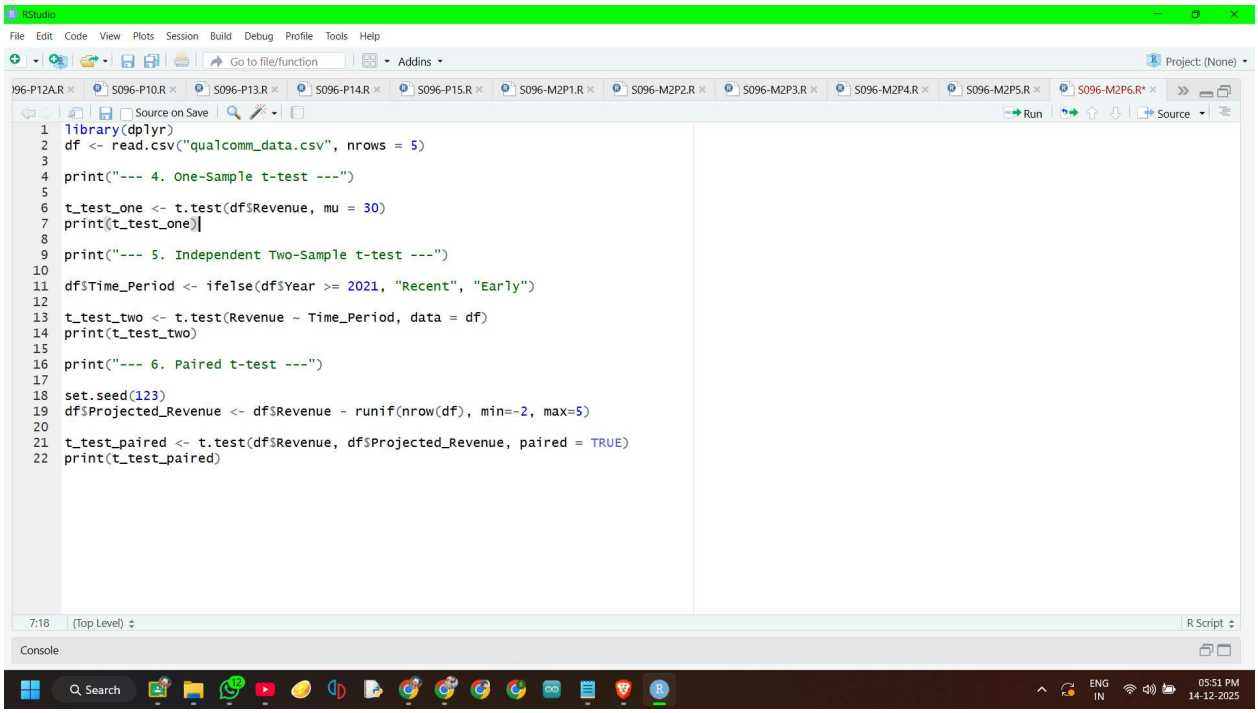
SHETH L.U.J. AND SIR M.V. COLLEGE
DATA ANALYSIS WITH R

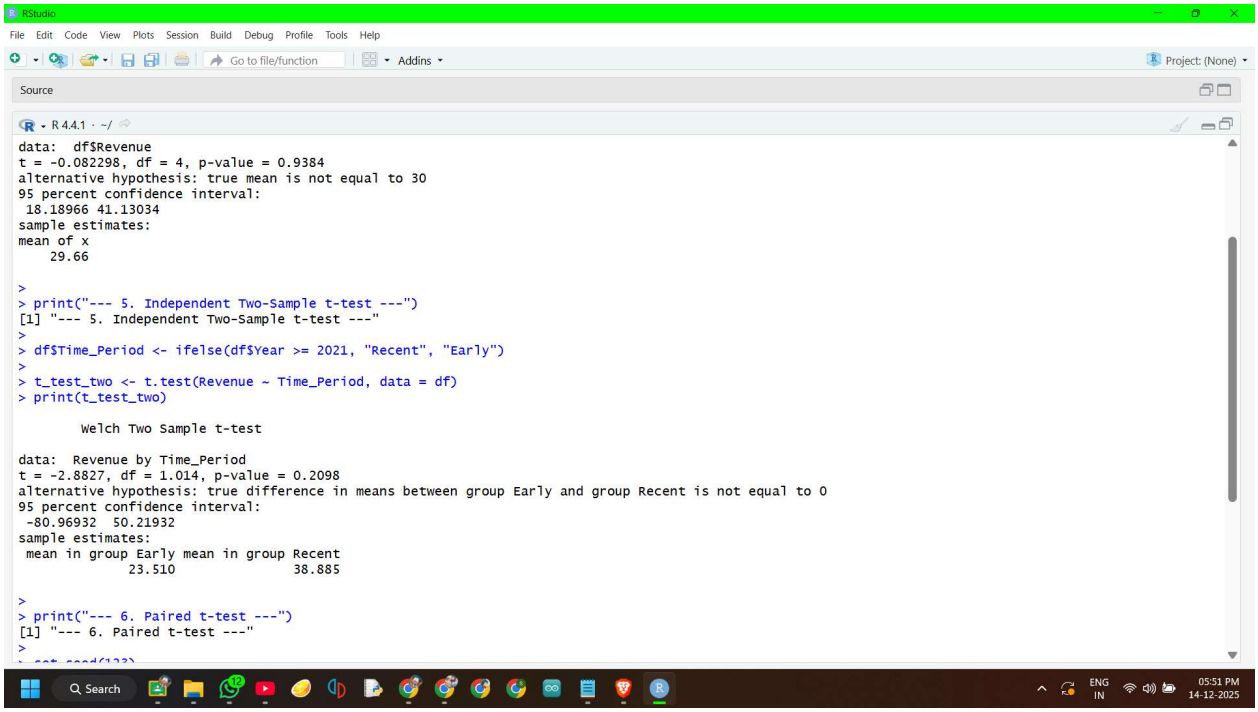
AIM: Performing paired t-tests using t.test(paired=TRUE).

CODE:



```
library(dplyr)
df <- read.csv("qualcomm_data.csv", nrows = 5)

print("--- 4. One-Sample t-test ---")

t_test_one <- t.test(df$Revenue, mu = 30)
print(t_test_one)

print("--- 5. Independent Two-Sample t-test ---")

df$Time_Period <- ifelse(df$Year >= 2021, "Recent", "Early")

t_test_two <- t.test(Revenue ~ Time_Period, data = df)
print(t_test_two)

print("--- 6. Paired t-test ---")

set.seed(123)
df$Projected_Revenue <- df$Revenue - runif(nrow(df), min=-2, max=5)

t_test_paired <- t.test(df$Revenue, df$Projected_Revenue, paired = TRUE)
print(t_test_paired)
```

OUTPUT:



```
data:  df$Revenue
t = -0.082298, df = 4, p-value = 0.9384
alternative hypothesis: true mean is not equal to 30
95 percent confidence interval:
 18.18966 41.13034
sample estimates:
mean of x
    29.66

>
> print("--- 5. Independent Two-Sample t-test ---")
[1] "--- 5. Independent Two-Sample t-test ---"
>
> df$Time_Period <- ifelse(df$Year >= 2021, "Recent", "Early")
>
> t_test_two <- t.test(Revenue ~ Time_Period, data = df)
> print(t_test_two)

        Welch Two Sample t-test

data:  Revenue by Time_Period
t = -2.8827, df = 1.014, p-value = 0.2098
alternative hypothesis: true difference in means between group Early and group Recent is not equal to 0
95 percent confidence interval:
 -80.96932  50.21932
sample estimates:
 mean in group Early mean in group Recent
              23.510               38.885

>
> print("--- 6. Paired t-test ---")
[1] "--- 6. Paired t-test ---"
>
```

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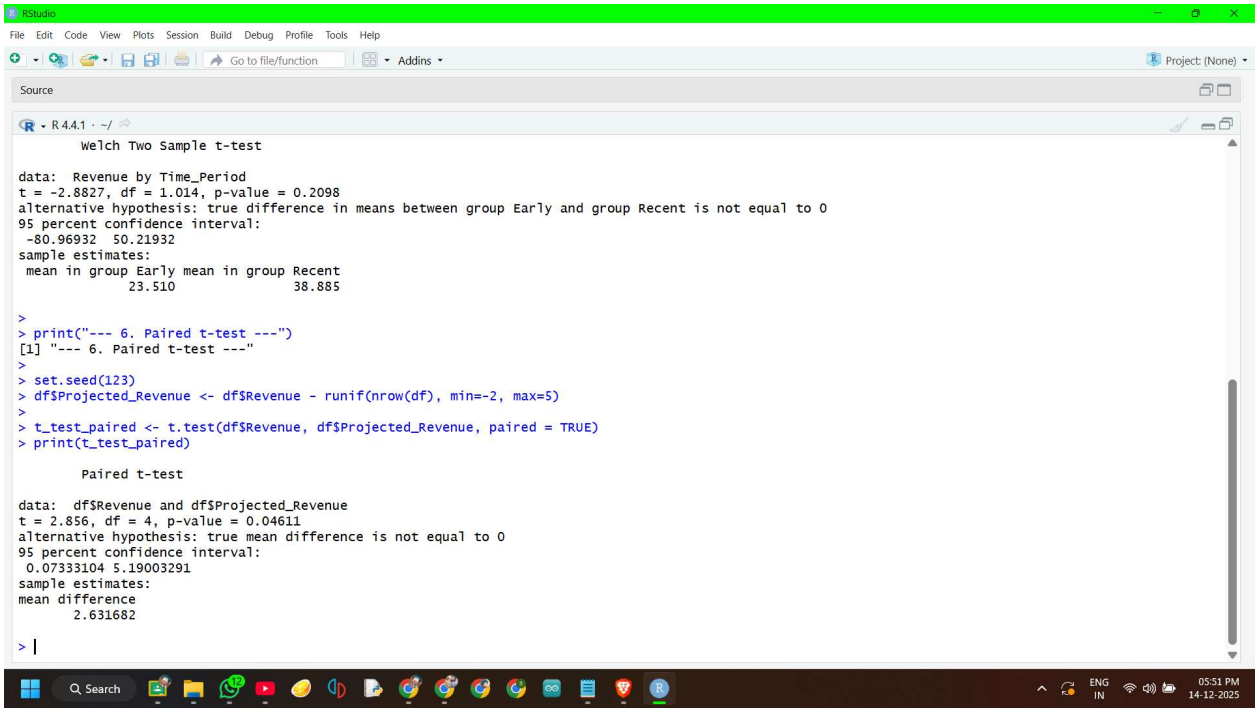
RStudio
File Edit Code View Plots Session Build Debug Profile Tools Help
Go to file/function
Addins
Project: (None)
Source
R 4.4.1 · ~/
Welch Two Sample t-test
data: Revenue by Time_Period
t = -2.8827, df = 1.014, p-value = 0.2098
alternative hypothesis: true difference in means between group Early and group Recent is not equal to 0
95 percent confidence interval:
-80.96932 50.21932
sample estimates:
mean in group Early mean in group Recent
23.510 38.885
> print("--- 6. Paired t-test ---")
[1] "--- 6. Paired t-test ---"
> set.seed(123)
> df$Projected_Revenue <- df$Revenue - runif(nrow(df), min=-2, max=5)
> t_test_paired <- t.test(df$Revenue, df$Projected_Revenue, paired = TRUE)
> print(t_test_paired)
Paired t-test
data: df$Revenue and df$Projected_Revenue
t = 2.856, df = 4, p-value = 0.04611
alternative hypothesis: true mean difference is not equal to 0
95 percent confidence interval:
0.07333104 5.19003291
sample estimates:
mean difference
2.631682
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