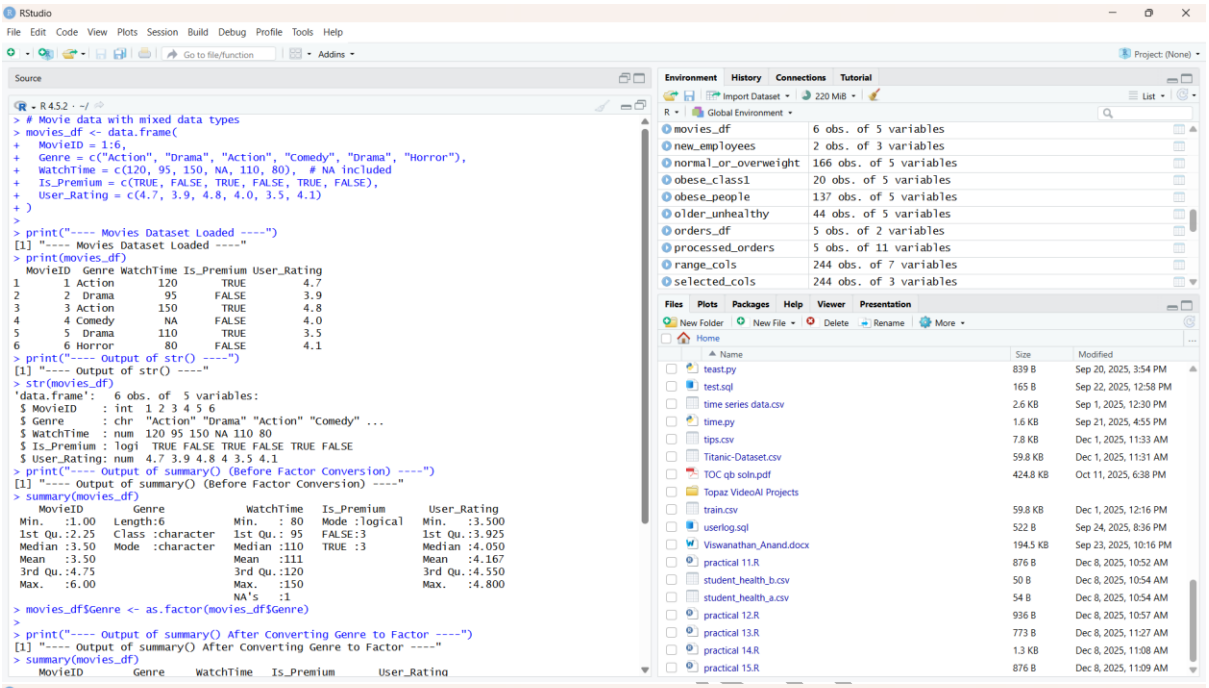
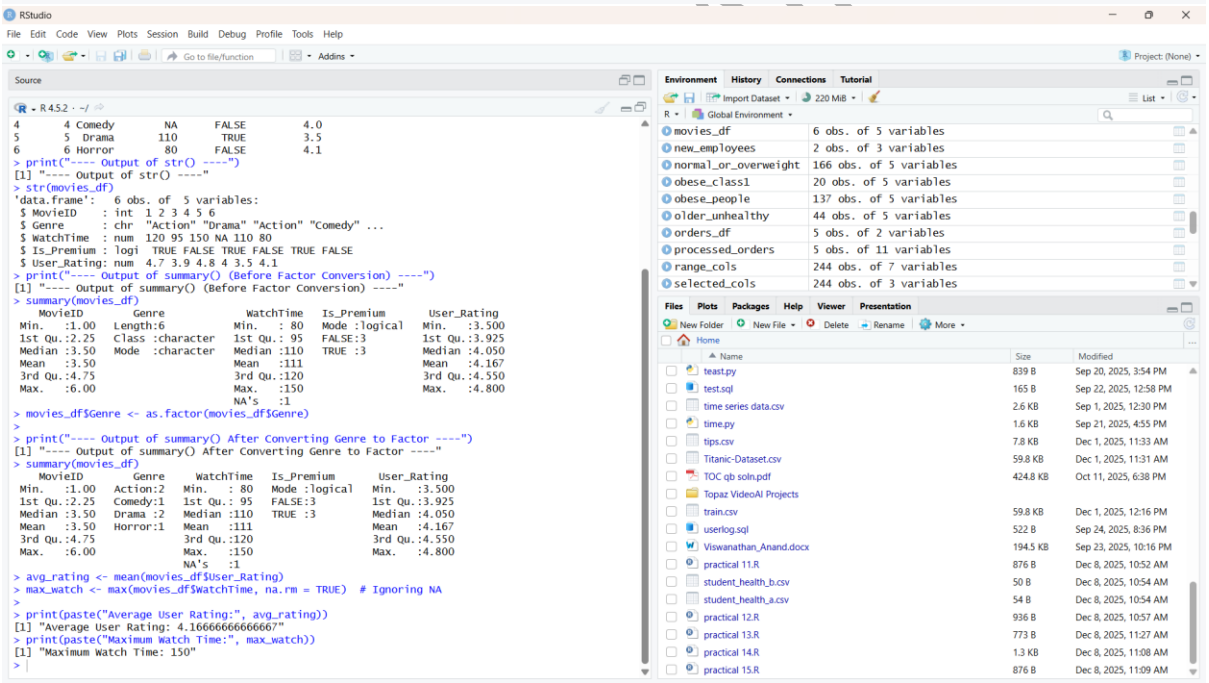
SHETH L.U.J AND SIR M.V. COLLEGE

