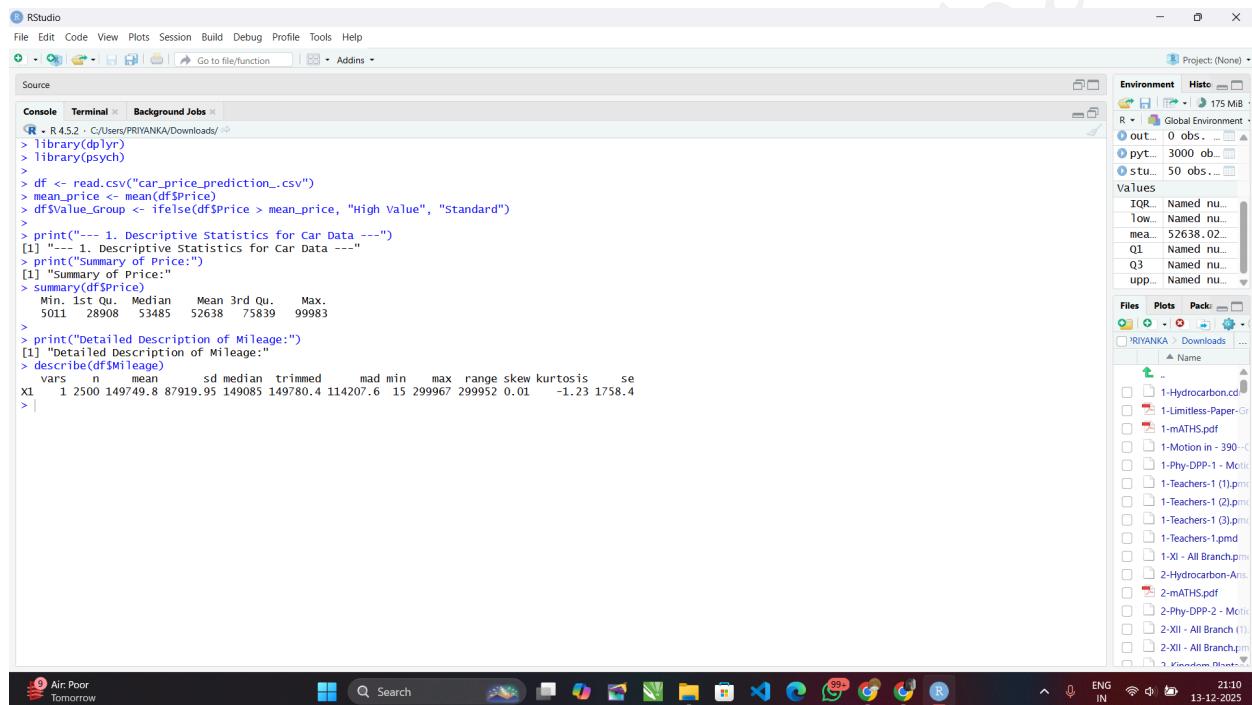


SHETH L.U.J AND SIR M.V. COLLEGE
SUBJECT NAME: DATA ANALYSIS WITH SAS/SPSS/R

Module 2 Practical 1-6

Aim: Generating descriptive statistics using summary() or describe() (R).

OUTPUT:



The screenshot shows an RStudio interface with the following details:

