**Practical No. 8:**

**Code:**

class NaiveBayes:

def \_\_init\_\_(self, f, r):

self.features = f

self.response = r

def predict(self,custcase):

anskeys = list(self.response.keys())

ansvalues = dict.fromkeys(anskeys,0)

#print(custcase)

for key in anskeys :

ansvalues[key] = self.response[key]

for ikey, ival in custcase.items() :

ansvalues[key] = ansvalues[key] \* self.features[ikey][ival][key]

print(ansvalues)

#calculating MAP

maxkey=""

maxans=-1

for ikey, ival in ansvalues.items():

if ival > maxans :

maxans= ival

maxkey = ikey

return maxkey

#precalculated values from worksheet - "naive bayes classifier working"

response = {"Wait":0.4, "Leave":0.6}

features = {

**Roll No. 04,37**

"Reservation":

{

"Yes" : {"Wait":0.5, "Leave":0.666667},

"No" : {"Wait":0.5, "Leave":0.333333}

} ,

"Time>30":

{

"Yes" : {"Wait":0.25, "Leave":0.83333},

"No" : {"Wait":0.75, "Leave":0.16667}

}

}

nb = NaiveBayes(features, response)

#print("Probability :", nb.features["Reservation"]["Yes"]["Wait"])

#print("Probability :", nb.features["Time>30"]["No"]["Leave"])

resstatus = input("Manager asks Customer, have you reserved table?(Yes/No):")

timestatus = input("Customer asks Manager, Will it take more than 30 mins?(Yes/No):")

custcase = {"Reservation":resstatus, "Time>30":timestatus}

print("Manager predicts that Customer will :" , nb.predict(custcase) )

**Output:**

Manager asks Customer, have you reserved table?(Yes/No):Yes

Customer asks Manager, Will it take more than 30 mins?(Yes/No):Yes

{'Wait': 0.05, 'Leave': 0.33333216666599996}

Manager predicts that Customer will : Leave

**Excel Sheet:**

