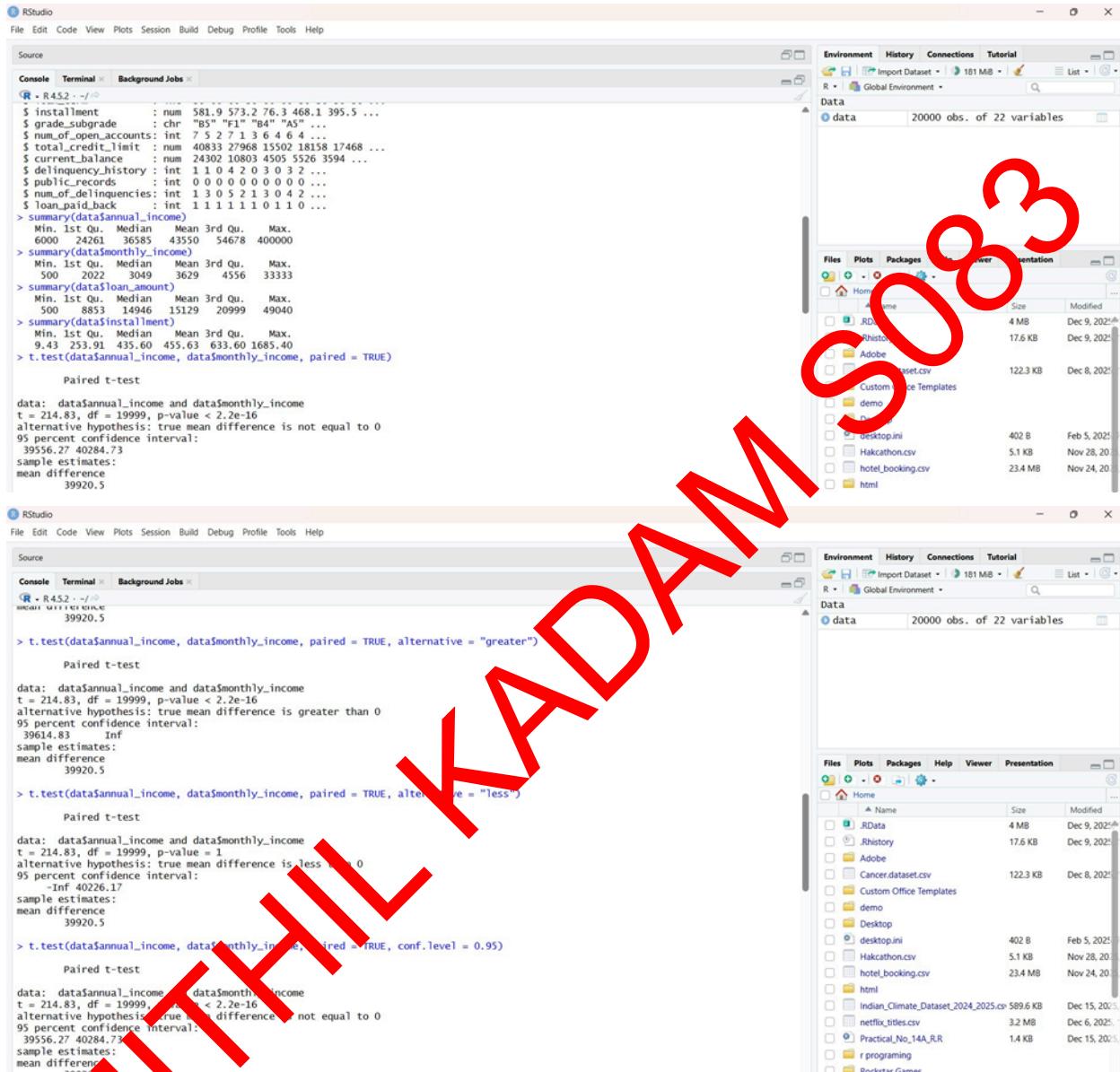


**SHETH L.U.J. & SIR M.V. COLLEGE OF SCIENCE**  
**SUBJECT - Data Analysis with R/SAS/SPSS**

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

Output :



```

RStudio
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Source
Console Terminal Background Jobs
<R - R 4.5.2 - />
$ installment : num 581.9 573.2 76.3 468.1 395.5 ...
$ grade_subgrade : chr "B5" "F1" "B4" "A5" ...
$ num_of_open_accounts: int 7 5 2 7 1 3 6 4 6 4 ...
$ total_credit_limit : num 40833 27968 15502 18158 17468 ...
$ current_balance : num 24302 10803 4505 5526 3594 ...
$ delinquency_history : int 1 1 0 4 2 0 3 0 3 2 ...
$ public_records : int 0 0 0 0 0 0 0 0 0 0 ...
$ number_of_inquiries: int 1 3 0 5 2 1 3 0 4 2 ...
$ loanpaid.back : int 1 1 1 1 1 1 0 1 1 0 ...
> summary(data$annual_income)
   Min. 1st Qu. Median Mean 3rd Qu. Max.
6000 24261 36585 43550 54678 400000
> summary(data$monthly_income)
   Min. 1st Qu. Median Mean 3rd Qu. Max.
500 2022 3049 3629 4556 33333
> summary(data$loan_amount)
   Min. 1st Qu. Median Mean 3rd Qu. Max.
500 8853 14946 15129 20999 49040
> summary(data$installment)
   Min. 1st Qu. Median Mean 3rd Qu. Max.
9.43 253.91 435.60 455.63 633.60 1685.40
> t.test(data$annual_income, data$monthly_income, paired = TRUE)

Paired t-test

data: data$annual_income and data$monthly_income
t = 214.83, df = 19999, p-value < 2.2e-16
alternative hypothesis: true mean difference is not equal to 0
95 percent confidence interval:
39556.27 40284.73
sample estimates:
mean difference
39920.5

RStudio
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Source
Console Terminal Background Jobs
<R - R 4.5.2 - />
39920.5

> t.test(data$annual_income, data$monthly_income, paired = TRUE, alternative = "greater")

Paired t-test

data: data$annual_income and data$monthly_income
t = 214.83, df = 19999, p-value < 2.2e-16
alternative hypothesis: true mean difference is greater than 0
95 percent confidence interval:
39614.83 Inf
sample estimates:
mean difference
39920.5

> t.test(data$annual_income, data$monthly_income, paired = TRUE, alternative = "less")