- Console Tab:** Displays R code and its output. The code reads a CSV file, filters it by price, and then generates descriptive statistics for the filtered data.
- Environment Tab:** Shows global variables and their values. It includes objects like `out`, `pyt`, `stu`, and statistical measures like `IQR`, `low`, `mea`, `Q1`, `Q3`, and `upp`.
- Files Tab:** Shows a project structure with files like `1-Hydrocarbon.pdf`, `1-Limitless-Paper-Gr`, `1-MATHS.pdf`, etc.
- Plots Tab:** Shows no plots.
- Packs Tab:** Shows no packages.

```
R - R 4.5.2 · C:/users/PRIYANKA/Downloads/ · 175 MB
File Edit Code View Plots Session Build Debug Profile Tools Help
Go to file/function Addins · Project: (None)
Source
Console Terminal × Background Jobs ×
[R - R 4.5.2 · C:/users/PRIYANKA/Downloads/ · 175 MB
> library(dplyr)
> library(psych)
>
> df <- read.csv("car_price_prediction_.csv")
> mean_price <- mean(df$Price)
> df$Value_Group <- ifelse(df$Price > mean_price, "High Value", "Standard")
>
> print("---- 1. Descriptive Statistics for Car Data ---")
[1] "--> 1. Descriptive Statistics for Car Data ---"
> print("Summary of Price:")
[1] "Summary of Price:"
> summary(df$Price)
      Min. 1st Qu. Median      Mean 3rd Qu.    Max.
5011    28908   53485   52638   75839   99983
> print("Detailed Description of Mileage:")
[1] "Detailed Description of Mileage:"
> describe(df$Mileage)
   vars   n   mean     sd median trimmed   mad min   max range skew kurtosis    se
X1  1 2500 149749.8 87919.95 149085 149780.4 114207.6 15 299967 299952 0.01 -1.23 1758.4
> |
```

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

Aim: Generating frequency tables using `table()` or `count()` (R).

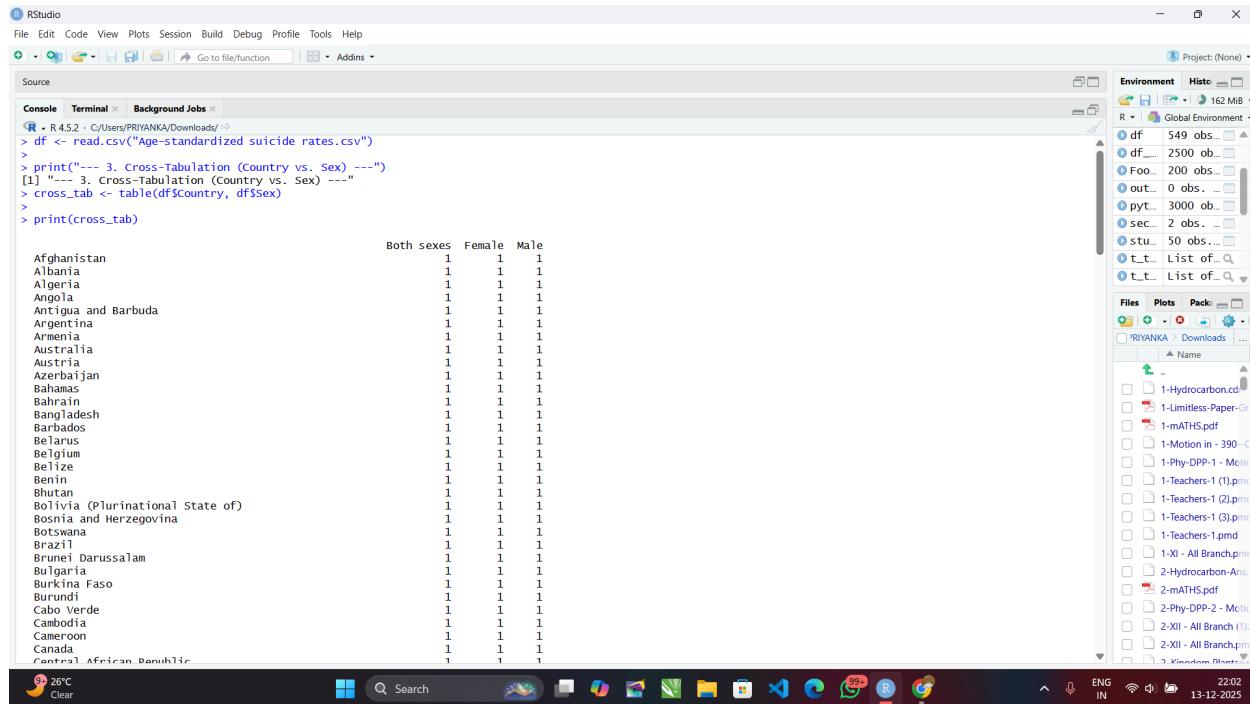
OUTPUT:

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

SUBJECT NAME: DATA ANALYSIS WITH SAS/SPSS/R

Aim: Creating cross-tabulations and two-way tables using table() (R).

