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Experiment No. 3

```
import pandas as pd
from scipy import stats
```

```
df = pd.read_excel("/content/RelianceDataMart.xlsx")
```

```
df.describe()
```

	Rice_Bag_Weight	
count	29.000000	
mean	24.446207	
std	0.569463	
min	23.300000	
25%	24.100000	
50%	24.500000	
75%	24.900000	
max	25.600000	

```
one_sample_result = stats.ttest_1samp(df,24.235)
one_sample_result

TtestResult(statistic=array([1.99729036]), pvalue=array([0.05559509]), df=array([28]))
```

Conclusion: t(calculated) > t(critical) hence Reject the Null Hypothesis.

```
df2 = pd.read_excel("/content/Pre_Post_Score1.xlsx")
df2.describe()
```

	Pre_Score	Post_Score	
count	20.000000	20.000000	
mean	18.400000	20.450000	
std	3.152276	4.058454	
min	12.000000	15.000000	
25%	16.000000	17.750000	
50%	18.000000	19.500000	
75%	21.000000	24.000000	
max	24.000000	29.000000	

```
two_Sample_result = stats.ttest_rel(df2["Pre_Score"],df2["Post_Score"])
two_Sample_result

TtestResult(statistic=-3.231252665580312, pvalue=0.004394965993185664, df=19)
```

Conclusion: t(calculated) < t(critical) hence Reject the Null Hypothesis.

```
df3 = pd.read_excel("/content/Crocin_Data_ST1.xlsx")
df3.describe()
```

	Before_Crocin	After_Crocin	
count	29.000000	29.000000	
mean	100.134483	97.689655	
std	1 561427	1 227758	

	1.001741	1.001700
min	97.000000	94.000000
25%	99.000000	97.000000
50%	99.900000	98.000000
75%	101.000000	99.000000
max	103.000000	99.000000

```
TtestResult(statistic=7.071712959273876, pvalue=1.0800112658101922e-07, df=28)
```



Conclusion: $t(\text{calculated}) > t(\text{critical})$ hence Reject the Null Hypothesis.

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