PRACTICAL NO 15

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



```
> # Movie data with mixed data types
> movies_df <- data.frame(
+   MovieID = 1:6,
+   Genre = c("Action", "Drama", "Action", "Comedy", "Drama", "Horror"),
+   WatchTime = c(120, 95, 150, NA, 110, 80),  # NA included
+   Is_Premium = c(TRUE, FALSE, TRUE, FALSE, TRUE, FALSE),
+   User_Rating = c(4.7, 3.9, 4.8, 4.0, 3.5, 4.1)
+ )
>
> print("---- Movies Dataset Loaded ----")
[1] "---- Movies Dataset Loaded ----"
> print(movies_df)
  MovieID  Genre WatchTime Is_Premium User_Rating
1       1 Action       120       TRUE         4.7
2       2  Drama        95      FALSE         3.9
3       3 Action       150       TRUE         4.8
4       4 Comedy        NA      FALSE         4.0
5       5  Drama       110       TRUE         3.5
6       6 Horror        80      FALSE         4.1
> print("---- Output of str() ----")
[1] "---- Output of str() ----"
> str(movies_df)
'data.frame':   6 obs. of  5 variables:
 $ MovieID    : int  1 2 3 4 5 6
 $ Genre      : chr  "Action" "Drama" "Action" "Comedy" ...
 $ WatchTime  : num  120 95 150 NA 110 80
 $ Is_Premium : logi  TRUE FALSE TRUE FALSE TRUE FALSE
 $ User_Rating: num  4.7 3.9 4.8 4 3.5 4.1
> print("---- Output of summary() (Before Factor Conversion) ----")
[1] "---- Output of summary() (Before Factor Conversion) ----"
> summary(movies_df)
    MovieID        Genre             WatchTime   Is_Premium       User_Rating
 Min.   :1.00   Length:6           Min.   : 80   Mode :logical   Min.   :3.500
 1st Qu.:2.25   Class :character   1st Qu.: 95   FALSE:3         1st Qu.:3.925
 Median :3.50   Mode  :character   Median :110   TRUE :3         Median :4.050
 Mean   :3.50                      Mean   :111                   Mean   :4.167
 3rd Qu.:4.75                      3rd Qu.:120                   3rd Qu.:4.550
 Max.   :6.00                      Max.   :150                   Max.   :4.800
                                   NA's   :1
> movies_df$Genre <- as.factor(movies_df$Genre)
>
> print("---- Output of summary() After Converting Genre to Factor ----")
[1] "---- Output of summary() After Converting Genre to Factor ----"
> summary(movies_df)
    MovieID        Genre     WatchTime   Is_Premium       User_Rating
```



```
4       4 Comedy        NA      FALSE         4.0
5       5  Drama       110       TRUE         3.5
6       6 Horror        80      FALSE         4.1
> print("---- Output of str() ----")
[1] "---- Output of str() ----"
> str(movies_df)
'data.frame':   6 obs. of  5 variables:
 $ MovieID    : int  1 2 3 4 5 6
 $ Genre      : chr  "Action" "Drama" "Action" "Comedy" ...
 $ WatchTime  : num  120 95 150 NA 110 80
 $ Is_Premium : logi  TRUE FALSE TRUE FALSE TRUE FALSE
 $ User_Rating: num  4.7 3.9 4.8 4 3.5 4.1
> print("---- Output of summary() (Before Factor Conversion) ----")
[1] "---- Output of summary() (Before Factor Conversion) ----"
> summary(movies_df)
    MovieID        Genre             WatchTime   Is_Premium       User_Rating
 Min.   :1.00   Length:6           Min.   : 80   Mode :logical   Min.   :3.500
 1st Qu.:2.25   Class :character   1st Qu.: 95   FALSE:3         1st Qu.:3.925
 Median :3.50   Mode  :character   Median :110   TRUE :3         Median :4.050
 Mean   :3.50                      Mean   :111                   Mean   :4.167
 3rd Qu.:4.75                      3rd Qu.:120                   3rd Qu.:4.550
 Max.   :6.00                      Max.   :150                   Max.   :4.800
                                   NA's   :1
> movies_df$Genre <- as.factor(movies_df$Genre)
>
> print("---- Output of summary() After Converting Genre to Factor ----")
[1] "---- Output of summary() After Converting Genre to Factor ----"
> summary(movies_df)
    MovieID        Genre     WatchTime   Is_Premium       User_Rating
 Min.   :1.00   Action:2   Min.   : 80   Mode :logical   Min.   :3.500
 1st Qu.:2.25   Comedy:1   1st Qu.: 95   FALSE:3         1st Qu.:3.925
 Median :3.50   Drama :2   Median :110   TRUE :3         Median :4.050
 Mean   :3.50   Horror:1   Mean   :111                   Mean   :4.167
 3rd Qu.:4.75              3rd Qu.:120                   3rd Qu.:4.550
 Max.   :6.00              Max.   :150                   Max.   :4.800
                           NA's   :1
> avg_rating <- mean(movies_df$User_Rating)
> max_watch <- max(movies_df$WatchTime, na.rm = TRUE)  # Ignoring NA
>
> print(paste("Average User Rating:", avg_rating))
[1] "Average User Rating: 4.16666666666667"
> print(paste("Maximum Watch Time:", max_watch))
[1] "Maximum Watch Time: 150"
>
```

AQUIB HAFIZ SHAIKH

S112