OUTPUT:



The screenshot shows the RStudio interface with the following code in the Source pane:

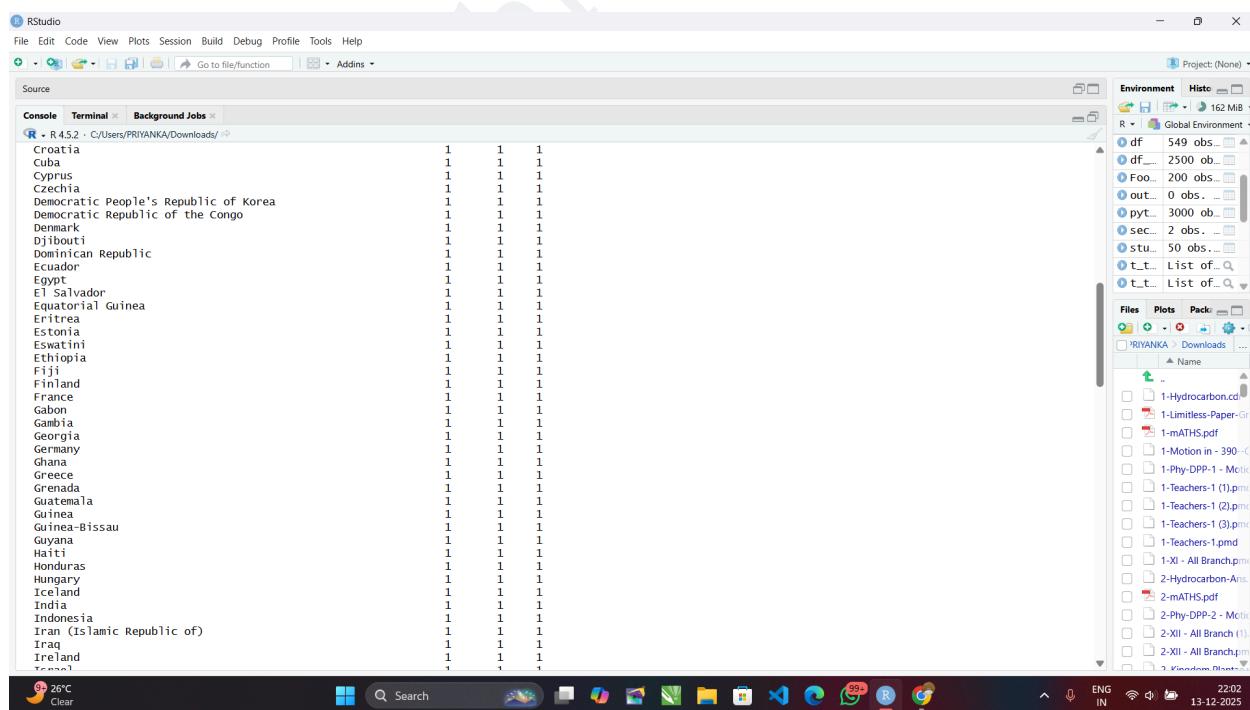
```
R - R 4.5.2 - C:/Users/PRIYANKA/Downloads/ 
> df <- read.csv("Age-standardized suicide rates.csv")
>
> print("---- 3. Cross-Tabulation (Country vs. Sex) ---")
[1] "---- 3. Cross-Tabulation (Country vs. Sex) ---"
> cross_tab <- table(df$Country, df$sex)
>
> print(cross_tab)
```

The Environment pane shows the following objects:

- df 549 obs.
- df... 2500 obs.
- Foo... 200 obs.
- out... 0 obs.
- pyt... 3000 obs.
- sec... 2 obs.
- stu... 50 obs.
- t... List of ...
- t.t... List of ...

