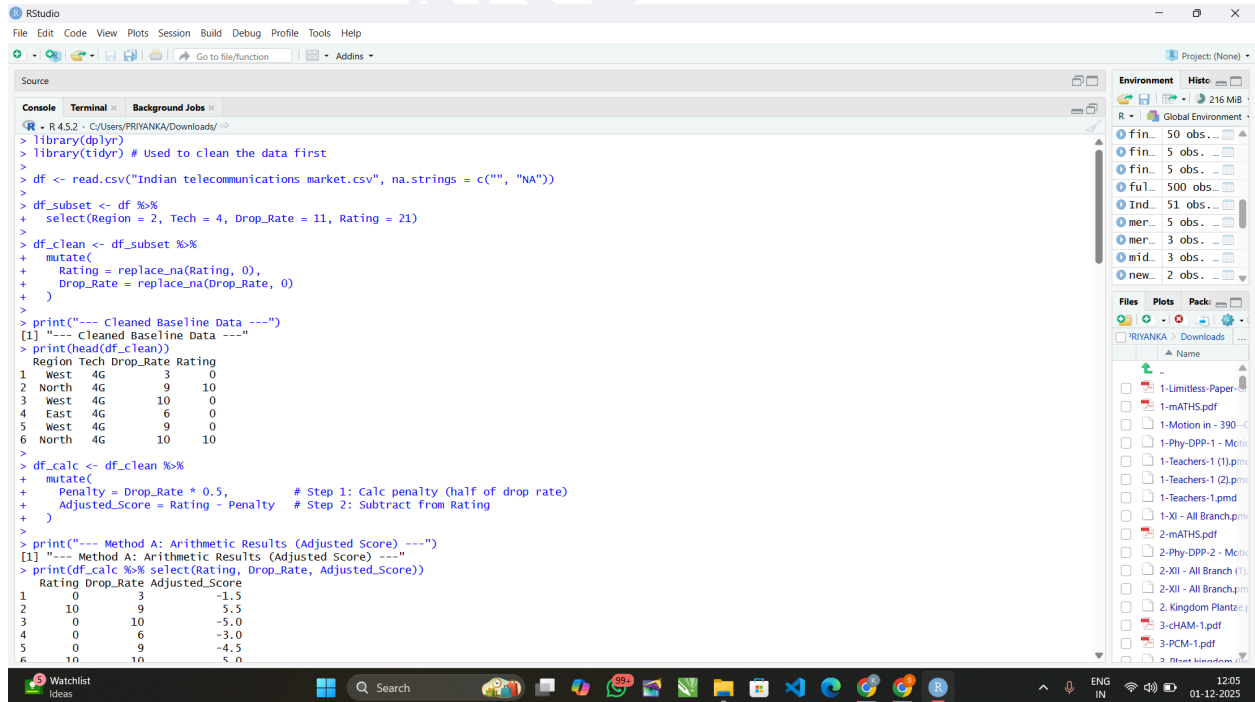


**SHETH L.U.J AND SIR M.V. COLLEGE**  
**SUBJECT NAME: DATA ANALYSIS WITH SAS/SPSS/R**

**Module 1 Practical 10**

**Aim:** Creating new variables using transformations and calculations in R. import dataset.

**OUTPUT:**



```
R - R 4.5.2 - C:/Users/PRIVANKA/Downloads/
File Edit Code View Plots Session Build Debug Profile Tools Help
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Source
Console Terminal Background Jobs
> library(dplyr)
> library(tidy) # Used to clean the data first
>
> df <- read.csv("Indian telecommunications market.csv", na.strings = c("", "NA"))
>
> df_subset <- df %>%
+   select(Region = 2, Tech = 4, Drop_Rate = 11, Rating = 21)
>
> df_clean <- df_subset %>%
+   mutate(
+     Rating = replace_na(Rating, 0),
+     Drop_Rate = replace_na(Drop_Rate, 0)
+   )
>
> print("--- Cleaned Baseline Data ---")
[1] "--- Cleaned Baseline Data ---"
> print(head(df_clean))
  Region Tech Drop_Rate Rating
1  West  4G         3      0
2 North  4G         9     10
3  West  4G        10      0
4  East  4G         6      0
5  West  4G         9      0
6 North  4G        10     10
>
> df_calc <- df_clean %>%
+   mutate(
+     Penalty = Drop_Rate * 0.5,      # Step 1: Calc penalty (half of drop rate)
+     Adjusted_Score = Rating - Penalty # Step 2: Subtract From Rating
+   )
>
> print("--- Method A: Arithmetic Results (Adjusted Score) ---")
[1] "--- Method A: Arithmetic Results (Adjusted Score) ---"
> print(df_calc %>% select(Rating, Drop_Rate, Adjusted_Score))
  Rating Drop_Rate Adjusted_Score
1      0         3        -1.5
2     10         9         5.5
3      0        10        -5.0
4      0         6        -3.0
5      0         9        -4.5
6     10        10         0.0
```

