

Sri Lanka Institute of Information Technology



Lab Submission 09

IT24100486

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B.Sc. (Hons) in Information Technology

Exercise

Instructions: Create a folder in your desktop with your registration number (Eg: "IT....."). You need to save the R script file and take screenshots of the command prompt with answers and save it in a word document inside the folder. Save both R script file and word document with your registration number (Eg: "IT....."). After you finish the exercise, zip the folder and upload the zip file to the submission link.

1. Assume that the time taken to bake a batch of cookies is normally distributed with mean 45 minutes and standard deviation 2 minutes.
 - i. Generate a random sample of size 25 for the baking time.
 - ii. Test whether the average baking time is less than 46 minutes at a 5% level of significance.

```
setwd("D:\\SLIIT\\Y2S1\\Probability & Statistics\\Labs\\Lab 9\\IT24100486")
```

```
y<- rnorm(25,45,2)
print(y)
```

```
> setwd("D:\\SLIIT\\Y2S1\\Probability & Statistics\\Labs\\Lab 9\\IT24100486")
> y<- rnorm(25,45,2)
> print(y)
 [1] 46.82858 46.12406 43.91166
 [4] 43.81682 41.65015 43.08734
 [7] 49.16522 48.02779 42.07911
[10] 45.68163 43.69410 43.38016
[13] 45.09965 48.62979 44.40131
[16] 44.62180 47.49512 44.15599
[19] 46.05585 43.08421 46.97701
[22] 44.91015 47.54427 49.84112
[25] 44.77129
```

```
t.test(y,mu = 46,alternative = "less")
```

```
> t.test(y,mu = 46,alternative = "less")
```

One Sample t-test

```
data: y  
t = -1.3546, df = 24,  
p-value = 0.09408  
alternative hypothesis: true mean is less than 46  
95 percent confidence interval:  
-Inf 46.15744  
sample estimates:  
mean of x  
45.40137
```

```
✓ |
```