

PS Lab sheet 09  
IT24104102  
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**Exercise**

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.

```
IT24104102.R x
Source on Save
Run
Sou

1 setwd("/Users/kavinduumayanga/Desktop")
2 getwd()
3
4 #random sample of size 25 for the baking time
5 sample <- rnorm(25, mean =45, sd =2)
6
7 # Test whether the average baking time is less than 46 minutes at a 5% level of significance.
8 t.test (sample, mu=46, alternative = "less")
9
```

```
> setwd("/Users/kavinduumayanga/Desktop")
> getwd()
[1] "/Users/kavinduumayanga/Desktop"
> #random sample of size 25 for the baking time
> sample <- rnorm(25, mean =45, sd =2)
> # Test whether the average baking time is less than 46 minutes at a 5% level of significance.
> t.test (sample, mu=46, alternative = "less")
```

One Sample t-test

```
data: sample
t = -1.898, df = 24, p-value = 0.03489
alternative hypothesis: true mean is less than 46
95 percent confidence interval:
 -Inf 45.91393
sample estimates:
mean of x
45.127
```