

Importing the libraries to use

```
In [88]: import numpy as np
import matplotlib.pyplot as plt
import pandas as pd
import seaborn as sns
```

import and read data

```
In [89]: dataSet = pd.read_csv('titanic.csv')
```

Lost vs survived by sex

```
In [90]: lostMale = dataSet[(dataSet['Survived'] == 0) & (dataSet['Sex'] == 'male')]
survi_male = dataSet[(dataSet['Survived'] == 1) & (dataSet['Sex'] == 'male')
survi_female = dataSet[(dataSet['Survived'] == 1) & (dataSet['Sex'] == 'female')
lostFemale = dataSet[(dataSet['Survived'] == 0) & (dataSet['Sex'] == 'female')]
```

males lost vs survived

```
In [91]: total_num_males = lostMale['Survived'].count() + survi_male['Survived'].count()
lostM = (lostMale['Survived'].count()/total_num_males)
surviM = (survi_male['Survived'].count()/total_num_males)
```

males lost vs survived

```
In [92]: total_num_females = lostFemale['Survived'].count() + survi_female['Survived'].count()
lostF = (lostFemale['Survived'].count()/total_num_females)
surviF = (survi_female['Survived'].count()/total_num_females)
```

interpretation of results

```
In [93]: print("{:.2%}".format((lostF))+" of all females were lost,while"+" {:.2%}".format(surviF))

25.80% of all females were lost,while 74.20% survived
```

```
In [94]: print("{:.2%}".format((lostM))+" of all males were lost,while"+" {:.2%}".fo
```

80.98% of all males were lost,while 74.20% survived

Lost vs survived by class

```
In [95]: lostClass1 = dataSet[(dataSet['Survived'] == 0) & (dataSet['Pclass'] == 1)]
surviClass1 = dataSet[(dataSet['Survived'] == 1) & (dataSet['Pclass'] == 1)]

lostClass2 = dataSet[(dataSet['Survived'] == 0) & (dataSet['Pclass'] == 2)]
surviClass2 = dataSet[(dataSet['Survived'] == 1) & (dataSet['Pclass'] == 2)]

lostClass3 = dataSet[(dataSet['Survived'] == 0) & (dataSet['Pclass'] == 3)]
surviClass3 = dataSet[(dataSet['Survived'] == 1) & (dataSet['Pclass'] == 3)]
```

lost vs survived class one

```
In [96]: total_class1 = lostClass1['Survived'].count() + surviClass1['Survived'].cou
lost_one = lostClass1['Survived'].count()/total_class1
survi_one = surviClass1['Survived'].count()/total_class1
```

lost vs survived class two

```
In [97]: total_class2 = lostClass2['Survived'].count() + surviClass2['Survived'].cou
lost_two = lostClass2['Survived'].count()/total_class2
survi_two = surviClass2['Survived'].count()/total_class2
```

lost vs survived class three

```
In [98]: total_class3 = lostClass3['Survived'].count() + surviClass3['Survived'].cou
lost_three = lostClass3['Survived'].count()/total_class3
survi_three = surviClass3['Survived'].count()/total_class3
```

Interpret results

```
In [99]: print("{:.2%}".format((lost_one))+" of all who boarded in first class were
```

37.04% of all who boarded in first class were lost,while 62.96% survived

```
In [100]: print("{:.2%}".format((lost_two))+" of all who boarded in second class were
```

52.72% of all who boarded in second class were lost,while 47.28% survived

```
In [101]: print("{:.2%}".format((lost_three))+ " of all who boarded in third class wer")  
75.56% of all who boarded in third class were lost,while 24.44% survived
```

Probability of survival based on gender and class

```
In [102]:  
population =(dataSet['Survived']== 1).sum()
```

```
In [103]: #probability of being a male and survived  
prob_male = (dataSet['Sex']== 'male').sum()/population
```

```
In [104]: #probability of being a female and survived  
prob_female = (dataSet['Sex']== 'female').sum()/population
```

```
In [105]: #probability of being in class 1 and survived  
prob_class1 = (dataSet['Pclass']== 1).sum()/population
```

```
In [106]: #probability of being in class 2 and survived  
prob_class2 = (dataSet['Pclass']== 2).sum()/population
```

```
In [107]: #probability of being in class 3 and survived  
prob_class3 = (dataSet['Pclass']== 3).sum()/population
```

probability of being a male in class and still survive

```
In [108]: print("The probability of survival for a male in class one was {}".format(  
The probability of survival for a male in class one was 1.1%
```

```
In [109]: print("The probability of survival for a male in class two was {}".format(  
The probability of survival for a male in class two was 0.9%
```

```
In [110]: print("The probability of survival for a male in class three was {}".forma  
The probability of survival for a male in class three was 2.4%
```

probability of being a female in class and still survive

```
In [111]: print("The probability of survival for a male in class one was {}".format(  
The probability of survival for a male in class one was 0.6%
```

```
In [112]: print("The probability of survival for a male in class two was {}".format(
```

```
The probability of survival for a male in class two was 0.5%
```

```
In [113]: print("The probability of survival for a male in class three was {}".forma
```

```
The probability of survival for a male in class three was 1.3%
```