IT24103506 – Siriwardana S.A.D.V.I.

IT2120 - Probability and Statistics Lab Sheet 09

01)

i)

IT24103506.R

Source on Save

```
1  setwd("C:\\Users\\vimuk\\OneDrive\\Desktop\\IT24103506")
2  getwd()
3
4  # Question 01
5  # (i)
6  set.seed(123)
7  sample_size <- 25
8  mu <- 45
9  sigma <- 2
10
11 baking_times <- rnorm(sample_size, mean = mu, sd = sigma)
12 print(baking_times)
```

Console | Terminal | Background Jobs

R 4.5.1 · C:/Users/vimuk/OneDrive/Desktop/IT24103506/

```
> setwd("C:\\Users\\vimuk\\OneDrive\\Desktop\\IT24103506")
> getwd()
[1] "C:/Users/vimuk/OneDrive/Desktop/IT24103506"
> # Question 01
> # (i)
> set.seed(123)
> 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
 [6] 48.43013 45.92183 42.46988 43.62629 44.10868
[11] 47.44816 45.71963 45.80154 45.22137 43.88832
[16] 48.57383 45.99570 41.06677 46.40271 44.05442
[21] 42.86435 44.56405 42.94799 43.54222 43.74992
```

ii)

```
14  # (ii)
15  t_test_result <- t.test(baking_times, mu = 46, alternative = "less")
16  print(t_test_result)
17
```

```
> # (ii)
> 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
```