

ID NO: IT24101677

Lab sheet 9

```
RStudio
File Edit Code View Plots Session Build Debug Profile Tools Help
+ - [Icons] Go to file/function [Grid] Addins
IT24102298Lab08.R* IT24101677.R
[Icons] Source on Save [Icons]
1 setwd("C:\\Users\\Sadila\\Desktop\\IT24101677")
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
```

```
> getwd()
[1] "C:/Users/Sadila/Desktop/IT24101677"
> # Set seed for reproducibility
> set.seed(123)
> # Part (i) Generate random sample
> sample_size <- 25
> mu <- 45
> sigma <- 2
> baking_times <- rnorm(sample_size, mean = mu, sd = sigma)
> print(baking_times)
[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 45.22137 43.88832 48.57383 45.99570 41.06677 46.40271
[20] 44.05442 42.86435 44.56405 42.94799 43.54222 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
```