The Data View pane displays the resulting cross-tabulation table:

	Both sexes	Female	Male
Afghanistan	1	1	1
Albania	1	1	1
Algeria	1	1	1
Angola	1	1	1
Antigua and Barbuda	1	1	1
Argentina	1	1	1
Armenia	1	1	1
Australia	1	1	1
Austria	1	1	1
Azerbaijan	1	1	1
Bahamas	1	1	1
Bahrain	1	1	1
Bangladesh	1	1	1
Barbados	1	1	1
Belarus	1	1	1
Belgium	1	1	1
Belize	1	1	1
Benin	1	1	1
Bhutan	1	1	1
Bolivia (Plurinational State of)	1	1	1
Bosnia and Herzegovina	1	1	1
Botswana	1	1	1
Brazil	1	1	1
Brunei Darussalam	1	1	1
Bulgaria	1	1	1
Burkina Faso	1	1	1
Burundi	1	1	1
Cabo Verde	1	1	1
Cambodia	1	1	1
Cameroon	1	1	1
Canada	1	1	1
Central African Republic	1	1	1



The screenshot shows the RStudio interface with the following code in the Source pane:

```
R - R 4.5.2 - C:/Users/PRIYANKA/Downloads/ 
> df <- read.csv("Age-standardized suicide rates.csv")
>
> print("---- 3. Cross-Tabulation (Country vs. Sex) ---")
[1] "---- 3. Cross-Tabulation (Country vs. Sex) ---"
> cross_tab <- table(df$Country, df$sex)
>
> print(cross_tab)
```

The Environment pane shows the following objects:

- df 549 obs.
- df... 2500 obs.
- Foo... 200 obs.
- out... 0 obs.
- pyt... 3000 obs.
- sec... 2 obs.
- stu... 50 obs.
- t... List of ...
- t.t... List of ...

The Data View pane displays the resulting cross-tabulation table:

	Both sexes	Female	Male
Croatia	1	1	1
Cuba	1	1	1
Cyprus	1	1	1
Czechia	1	1	1
Democratic People's Republic of Korea	1	1	1
Democratic Republic of the Congo	1	1	1
Denmark	1	1	1
Djibouti	1	1	1
Dominican Republic	1	1	1
Ecuador	1	1	1
Egypt	1	1	1
El Salvador	1	1	1
Equatorial Guinea	1	1	1
Eritrea	1	1	1
Estonia	1	1	1
Eswatini	1	1	1
Ethiopia	1	1	1
Fiji	1	1	1
Finland	1	1	1
France	1	1	1
Gabon	1	1	1
Gambia	1	1	1
Georgia	1	1	1
Germany	1	1	1
Ghana	1	1	1
Greece	1	1	1
Grenada	1	1	1
Guatemala	1	1	1
Guinea	1	1	1
Guinea-Bissau	1	1	1
Guyana	1	1	1
Haiti	1	1	1
Honduras	1	1	1
Hungary	1	1	1
Iceland	1	1	1
India	1	1	1
Indonesia	1	1	1
Iran (Islamic Republic of)	1	1	1
Iraq	1	1	1
Ireland	1	1	1

