

Practical No 4 Module II

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

Output :



```
RStudio
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Source
Console Terminal Background Jobs
R 4.5.2 - ~/~
> library(dplyr)
>
> data <- read.csv("StudentsPerformance.csv", stringsAsFactors = TRUE)
>
> head(data)
  gender race ethnicity parental.level.of.education    lunch test.preparation.course math.score reading.score writing.score
1 female   group B      bachelor's degree standard       none    72      72      74
2 female   group C        some college standard completed    69      90      88
3 female   group B      master's degree standard       none    90      95      93
4 male     group A associate's degree free/reduced    none    47      57      44
5 male     group C        some college standard       none    76      78      75
6 female   group B      associate's degree standard       none    71      83      78
>
> t.test(data$math.score, mu = 55)
One Sample t-test

data: data$math.score
t = 23.126, df = 999, p-value < 2.2e-16
alternative hypothesis: true mean is not equal to 55
95 percent confidence interval:
 65.14806 67.02994
sample estimates:
mean of x
66.089

>
> female_math <- data %>%
+   filter(gender == "female") %>%
+   pull(math.score)
>
> t.test(female_math, mu = 55)
```

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SUBJECT : R Programming

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Source
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> t.test(female_math, mu = 55)
One Sample t-test
data: female_math
t = 12.684, df = 517, p-value < 2.2e-16
alternative hypothesis: true mean is not equal to 55
95 percent confidence interval:
62.29601 64.97040
sample estimates:
mean of x
63.6332
>
> male_math <- data %>%
+ filter(gender == "male") %>%
+ pull(math.score)
>
> t.test(male_math, mu = 55)
One Sample t-test
data: male_math
t = 20.994, df = 481, p-value < 2.2e-16
alternative hypothesis: true mean is not equal to 55
95 percent confidence interval:
67.44334 70.01309
sample estimates:
mean of x
68.72822
>

RStudio
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Source
Console Terminal Background Jobs
R + R 4.5.2 · ~/
mean of x
68.72822
>
> t.test(data\$reading.score, mu = 55)
One Sample t-test
data: data\$reading.score
t = 30.689, df = 999, p-value < 2.2e-16
alternative hypothesis: true mean is not equal to 55
95 percent confidence interval:
68.26299 70.07501
sample estimates:
mean of x
69.169
>
> t.test(data\$writing.score, mu = 55)
One Sample t-test
data: data\$writing.score
t = 27.166, df = 999, p-value < 2.2e-16
alternative hypothesis: true mean is not equal to 55
95 percent confidence interval:
67.11104 68.99696
sample estimates:
mean of x
68.054
> |