

# Sri Lanka Institute of Information Technology



Lab Submission  
Lab sheet No 9

**IT24104177**

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**Probability and Statistics - IT2120**

**B.Sc. (Hons) in Information Technology**

IT24104177.R

Source on Save

Run

Source

```
1 setwd("~/Users/anudhaumavin/Desktop/labsheets/IT24104177.R")
2 getwd()
3
4
5 # Set seed for reproducibility
6 set.seed(123)
7 # Part (i) Generate random sample
8 sample_size <- 25
9 mu <- 45
10 sigma <- 2
11 baking_times <- rnorm(sample_size, mean = mu, sd = sigma)
12 print(baking_times)
13 # Part (ii) Hypothesis test
14 # H0: mean = 46
15 # H1: mean < 46
16
17 t_test_result <- t.test(baking_times, mu = 46, alternative = "less")
18 print(t_test_result)
19
```

19:1 (Top Level) R Script

Console

Terminal

Background Jobs

```
R 4.5.1 ~ /Desktop/
[1] 43.67902 44.53903 46.11742 45.14102 45.25026 46.43013 45.92183 42.40906
[9] 43.62629 44.10868 47.44816 45.71963 45.80154 45.22137 43.88832 48.57383
[17] 45.99570 41.06677 46.40271 44.05442 42.86435 44.56405 42.94799 43.54222
[25] 43.74992
> t_test_result <- t.test(baking_times, mu = 46, alternative = "less")
> print(t_test_result)

One Sample t-test

data:  baking_times
t = -2.8167, df = 24, p-value = 0.004776
alternative hypothesis: true mean is less than 46
95 percent confidence interval:
 -Inf 45.58124
sample estimates:
mean of x
44.93334
>
```

Environment

History

Connections

Tutorial

R - Global Environment

\$ null.value : Named num 46

... attr(\*, "names")= chr "mean"

\$ stderr : num 0.379

\$ alternative: chr "less"

\$ method : chr "One Sample t-test"

\$ data.name : chr "baking\_times"

- attr(\*, "class")= chr "htest"

Values

baking_times	num [1:25]	43.9 44.5 48.1 45.1 45.3 ...
mu		45
sample_size		25
sigma		2

Files

Plots

Packages

Help

Viewer

Presentation

Zoom

Export