

hypothetical-testing

August 29, 2023

```
[6]: import numpy as np
from scipy.stats import ttest_ind
a=np.array([1.00,12.5,0.13,1.40,1.50])
b=np.array([2.10,2.500,5.60,1.40,2.08])
t_stat,p_value=ttest_ind(a,b)
print(t_stat)
print(p_value)
if(p_value<0.5):
    print('its a null hypothesis')
else:
    print('it is not a null hypothesis')
```

```
0.23495753224476668
0.8201440439637067
it is not a null hypothesis
```

```
[7]: import numpy as np
from scipy.stats import ttest_ind
a=np.array([11,12,13,14,15])
b=np.array([21,25,56,14,28])
t_stat,p_value=ttest_ind(a,b)
print(t_stat)
print(p_value)
if(p_value<0.5):
    print('its a null hypothesis')
else:
    print('it is not a null hypothesis')
```

```
-2.1860269050043177
0.06029330797723167
its a null hypothesis
```

```
[9]: from scipy.stats import f_oneway  #(first boolean expression)
a=np.array([12,13,15])
b=np.array([15,21,25])
c=np.array([54,89,86])
f_stat,p_value=f_oneway(a,b,c)
print(f_stat)
```

```

print(p_value)
if p_value<0.5:
    print('its anull hypothesis')
else:
    print('its not a null hypothesis')

```

26.56188118811884
0.0010451233783607978
its anull hypothesis

```

[11]: a=np.array([1.2,13,15])
      b=np.array([1.5,2.6,25])
      c=np.array([54,5.9,8.6])
      f_stat,p_value=f_oneway(a,b,c)
      print(f_stat)
      print(p_value)
      if p_value<0.5:
          print('its anull hypothesis')
      else:
          print('its not a null hypothesis')

```

0.5366282213011353
0.6103733168532465
its not a null hypothesis

```

[25]: from scipy.stats import chi2_contingency
      a=np.array([[14,15],[21,65]])
      b=chi2_contingency(a)
      print(b.statistic)
      p_value=b.pvalue
      print(p_value)
      if p_value<0.05:
          print('it is a null hypothesis')
      else:
          print('it is not a null hypothesis')

```

4.757735529556651
0.0291668967180607
it is a null hypothesis

[20]:

[20]: 0.008655478161175739

[]: