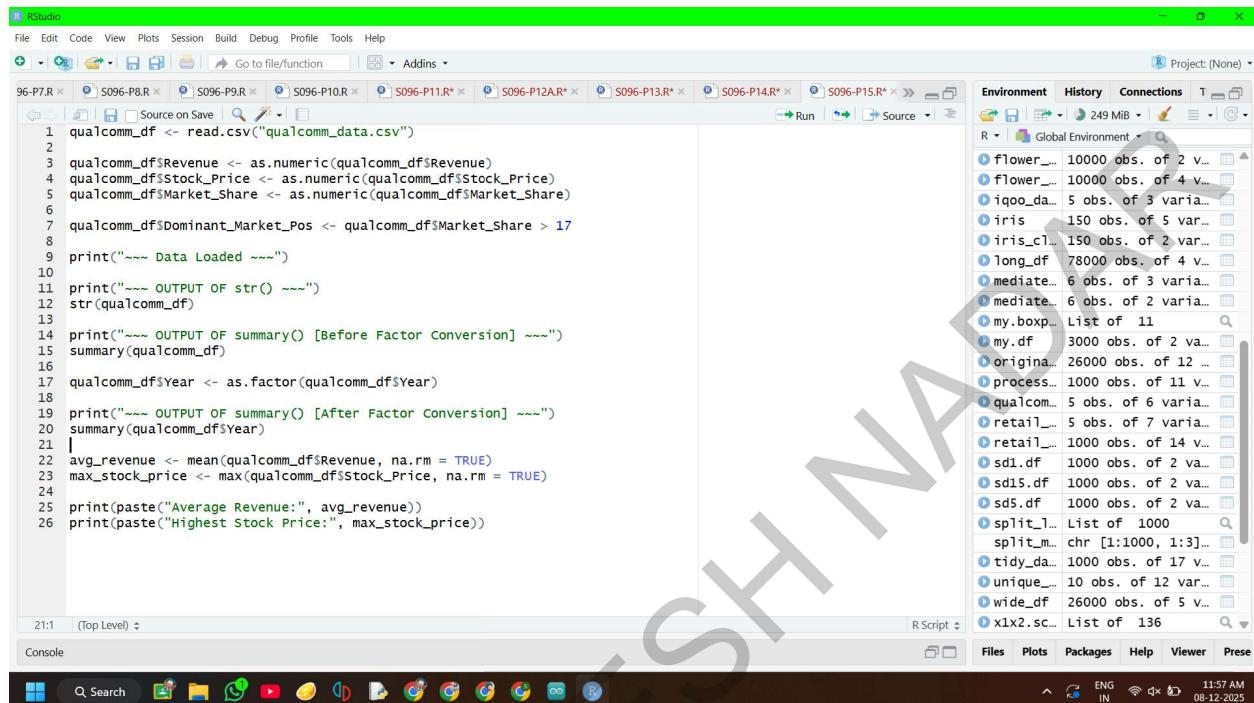


SHETH L.U.J. AND SIR M.V. COLLEGE
DATA ANALYSIS WITH SAS/SPSS/R

PRACTICAL NO: 15

AIM: Generating basic summaries using str() or summary() (R).

CODE:



```

RStudio
File Edit Code View Plots Session Build Debug Profile Tools Help
+ Source on Save Go to file/function Addins
96-P7.R × S096-P8.R × S096-P9.R × S096-P10.R × S096-P11.R* S096-P12A.R* S096-P13.R* S096-P14.R* S096-P15.R* Run Source
1 qualcomm_df <- read.csv("qualcomm_data.csv")
2
3 qualcomm_df$Revenue <- as.numeric(qualcomm_df$Revenue)
4 qualcomm_df$Stock_Price <- as.numeric(qualcomm_df$Stock_Price)
5 qualcomm_df$Market_Share <- as.numeric(qualcomm_df$Market_Share)
6
7 qualcomm_df$Dominant_Market_Pos <- qualcomm_df$Market_Share > 17
8
9 print("~~~ Data Loaded ~~~")
10
11 print("~~~ OUTPUT OF str() [Before Factor Conversion] ~~~")
12 str(qualcomm_df)
13
14 print("~~~ OUTPUT OF summary() [Before Factor Conversion] ~~~")
15 summary(qualcomm_df)
16
17 qualcomm_df$Year <- as.factor(qualcomm_df$Year)
18
19 print("~~~ OUTPUT OF summary() [After Factor Conversion] ~~~")
20 summary(qualcomm_df$Year)
21
22 avg_revenue <- mean(qualcomm_df$Revenue, na.rm = TRUE)
23 max_stock_price <- max(qualcomm_df$Stock_Price, na.rm = TRUE)
24
25 print(paste("Average Revenue:", avg_revenue))
26 print(paste("Highest Stock Price:", max_stock_price))