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

SUBJECT NAME: DATA ANALYSIS WITH SAS/SPSS/R

RStudio

File Edit Code View Plots Session Build Debug Profile Tools Help

Source

Console Terminal Background Jobs

```
R - R 4.5.2 - C:/Users/PRIYANKA/Downloads/df
Madagascar 1 1 1
Malawi 1 1 1
Malaysia 1 1 1
Maldives 1 1 1
Malta 1 1 1
Malta 1 1 1
Mauritania 1 1 1
Mauritius 1 1 1
Mexico 1 1 1
Micronesia (Federated States of) 1 1 1
Mongolia 1 1 1
Montenegro 1 1 1
Morocco 1 1 1
Mozambique 1 1 1
Myanmar 1 1 1
Namibia 1 1 1
Nepal 1 1 1
Norfolk Islands 1 1 1
New Zealand 1 1 1
Nicaragua 1 1 1
Niger 1 1 1
Nigeria 1 1 1
Norway 1 1 1
Oman 1 1 1
Pakistan 1 1 1
Panama 1 1 1
Papua New Guinea 1 1 1
Paraguay 1 1 1
Peru 1 1 1
Philippines 1 1 1
Poland 1 1 1
Portugal 1 1 1
Qatar 1 1 1
Republic of Korea 1 1 1
Republic of Moldova 1 1 1
Republic of North Macedonia 1 1 1
Romania 1 1 1
Russian Federation 1 1 1
Rwanda 1 1 1
SAINT LUCIA 1 1 1
Saint Vincent and the Grenadines 1 1 1
```

26°C Clear 22:04 ENG IN 13-12-2025

RStudio

File Edit Code View Plots Session Build Debug Profile Tools Help

Source

Console Terminal Background Jobs

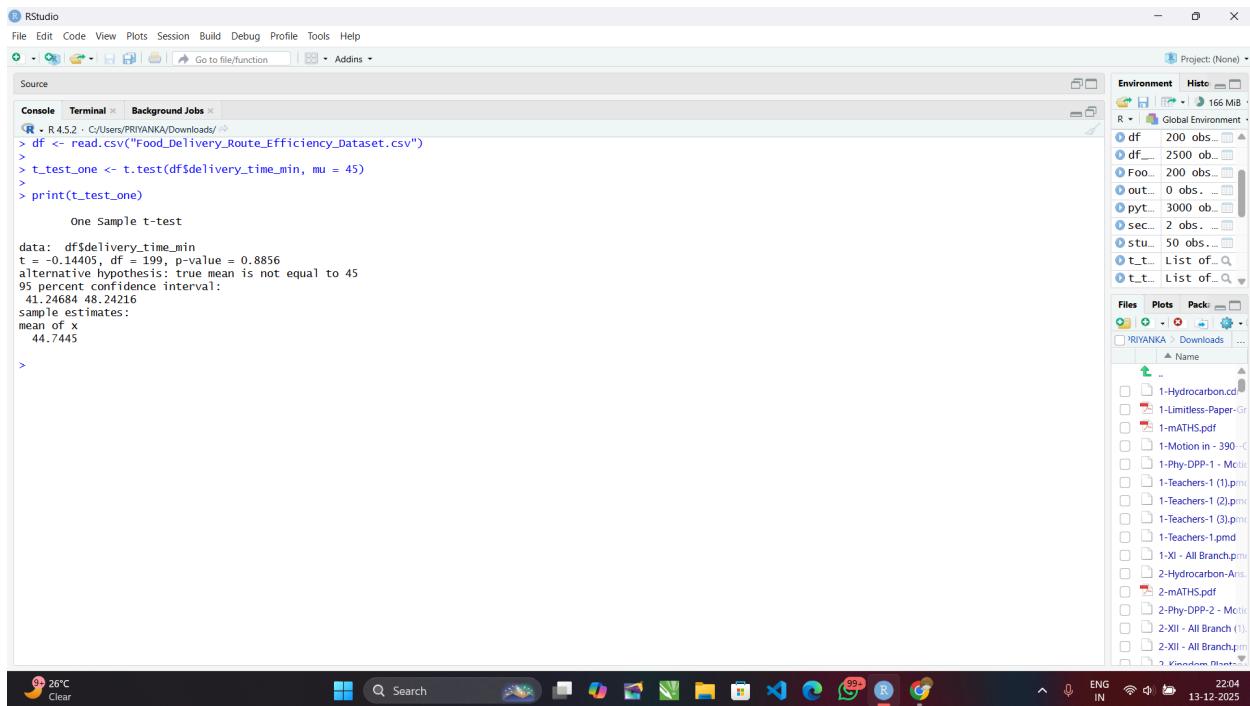
```
R - R 4.5.2 - C:/Users/PRIYANKA/Downloads/df
Seychelles 1 1 1
sierra Leone 1 1 1
singapore 1 1 1
slovakia 1 1 1
slovenia 1 1 1
Solomon Islands 1 1 1
Somalia 1 1 1
South Africa 1 1 1
South Sudan 1 1 1
Spain 1 1 1
Sri Lanka 1 1 1
sudan 1 1 1
suriname 1 1 1
sweden 1 1 1
switzerland 1 1 1
Syrian Arab Republic 1 1 1
Tajikistan 1 1 1
Thailand 1 1 1
Timor-Leste 1 1 1
Togo 1 1 1
Tonga 1 1 1
Trinidad and Tobago 1 1 1
Tunisia 1 1 1
Turkey 1 1 1
Turkmenistan 1 1 1
Uganda 1 1 1
Ukraine 1 1 1
United Arab Emirates 1 1 1
United Kingdom of Great Britain and Northern Ireland 1 1 1
United Republic of Tanzania 1 1 1
United States of America 1 1 1
Uruguay 1 1 1
Uzbekistan 1 1 1
Vanuatu 1 1 1
Venezuela (Bolivarian Republic of) 1 1 1
Viet Nam 1 1 1
Yemen 1 1 1
Zambia 1 1 1
Zimbabwe 1 1 1
```

