

PRACTICAL NO 1 & 2 MODULE2

OUTPUT:

RStudio interface showing the following R code in the Source pane:

```

R > R 4.5.2 - ~/ 
> # PRACTICAL 1: Descriptive Statistics
> df <- read.csv("student_marks.csv")
> 
> # Using summary()
> summary(df$marks)
   Min. 1st Qu. Median Mean 3rd Qu. Max.
65.00  72.75  78.50  78.35  84.25  91.00
> 
> # Using psych::describe()
> library(psych)
> describe(df$marks)
vars n mean sd median trimmed mad min max range skew kurtosis se
X1 1 20 78.35 7.58 78.5 78.31 8.9 65 91 26 0.01 -1.21 1.69
> 
> # PRACTICAL 2: Frequency Table
> 
> df <- read.csv("employee_department.csv")
> 
> # Using table()
> table(df$department)
  Finance    HR     IT Marketing 
      5       5      6        4 
> 
> # Using dplyr::count()
> library(dplyr)
> df %>% count(department)
#> # A tibble: 4 × 2
#>   department n
#>   <fct>     <int>
#> 1 Finance     5
#> 2 HR          5
#> 3 IT          6
#> 4 Marketing   4
> 
> # PRACTICAL 3: Cross-Tabulation
> 
> df <- read.csv("college_admission.csv")
> 
> cross_tab <- table(df$gender, df$admission_status)
> cross_tab
  No Yes
Female 3 7
Male   4 6
>

```

The Environment pane shows various objects and their details. The Files pane lists several files in the current directory, including a Word document and various CSV and Python files.

PRACTICAL NO 3 &4 MODULE 2

OUTPUT:

RStudio interface showing the following R code in the Source pane:

```

R > R 4.5.2 - ~/ 
> 
> # PRACTICAL 3: Cross-Tabulation
> df <- read.csv("college_admission.csv")
> 
> cross_tab <- table(df$gender, df$admission_status)
> cross_tab
  No Yes
Female 3 7
Male   4 6
> 
> # PRACTICAL 4: One-Sample t-test
> 
> df <- read.csv("daily_steps.csv")
> 
> # Test whether average steps differ from 8000
> t.test(df$steps, mu = 8000)
  One Sample t-test
data: df$steps
t = 2.0154, df = 19, p-value = 0.05823
alternative hypothesis: true mean is not equal to 8000
95 percent confidence interval:
7988.442 8611.558
sample estimates:
mean of x
8300
> 
> # PRACTICAL 5: Independent Two-Sample t-test
> 
> df <- read.csv("salary_gender.csv")
> 
> t.test(salary ~ gender, data = df)
  Welch Two Sample t-test
data: salary by gender
t = 0.10726, df = 13.46, p-value = 0.9162
alternative hypothesis: true difference in means between group Female and group Male is not equal to 0
95 percent confidence interval:
-2860.829 3160.829

```

The Environment pane shows various objects and their details. The Files pane lists several files in the current directory, including a Word document and various CSV and Python files.

PRACTICAL NO 5 & 6 MODULE 2

OUTPUT:



RStudio

File Edit Code View Plots Session Build Debug Profile Tools Help

Source

```

R - R452 - ~
95 percent confidence interval:
7988.442 8611.558
sample estimates:
mean of x
8300

> # PRACTICAL 5: Independent Two-Sample t-test
> df <- read.csv("salary_gender.csv")
> t.test(salary ~ gender, data = df)

Welch Two Sample t-test

data: salary by gender
t = 0.10726, df = 13.46, p-value = 0.9162
alternative hypothesis: true difference in means between group Female and group Male is not equal to 0
95 percent confidence interval:
-2860.829 3160.829
sample estimates:
mean in group Female mean in group Male
50900 50750

> # PRACTICAL 6: Paired t-test
> df <- read.csv("fitness_program.csv")
> t.test(df$weight_before, df$weight_after, paired = TRUE)

Paired t-test

data: df$weight_before and df$weight_after
t = 11.716, df = 19, p-value = 3.878e-10
alternative hypothesis: true mean difference is not equal to 0
95 percent confidence interval:
2.833675 4.066325
sample estimates:
mean difference
3.45

```

Environment History Connections Tutorial

R - Global Environment

df	20 obs. of 2 variables	
dropped_multiple	244 obs. of 5 variables	
dropped_one	244 obs. of 6 variables	
dropped_range	244 obs. of 3 variables	
duplicates_report	2 obs. of 4 variables	
emp_basic	3 obs. of 3 variables	
emp_salary	3 obs. of 3 variables	
employee_department	20 obs. of 2 variables	
enroll_df	7 obs. of 3 variables	
final_list	5 obs. of 3 variables	

Files Plots Packages Help Viewer Presentation

New File New File... Delete Rename More

Home ▾ Name Size Modified

Name	Size	Modified
S116 Abhishek Singh - Practical No. 5 -23-08-2023-[1].docx	2.6 MB	Aug 23, 2025, 2:26 PM
salary_gender.csv	254 B	Dec 15, 2025, 11:02 AM
school.sql	121 B	Sep 9, 2025, 9:09 AM
student_health_a.csv	54 B	Dec 8, 2025, 10:54 AM
student_health_b.csv	50 B	Dec 8, 2025, 10:54 AM
student_marks.csv	128 B	Dec 15, 2025, 11:01 AM
teast.py	839 B	Sep 20, 2025, 3:54 PM
test.sql	165 B	Sep 22, 2025, 12:58 PM
time series data.csv	2.6 KB	Sep 1, 2025, 12:30 PM
time.py	1.6 KB	Sep 21, 2025, 4:55 PM
tips.csv	7.8 KB	Dec 1, 2025, 11:31 AM
Titanic-Dataset.csv	59.8 KB	Dec 1, 2025, 11:31 AM
TOC qb soln.pdf	424.8 KB	Oct 11, 2025, 6:38 PM
Topaz VideoAI Projects		
train.csv	59.8 KB	Dec 1, 2025, 12:16 PM
userlog.sql	522 B	Sep 24, 2025, 8:36 PM
Viswanathan_Anand.docx	194.5 KB	Sep 23, 2025, 10:16 PM
fitness_program.csv	147 B	Dec 15, 2025, 11:16 AM