

IT24100995

Probability and Statistics – Lab 09

```
1 setwd("C:\\Users\\GAMING\\OneDrive\\Desktop\\IT24100995")
2
3 #Exercise
4
5 ## Parameters
6 mean_time <- 45
7 sd_time <- 2
8 sample_size <- 25
9
10
11 ## i. Generate random sample
12 set.seed(123)
13 sample_data <- rnorm(sample_size, mean = mean_time, sd = sd_time)
14 print(sample_data)
15
16
17 ## ii. One-tailed t-test: H0: mean = 46, H1: mean < 46
18 t_test <- t.test(sample_data, mu = 46, alternative = "less")
19 print(t_test)
20 |
```

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> setwd("C:\\Users\\GAMING\\OneDrive\\Desktop\\IT24100995")
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> #Exercise
>
> ## Parameters
> mean_time <- 45
> sd_time <- 2
> sample_size <- 25
>
>
> ## i. Generate random sample
> set.seed(123)
> sample_data <- rnorm(sample_size, mean = mean_time, sd = sd_time)
> print(sample_data)
[1] 43.87905 44.53965 48.11742 45.14102 45.25858 48.43013 45.92183 42.46988 43.62629 44.10868 47.44816 45.71963 45.80154
[14] 45.22137 43.88832 48.57383 45.99570 41.06677 46.40271 44.05442 42.86435 44.56405 42.94799 43.54222 43.74992
>
>
> ## ii. One-tailed t-test: H0: mean = 46, H1: mean < 46
> t_test <- t.test(sample_data, mu = 46, alternative = "less")
> print(t_test)

One sample t-test

data: sample_data
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
> |
```