26°C Clear 22:04 ENG IN 13-12-2025

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

Aim: Performing one-sample t-tests using `t.test()` (R).

OUTPUT:



The screenshot shows the RStudio interface with the following details:

- Console Tab:** Displays the R session code and its output.

```
R > df <- read.csv("Food_Delivery_Route_Efficiency_Dataset.csv")
R > t_test_one <- t.test(df$delivery_time_min, mu = 45)
R > print(t_test_one)

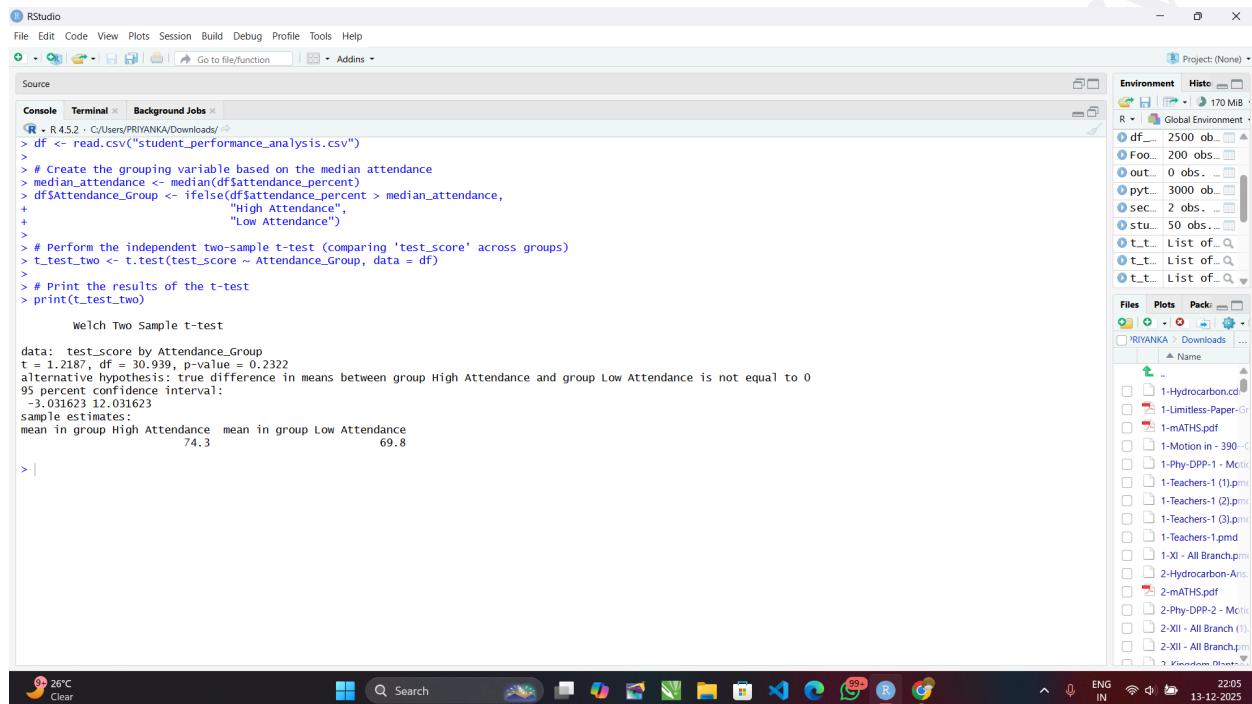
One Sample t-test

data: df$delivery_time_min
t = -0.1405, df = 199, p-value = 0.8856
alternative hypothesis: true mean is not equal to 45
95 percent confidence interval:
41.24684 48.24216
sample estimates:
mean of x
44.7445
```
- Environment Tab:** Shows the global environment with various objects listed.
- Plots Tab:** Shows a preview of a histogram.
- File Bar:** Includes File, Edit, Code, View, Plots, Session, Build, Debug, Profile, Tools, Help, and Addins.
- System Taskbar:** Shows the date (13-12-2025), time (22:04), and system status (ENG IN).

