In [1]:
```
import pandas as pd
import numpy as np

dataset = pd.read_csv("Dataset/train.csv")
dataset = dataset.drop(["Name","Ticket","Cabin","PassengerId"],axis=1)

dataset.head()
```

Out[1]:

	Survived	Pclass	Sex	Age	SibSp	Parch	Fare	Embarked
0	0	3	male	22.0	1	0	7.2500	S
1	1	1	female	38.0	1	0	71.2833	C
2	1	3	female	26.0	0	0	7.9250	S
3	1	1	female	35.0	1	0	53.1000	S
4	0	3	male	35.0	0	0	8.0500	S

In [2]:
```
from sklearn import preprocessing

#from sklearn.cross_validatNtion import train_test_split
from sklearn.model_selection import train_test_split

from sklearn.metrics import accuracy_score
from sklearn.metrics import confusion_matrix

from sklearn import svm

le=preprocessing.LabelEncoder()

le.fit(dataset["Sex"])
print(le.classes_)
dataset["Sex"] = le.transform(dataset["Sex"])

le.fit(dataset["Embarked"])
print(le.classes_)
dataset["Embarked"] = le.transform(dataset["Embarked"])

dataset['Age'] = np.round(dataset['Age'])
dataset['Fare'] = np.round(dataset['Fare'])


#changes columns with float type to int
float_col = dataset.select_dtypes(include=['float64'])
for col in float_col.columns.values:
    dataset[col] = dataset[col].astype('int64')
```

```
['female' 'male']
['C' 'Q' 'S']
```

In [3]:
```
# Changing continious to categorical using quartiles
dataset['Age'] = np.where((dataset.Age <= 22),0,dataset.Age)
dataset['Age'] = np.where(((dataset.Age > 22) & (dataset.Age <= 32)),1,dataset.Age)
dataset['Age'] = np.where(((dataset.Age > 32) & (dataset.Age <= 45)),2,dataset.Age)
dataset['Age'] = np.where((dataset.Age > 45),3,dataset.Age)

#dataset['Fare'] = np.where((dataset.Fare <= 14),0,dataset.Fare)
#dataset['Fare'] = np.where((dataset.Fare > 14), 1,dataset.Fare)

dataset['Fare'] = np.where((dataset.Fare <= 8),0,dataset.Fare)
dataset['Fare'] = np.where(((dataset.Fare > 8) & (dataset.Fare <= 14)),1,dataset.Fare)
dataset['Fare'] = np.where(((dataset.Fare > 14) & (dataset.Fare <= 31)),2,dataset.Fare)
dataset['Fare'] = np.where((dataset.Fare > 31),3,dataset.Fare)

dataset.head(10)
```

Out[3]:

	Survived	Pclass	Sex	Age	SibSp	Parch	Fare	Embarked
0	0	3	1	0	1	0	0	2
1	1	1	0	2	1	0	3	0
2	1	3	0	1	0	0	0	2
3	1	1	0	2	1	0	3	2
4	0	3	1	2	0	0	0	2
5	0	3	1	2	0	0	0	1
6	0	1	1	3	0	0	3	2
7	0	3	1	0	3	1	2	2
8	1	3	0	1	0	2	1	2
9	1	2	0	0	1	0	2	0