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```
RStudio
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Source
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5 0 9 -4.5
6 10 10 5.0
7 0 4 -2.0
8 0 5 -2.5
9 7 7 3.5
10 0 9 -4.5
11 8 10 3.0
12 0 9 -4.5
13 0 9 -4.5
14 0 9 -4.5
15 0 3 -1.5
16 8 2 7.0
17 9 9 4.5
18 8 8 4.0
19 0 4 -2.0
20 0 8 -4.0
21 0 9 -4.5
22 9 9 4.5
23 0 8 -4.0
24 0 8 -4.0
25 0 3 -1.5
26 0 6 -3.0
27 8 8 4.0
28 6 8 3.0
29 7 6 4.0
30 8 4 6.0
31 10 10 5.0
32 0 7 -3.5
33 0 7 -3.5
34 9 9 4.5
35 0 9 -4.5
36 0 6 -3.0
37 0 8 -4.0
38 0 1 -0.5
39 0 9 -4.5
40 7 7 3.5
41 5 5 2.5
42 0 9 -4.5
43 7 8 3.0
44 0 3 -1.5
45 0 5 -2.5
```

```
RStudio
File Edit Code View Plots Session Build Debug Profile Tools Help
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Source
Console Terminal Background Jobs
R - R 4.5.2 - C:/Users/PRIVANKA/Downloads/
44 0 3 -1.5
45 0 5 -2.5
46 0 3 -1.5
47 0 8 -4.0
48 0 8 -4.0
49 0 9 -4.5
50 9 7 5.5
>
> df_logic <- df_clean %>%
+ mutate(
+   Satisfaction_Label = ifelse(Rating > 8.0, "High", "Average/Low"),
+   # Let's add a second logic: Is the call drop rate critical?
+   Connection_Status = ifelse(Drop_Rate > 7, "Unstable", "Stable")
+ )
>
> print("---- Method B: Logic Results (Labels) ----")
[1] "---- Method B: Logic Results (Labels) ----"
> print(df_logic %>% select(Rating, Satisfaction_Label, Drop_Rate, Connection_Status))
  Rating Satisfaction_Label Drop_Rate Connection_Status
1      0      Average/Low         3      Stable
2     10           High         9      Unstable
3      0      Average/Low        10      Unstable
4      0      Average/Low         6      Stable
5      0      Average/Low         9      Unstable
6     10           High        10      Unstable
7      0      Average/Low         4      Stable
8      0      Average/Low         5      Stable
9      7      Average/Low         7      Stable
10     0      Average/Low         9      Unstable
11     8      Average/Low        10      Unstable
12     0      Average/Low         9      Unstable
13     0      Average/Low         9      Unstable
14     0      Average/Low         9      Unstable
15     0      Average/Low         3      Stable
16     8      Average/Low         2      Stable
17     9           High         9      Unstable
18     8      Average/Low         8      Unstable
19     0      Average/Low         8      Stable
20     0      Average/Low         8      Unstable
21     0      Average/Low         9      Unstable
```

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```
RStudio
File Edit Code View Plots Session Build Debug Profile Tools Help
Go to file/function Addins
Source
Console Terminal Background Jobs
R - R 4.5.2 - C:/Users/PRIVANKA/Downloads/
23 0 Average/Low 8 Unstable
24 0 Average/Low 8 Unstable
25 0 Average/Low 3 Stable
26 0 Average/Low 6 Stable
27 8 Average/Low 8 Unstable
28 6 Average/Low 6 Stable
29 7 Average/Low 6 Stable
30 8 Average/Low 4 Stable
31 10 High 10 Unstable
32 0 Average/Low 7 Stable
33 0 Average/Low 7 Stable
34 9 High 9 Unstable
35 0 Average/Low 9 Unstable
36 0 Average/Low 6 Stable
37 0 Average/Low 8 Unstable
38 0 Average/Low 1 Stable
39 0 Average/Low 9 Unstable
40 7 Average/Low 7 Stable
41 5 Average/Low 5 Stable
42 0 Average/Low 9 Unstable
43 7 Average/Low 8 Unstable
44 0 Average/Low 3 Stable
45 0 Average/Low 5 Stable
46 0 Average/Low 3 Stable
47 0 Average/Low 8 Unstable
48 0 Average/Low 8 Unstable
49 0 Average/Low 9 Unstable
50 9 High 7 Stable
>
> df_text <- df_clean %>%
+ mutate(
+ # paste connects strings with a space by default
+ User_Profile = paste(Region, "user on", Tech, "network")
+ )
> print("--- Method C: Text Transformation ---")
[1] "--- Method C: Text Transformation ---"
> print(head(df_text$User_Profile))
[1] "West user on 4G network" "North user on 4G network" "West user on 4G network" "East user on 4G network"
[5] "West user on 4G network" "North user on 4G network"
>
> Final_Dataset <- df_clean %>%
+ mutate(
+ Adjusted_Score = Rating - (Drop_Rate * 0.5),
+ Is_Top_Tier = ifelse(Adjusted_Score > 7, TRUE, FALSE),
+ Status_Report = paste0("Region: ", Region, " / Score: ", round(Adjusted_Score, 1))
+ )
> print("--- Final Combined Dataset ---")
[1] "--- Final Combined Dataset ---"
> print(head(Final_Dataset))
  Region Tech Drop_Rate Rating Adjusted_Score Is_Top_Tier Status_Report
1 West 4G 3 0 -1.5 FALSE Region: West / Score: -1.5
2 North 4G 9 10 5.5 FALSE Region: North / Score: 5.5
3 West 4G 10 0 -5.0 FALSE Region: West / Score: -5
4 East 4G 6 0 -3.0 FALSE Region: East / Score: -3
5 West 4G 9 0 -4.5 FALSE Region: West / Score: -4.5
6 North 4G 10 10 5.0 FALSE Region: North / Score: 5
```