**Lab 6:Naive Bays**

**Create a new notebook in Google Collab and code a Supervised Model Machine Learning so that the model is trained and can predict the output on it's own next time if new data set is provided to the model.   
Given data is 14 days details of Weather, Temperature, Humidity, Wind and Play . Based on these inputs build a model which will predict for the next input data.**

#to implement naive bay's algo for training data

#predict class for x=(Overcast,Cool, High, Strong)

weather= ['Sunny','Sunny','Overcast','Rainy','Rainy','Rainy','Rainy','Overcast','Sunny','Sunny','Rainy','Sunny','Overcast','Rainy']

temp= ['Hot','Hot','Hot','Mild','Cool','Cool','Cool','Mild','Cool','Mild','Mild','Mild','Hot','Mild']

humidity= ['High','High','High','High','Normal','Normal','Normal','High','Normal','Normal','Normal','High','Normal','High']

wind= ['Weak','','Weak','Weak','Weak','Strong','Strong','Weak','Weak','Weak','Strong','Strong','Weak','']

play= ['No','No','Yes','Yes','Yes','No','Yes','No','Yes','Yes','Yes','Yes','Yes','No']

from sklearn import preprocessing

le=preprocessing.LabelEncoder()

#data into number

we=le.fit\_transform(weather)

#temp input text data into number

t=le.fit\_transform(temp)

#humidity input text data into number

h=le.fit\_transform(humidity)

#for wind

wn=le.fit\_transform(wind)

#for play

p=le.fit\_transform(play)

print (we,t,h,wn,p)

#data

features=zip(we,t,h,wn)

inp=list(features)

print("input data:")

print(inp)

print("Actual Output:")

print(p)

from sklearn.naive\_bayes import GaussianNB

model=GaussianNB()

model.fit(inp,p)

predicted=model.predict([[2,1,1,1]]) #ya chai change garnu parxa. for eg garmi hunxa ki hudaina or something like that. afno maan ley rakhe, random 1,0,2,0 whatever you like

#overcast

print("predicted value is : ",predicted)

if(predicted==1):

print("play tennis: YEs")

else:

print("play tennis: no")

Output:

