**K-Nearest Neighbors**

import pandas as pd

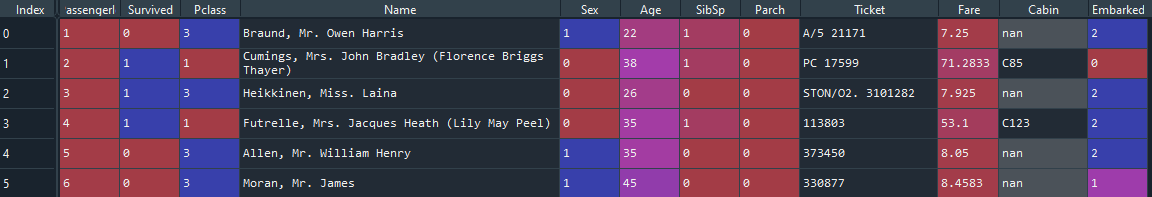
import numpy as sns

from sklearn import preprocessing

from sklearn.metrics import accuracy\_score,confusion\_matrix

from sklearn.model\_selection import train\_test\_split

dataset = pd.read\_csv("D:\\ML\\dataset\\train.csv")

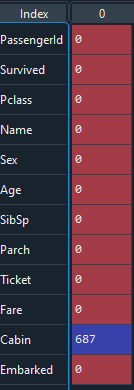


le = preprocessing.LabelEncoder()

dataset['Sex'] = le.fit\_transform(dataset['Sex'])

dataset['Embarked'] = le.fit\_transform(dataset['Embarked'])

dataset\_null = dataset.isnull().sum()



from sklearn import neighbors

y = dataset['Pclass']

X = dataset.drop(['Pclass','PassengerId','Name','Cabin','Ticket'],axis=1)

X\_train,X\_test,y\_train,y\_test = train\_test\_split(X,y,test\_size=0.3,random\_state=0)

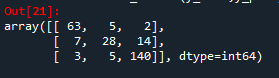
knn = neighbors.KNeighborsClassifier(n\_neighbors=3)

**##### if K=3 for n\_neighbors =3**

knn.fit(X\_train,y\_train).score(X\_test,y\_test)



confusion\_matrix(y\_test,y\_pred)



def knn(k):

knn = neighbors.KNeighborsClassifier(n\_neighbors=k)

score = knn.fit(X\_train,y\_train).score(X\_test,y\_test)

print("K = ",k,"Accuracy Score:",score)

y\_pred = knn.predict(X\_test)

confusion\_matrix(y\_test,y\_pred)

for k in range(1,len(X\_test)+1):

knn(k)

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