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

Aim: Performing independent two-sample t-tests using `t.test()` with grouping (R).

OUTPUT:



The screenshot shows the RStudio interface with the following details:

- Console:** Displays the R code and its output. The code reads a CSV file, creates a grouping variable based on median attendance, and performs a Welch Two Sample t-test comparing test scores between High Attendance and Low Attendance groups.
- Environment:** Shows the global environment with various objects like `df...`, `out...`, `pyt...`, etc.
- Files:** Shows a list of files in the current directory, including various PDF and PPT files related to hydrocarbons and teachers.
- Plots:** Shows a small preview of a plot.
- Terminal:** Shows the command line interface.
- Background Jobs:** Shows no active jobs.

```
R - R 4.3.2 - C:/Users/PRYANKA/Downloads/...> df <- read.csv("student_performance_analysis.csv")
>
> # Create the grouping variable based on the median attendance
> median_attendance <- median(df$attendance_percent)
> df$Attendance_Group <- ifelse(df$attendance_percent > median_attendance,
+ "High Attendance",
+ "Low Attendance")
>
> # Perform the independent two-sample t-test (comparing 'test_score' across groups)
> t_test_two <- t.test(test_score ~ Attendance_Group, data = df)
>
> # Print the results of the t-test
> print(t_test_two)

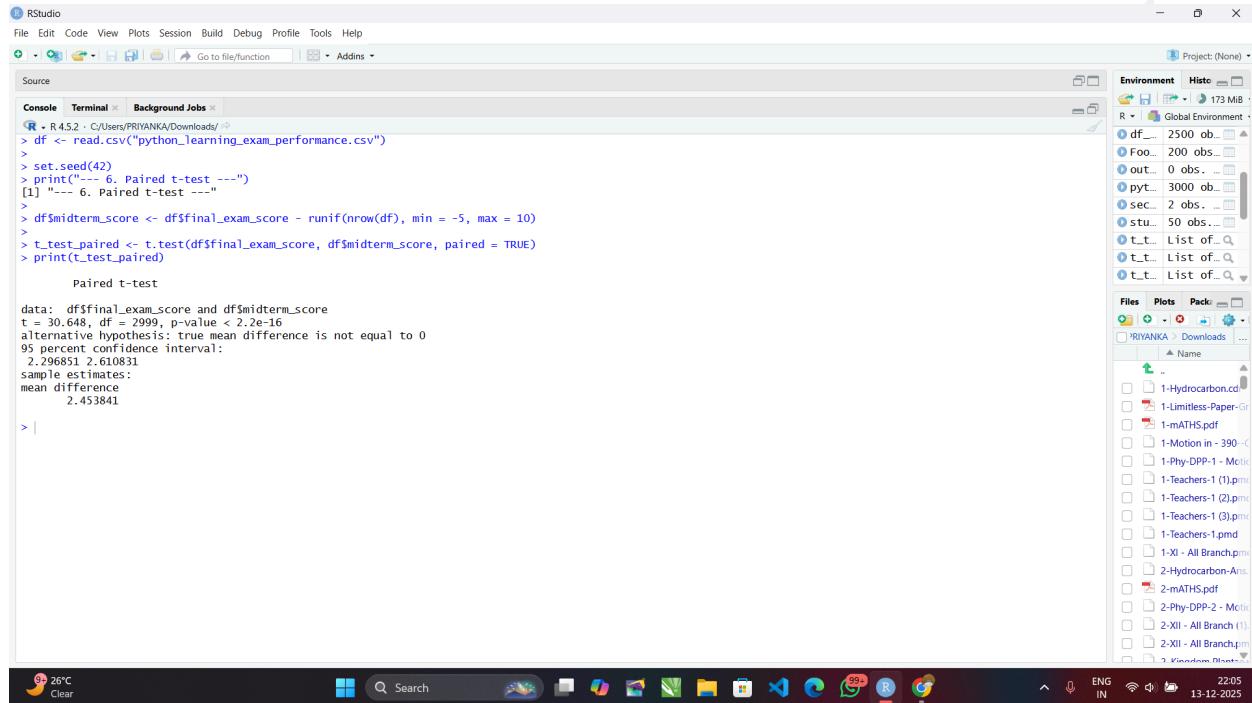
Welch Two Sample t-test

data: test_score by Attendance_Group
t = 1.2187, df = 30.939, p-value = 0.2322
alternative hypothesis: true difference in means between group High Attendance and group Low Attendance is not equal to 0
95 percent confidence interval:
-3.031623 12.031623
sample estimates:
mean in group High Attendance mean in group Low Attendance
74.3 69.8
```

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

Aim: Performing paired t-tests using `t.test(paired = TRUE)` (R).

OUTPUT:



The screenshot shows the RStudio interface with the following R code in the Console tab:

```
R - R 4.5.2 - C:/Users/PRIYANKA/Downloads/
> df <- read.csv("python_learning_exam_performance.csv")
>
> set.seed(42)
> print("--- 6. Paired t-test ---")
[1] "--- 6. Paired t-test ---"
>
> df$midterm_score <- df$final_exam_score - runif(nrow(df), min = -5, max = 10)
>
> t_test_paired <- t.test(df$final_exam_score, df$midterm_score, paired = TRUE)
> print(t_test_paired)

Paired t-test

data: df$final_exam_score and df$midterm_score
t = 30.648, df = 2999, p-value < 2.2e-16
alternative hypothesis: true mean difference is not equal to 0
95 percent confidence interval:
 2.296851 2.610831
sample estimates:
mean difference
      2.453841

> |
```

The Environment pane shows various objects created by the script, such as `df`, `out`, `pyt`, `sec`, `stu`, `t.t`, and `t_tt`. The Files pane shows a folder structure with files like `1-Hydrocarbon.pdf`, `1-MATHS.pdf`, `1-Motion in 3D.pdf`, `1-Phy-DPP-1 - Motion in 3D.pdf`, `1-Teachers-1 (1).pdf`, `1-Teachers-1 (2).pdf`, `1-Teachers-1 (3).pdf`, `1-Teachers-1.pmd`, `1-XI - All Branch.pdf`, `2-Hydrocarbon-Ans.pdf`, `2-mATHS.pdf`, `2-Phy-DPP-2 - Motion in 3D.pdf`, `2-XII - All Branch (1).pdf`, and `2-XII - All Branch (2).pdf`.