```

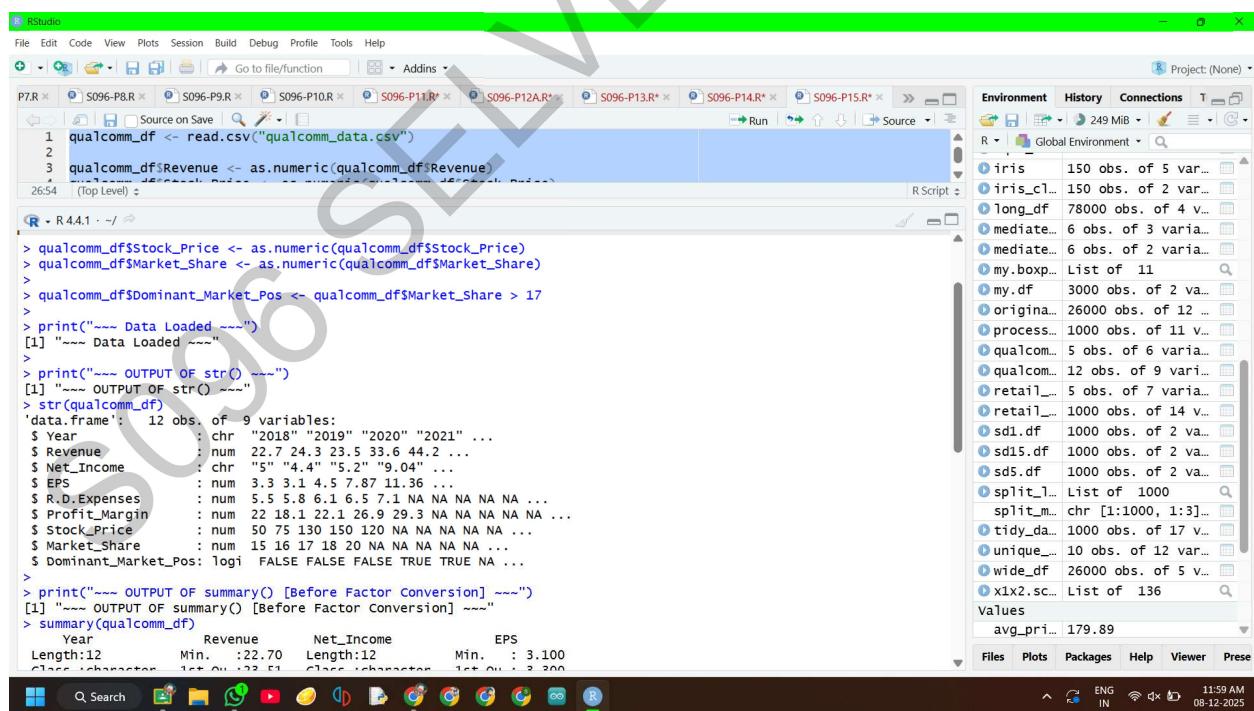
21:1 (Top Level) R Script

Console

Q Search

ENG IN 11:57 AM 08-12-2025

OUTPUT:



```

RStudio
File Edit Code View Plots Session Build Debug Profile Tools Help
+ Source on Save Go to file/function Addins
P7.R × S096-P8.R × S096-P9.R × S096-P10.R × S096-P11.R* S096-P12A.R* S096-P13.R* S096-P14.R* S096-P15.R* Run Source
1 qualcomm_df <- read.csv("qualcomm_data.csv")
2
3 qualcomm_df$Revenue <- as.numeric(qualcomm_df$Revenue)
4
5 qualcomm_df$Dominant_Market_Pos <- qualcomm_df$Market_Share > 17
6
7 print("~~~ Data Loaded ~~~")
[1] "~~~ Data Loaded ~~~"
8
9 print("~~~ OUTPUT OF str() ~~~")
[1] "~~~ OUTPUT OF str() ~~~"
> str(qualcomm_df)
'data.frame': 12 obs. of 9 variables:
 $ Year : chr "2018" "2019" "2020" "2021" ...
 $ Revenue : num 22.7 24.3 23.5 33.6 44.2 ...
 $ Net_Income : chr "5" "4.4" "5.2" "9.04" ...
 $ EPS : num 3.3 3.1 4.5 7.87 11.36 ...
 $ R.D.Expenses : num 5.5 5.8 6.1 6.5 7.1 NA NA NA NA ...
 $ Profit_Margin : num 22 18.1 22.1 26.9 29.3 NA NA NA NA ...
 $ Stock_Price : num 50 75 130 150 120 NA NA NA NA ...
 $ Market_Share : num 15 16 17 18 20 NA NA NA NA ...
 $ Dominant_Market_Pos: logi FALSE FALSE FALSE TRUE TRUE NA ...
>
9 print("~~~ OUTPUT OF summary() [Before Factor Conversion] ~~~")
[1] "~~~ OUTPUT OF summary() [Before Factor Conversion] ~~~"
> summary(qualcomm_df)
   Year      Revenue      Net_Income       EPS
Length:12    Min. :22.70    Length:12    Min. : 3.100
Class:character  1st Qu.:23.50    Class:character  1st Qu.: 3.300
                           Median :24.30    Median : 4.400
                           Mean   :27.80    Mean   : 7.870
                           3rd Qu.:29.30    3rd Qu.: 5.200
                           Max. :44.20    Max. :11.360

```

26:54 (Top Level) R Script

Console

Q Search

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DATA ANALYSIS WITH SAS/SPSS/R

The screenshot shows an RStudio interface with the following details:

- File Menu:** File, Edit, Code, View, Plots, Session, Build, Debug, Profile, Tools, Help.
- Addins:** Go to file/function, Addins.
- Project:** Project: (None)
- Environment:** Global Environment (249 MB).
- Code Editor:** P7.R, S096-P8.R, S096-P9.R, S096-P10.R, S096-P11.R*, S096-P12.R*, S096-P13.R*, S096-P14.R*, S096-P15.R*. The current tab is S096-P11.R*.
- Run Tab:** Run, Source, Source (dropdown).
- Output:** R Script (dropdown). The output pane displays the following R code and its results:

```
R> R44.1: ~/ ~
Class :character 1st Qu.:25.51  Class :character 1st Qu.: 3.000
Mode  :character Median:24.29  Mode  :character Median : 4.500
               Mean :29.66   Mean  : 6.026
               Median:22.10  Median :17.0   TRUE :2
               Mean :6.2     Mean  :17.2   NA's  :7
               3rd Qu.:33.59 3rd Qu.: 7.870
               Max. :44.20   Max.  :11.360
               NA's  :2

R.D.Expenses Profit_Margin Stock_Price Market_Share Dominant_Market_Pos
Min.   :5.5    Min.   :18.10  Min.   : 50   Min.   :15.0   Mode :logical
1st Qu.:5.8   1st Qu.:22.00  1st Qu.: 75   1st Qu.:16.0   FALSE:3
Median :6.1   Median :22.10  Median :120   Median :17.0   TRUE :2
Mean   :6.2   Mean   :23.68  Mean   :105   Mean   :17.2   NA's  :7
3rd Qu.:6.5   3rd Qu.:26.90  3rd Qu.:130  3rd Qu.:18.0
Max.   :7.1   Max.   :29.30  Max.   :150   Max.   :20.0
NA's   :7     NA's   :7     NA's   :7     NA's   :7

>
> qualcomm_df$Year <- as.factor(qualcomm_df$Year)
>
> print("~~~ OUTPUT OF summary() [After Factor Conversion] ~~~")
[1] "~~~ OUTPUT OF summary() [After Factor Conversion] ~~~"
> summary(qualcomm_df$Year)
  2018 2019 2020 2021 2022
1     2     2     2     2

Fiscal Year
  1

>
> avg_revenue <- mean(qualcomm_df$Revenue, na.rm = TRUE)
> max_stock_price <- max(qualcomm_df$Stock_Price, na.rm = TRUE)
>
> print("~~~ OUTPUT OF summary() [After Factor Conversion] ~~~")
```

The bottom status bar shows the following information: ENG IN, 11:59 AM, 08-12-2025.