In [4]:
```
def accuracy_fun(feature):
    print("================================================================================================")
    print(" === ",feature," ===\n")
    y=dataset[feature]
    X=dataset.drop([feature],axis=1)

    print(X.head())
    print()
    print("Total count of (",feature,") - dependent data : ", y.count())

    X_train,X_test,y_train,y_test = train_test_split(X,y,test_size=0.3,random_state=0)

    clf=svm.SVC(gamma=0.01,C=100)

    y_pred=clf.fit(X_train,y_train).predict(X_test)

    print("\n Accuracy score : ",accuracy_score(y_test,y_pred,normalize=True))
    print("\n Confusion Matrix")
    print(confusion_matrix(y_test,y_pred))
    print("\n================================================================================================
=======\n\n")



features = ['Survived','Pclass','Sex','Age','SibSp','Parch','Fare','Embarked']

for feature in features:
    accuracy_fun(feature)
```

```
================================================================================
 ===  Survived  ===

   Pclass  Sex  Age  SibSp  Parch  Fare  Embarked
0       3    1    0      1      0     0         2
1       1    0    2      1      0     3         0
2       3    0    1      0      0     0         2
3       1    0    2      1      0     3         2
4       3    1    2      0      0     0         2

Total count of ( Survived ) - dependent data :  889

 Accuracy score :  0.7790262172284644

 Confusion Matrix
[[132  25]
 [ 34  76]]

================================================================================


================================================================================
 ===  Pclass  ===

   Survived  Sex  Age  SibSp  Parch  Fare  Embarked
0         0    1    0      1      0     0         2
1         1    0    2      1      0     3         0
2         1    0    1      0      0     0         2
3         1    0    2      1      0     3         2
4         0    1    2      0      0     0         2

Total count of ( Pclass ) - dependent data :  889

 Accuracy score :  0.8164794007490637

 Confusion Matrix
[[ 61   5   4]
 [  9  31   9]
 [  4  18 126]]

================================================================================


================================================================================
 ===  Sex  ===

   Survived  Pclass  Age  SibSp  Parch  Fare  Embarked
0         0       3    0      1      0     0         2
1         1       1    2      1      0     3         0
2         1       3    1      0      0     0         2
3         1       1    2      1      0     3         2
4         0       3    2      0      0     0         2

Total count of ( Sex ) - dependent data :  889

 Accuracy score :  0.7640449438202247

 Confusion Matrix
[[ 74  24]
 [ 39 130]]

================================================================================


================================================================================
 ===  Age  ===

   Survived  Pclass  Sex  SibSp  Parch  Fare  Embarked
0         0       3    1      1      0     0         2
1         1       1    0      1      0     3         0
2         1       3    0      0      0     0         2
3         1       1    0      1      0     3         2
4         0       3    1      0      0     0         2

Total count of ( Age ) - dependent data :  889

 Accuracy score :  0.39700374531835211

 Confusion Matrix
[[27  2 38  1]
 [ 7  3 59  2]
 [20  6 74  2]
 [ 3  7 14  2]]

================================================================================


================================================================================
 ===  SibSp  ===

   Survived  Pclass  Sex  Age  Parch  Fare  Embarked
0         0       3    1    0      0     0         2
1         1       1    0    2      0     3         0
2         1       3    0    1      0     0         2
3         1       1    0    2      0     3         2
4         0       3    1    2      0     0         2

Total count of ( SibSp ) - dependent data :  889

 Accuracy score :  0.73782771535580053

 Confusion Matrix
[[165  17   0   0   0   0]
 [ 37  27   0   0   0   1]
 [  6   2   0   0   0   0]
 [  1   3   0   0   3   0]
 [  0   0   0   0   2   0]
 [  0   0   0   0   0   1]
 [  0   0   0   0   0   2]]

================================================================================


================================================================================
 ===  Parch  ===

   Survived  Pclass  Sex  Age  SibSp  Fare  Embarked
0         0       3    1    0      1     0         2
1         1       1    0    2      1     3         0
2         1       3    0    1      0     0         2
3         1       1    0    2      1     3         2
4         0       3    1    2      0     0         2

Total count of ( Parch ) - dependent data :  889

 Accuracy score :  0.77528089887640449

 Confusion Matrix
[[196   1   1   0]
 [ 33   7   0   0]
 [ 18   5   4   0]
 [  0   1   0   0]
 [  1   0   0   0]]

================================================================================


================================================================================
 ===  Fare  ===

   Survived  Pclass  Sex  Age  SibSp  Parch  Embarked
0         0       3    1    0      1      0         2
1         1       1    0    2      1      0         0
2         1       3    0    1      0      0         2
3         1       1    0    2      1      0         2
4         0       3    1    2      0      0         2

Total count of ( Fare ) - dependent data :  889

 Accuracy score :  0.78277153558052434

 Confusion Matrix
[[83  2  6  2]
 [13 23  7  0]
 [ 4  3 45 10]
 [ 3  2  6 58]]

================================================================================


================================================================================
 ===  Embarked  ===

   Survived  Pclass  Sex  Age  SibSp  Parch  Fare
0         0       3    1    0      1      0     0
1         1       1    0    2      1      0     3
2         1       3    0    1      0      0     0
3         1       1    0    2      1      0     3
4         0       3    1    2      0      0     0

Total count of ( Embarked ) - dependent data :  889

 Accuracy score :  0.75280898876404449

 Confusion Matrix
[[  0   1  48]
 [  0   5  17]
 [  0   0 196]]

================================================================================
```