Paired t-test

data: data$annual_income and data$monthly_income
t = 214.83, df = 19999, p-value = 1
alternative hypothesis: true mean difference is less than 0
95 percent confidence interval:
-Inf 40226.17
sample estimates:
mean difference
39920.5

> t.test(data$annual_income, data$monthly_income, paired = TRUE, conf.level = 0.95)

Paired t-test

data: data$annual_income and data$monthly_income
t = 214.83, df = 19999, p-value < 2.2e-16
alternative hypothesis: true mean difference is not equal to 0
95 percent confidence interval:
39556.27 40284.73
sample estimates:
mean difference
39920.5

```

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SUBJECT - Data Analysis with R/SAS/SPSS**



RStudio

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Source

Console Terminal Background Jobs

R 4.5.2 - /

```
> t.test(data$loan_amount, data$installment, paired = TRUE, conf.level = 0.95)
Paired t-test

data: data$loan_amount and data$installment
t = 248.63, df = 19999, p-value < 2.2e-16
alternative hypothesis: true mean difference is not equal to 0
95 percent confidence interval:
14557.99 14789.36
sample estimates:
mean difference
14673.68

> t.test(data$annual_income, data$loan_amount, paired = TRUE)

Paired t-test

data: data$annual_income and data$loan_amount
t = 134.47, df = 19999, p-value < 2.2e-16
alternative hypothesis: true mean difference is not equal to 0
95 percent confidence interval:
28006.06 28834.61
sample estimates:
mean difference
28420.34

> t.test(data$monthly_income, data$installment, paired = TRUE)

Paired t-test

data: data$monthly_income and data$installment
t = 186.71, df = 19999, p-value < 2.2e-16
alternative hypothesis: true mean difference is not equal to 0
95 percent confidence interval:
3140.195 3206.826
sample estimates:
mean difference
3173.511
```

Environment History Connections Tutorial

Import Dataset 181 MB List

R Global Environment

Data data 20000 obs. of 22 variables

Files Plots Packages Help Viewer Presentation

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