Day 5 - Statistics - F Test_by_Virat Tiwari

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1 F Test

```
[1]: # In this question we will compare the worker 1 to worker 2
     # Evidence to say that two population variances are not equal
     # Both the performance are different

     worker1=[18,19,22,25,27,28,41,45,51,55]
     worker2=[14,15,15,17,18,22,25,25,27,34]
```

```
[6]: # Calculating F test
     # np.var ( ) function is used for calculating the variance
     # Than we divide the variance of worker 1 and worker 2
     # And finally store it in variable " f_test "

     import numpy as np
     f_test=np.var(worker1)/np.var(worker2)
```

```
[7]: f_test
```

```
[7]: 4.387122002085506
```

```
[11]: # Degree of freedom
      # In degree of freedom we will use n-1
      # So this is how we will calculate degree of freedom
      # n-1 = len ( ) - 1

      df1=len(worker1)-1
      df2=len(worker2)-1
      significance_value=0.05
```

```
[12]: # Here we don't refer f table so we use scipy library and it also gives the
      ⌐critical value

      import scipy.stats as stat
```

```
[16]: # f.ppf ( ) gives the critical value
      # We store that value in variable " critical_value "
```

```python
critical_value=stat.f.ppf(q=1-significance_value,dfn=df1,dfd=df2)
```

[17]:
```python
critical_value
```

[17]: 3.178893104458269

[18]:
```python
if f_test>critical_value:
    print("Reject the null hypothesis")
else:
    print("We fail to reject the null hypothesis")
```

Reject the null hypothesis

Thank You So Much !!

Yours Virat Tiwari :)