

In [111]:

```

1 # seaborn contains the load_dataset method
2 # which contains no. of datasets availble online
3 # we will be using titanic dataset for this practical
4
5 import seaborn as sns
6
7 df = sns.load_dataset('titanic') # Loads the dataset in dataframe df
8 df.head() # display only first 5 rows

```

Out[111]:

	survived	pclass	sex	age	sibsp	parch	fare	embarked	class	who	adult_male
0	0	3	male	22.0	1	0	7.2500	S	Third	man	True
1	1	1	female	38.0	1	0	71.2833	C	First	woman	False
2	1	3	female	26.0	0	0	7.9250	S	Third	woman	False
3	1	1	female	35.0	1	0	53.1000	S	First	woman	False
4	0	3	male	35.0	0	0	8.0500	S	Third	man	True

In [112]:

```

1 # features selection
2 df = df[['survived', 'pclass', 'age', 'fare']] # only considering this 4 columns

```

In [113]:

```

1 # fill missing / null values by 1 for no errors in calculations
2 df.fillna(1)
3 df.head()

```

Out[113]:

	survived	pclass	age	fare
0	0	3	22.0	7.2500
1	1	1	38.0	71.2833
2	1	3	26.0	7.9250
3	1	1	35.0	53.1000
4	0	3	35.0	8.0500

In [114]:

```

1 # x is features or independent variable
2 x = df.drop(['survived'],axis=1)
3 # y is Label or dependent variable
4 y = df[['survived']]

```

In [117]:

```
1 type(x) # it returns the type of variable
```

Out[117]:

pandas.core.frame.DataFrame

In [118]:

```
1 x.describe() # it returns the description of the dataframe x
```

Out[118]:

	pclass	age	fare
count	891.000000	714.000000	891.000000
mean	2.308642	29.699118	32.204208
std	0.836071	14.526497	49.693429
min	1.000000	0.420000	0.000000
25%	2.000000	20.125000	7.910400
50%	3.000000	28.000000	14.454200
75%	3.000000	38.000000	31.000000
max	3.000000	80.000000	512.329200

In [94]:

```
1 x.shape # x.shape displays the no of rows and columns  
2 # x contains 891 rows and 3 columns
```

Out[94]:

(891, 3)

In [95]:

```
1 y.shape
```

Out[95]:

(891, 1)

In [109]:

```

1 from sklearn.preprocessing import StandardScaler # for standardization
2
3 ss = StandardScaler()
4
5 standard_x = ss.fit_transform(x)
6 standard_y = ss.fit_transform(y)
7
8 print('\nBefore Standardization x : ',x)
9 print('\nAfter Standardization x : ',standard_x)
10 print('\nBefore Standardization y : ',y)
11 print('\nAfter Standardization y : ',standard_y)

```

```

Before Standardization x :      pclass   age   fare
0          3  22.0   7.2500
1          1  38.0  71.2833
2          3  26.0   7.9250
3          1  35.0  53.1000
4          3  35.0   8.0500
..      ...   ...   ...
886       2  27.0  13.0000
887       1  19.0  30.0000
888       3   NaN  23.4500
889       1  26.0  30.0000
890       3  32.0   7.7500

```

[891 rows x 3 columns]

```

After Standardization x : [[ 0.82737724 -0.53037664 -0.50244517]
 [-1.56610693  0.57183099  0.78684529]
 [ 0.82737724 -0.25482473 -0.48885426]

```

In [119]:

```

1  from sklearn.preprocessing import MinMaxScaler # for Normalization
2
3  mms = MinMaxScaler()
4  #mms = MinMaxScaler(feature_range=(0,1))
5
6  normal_x = mms.fit_transform(x)
7  normal_y = mms.fit_transform(y)
8
9  print('\nBefore Normalization x : ',x)
10 print('\nAfter Normalization x : ',normal_x)
11 print('\nBefore Normalization y : ',y)
12 print('\nAfter Normalization y : ',normal_y)
13

```

		pclass	age	fare
0	3	22.0	7.2500	
1	1	38.0	71.2833	
2	3	26.0	7.9250	
3	1	35.0	53.1000	
4	3	35.0	8.0500	
..	
886	2	27.0	13.0000	
887	1	19.0	30.0000	
888	3	NaN	23.4500	
889	1	26.0	30.0000	
890	3	32.0	7.7500	

[891 rows x 3 columns]

After Normalization x : [[1. 0.27117366 0.01415106]
 [0. 0.4722292 0.13913574]
 [1. 0.32143755 0.01546857]