**Program5: Naïve bais**

**import** pandas **as** pd  
**import** math  
  
maindf = pd.read\_csv(**'data.csv'**)  
*# print(maindf)*mainAttributes = maindf.columns[0:-1]  
last = maindf.columns[-1]  
*# print(maindf[[mainAttributes[0],last]])  
  
# find fre. of yes and no*uniqueC = maindf[last].value\_counts()  
totalYes = uniqueC.loc[**'yes'**]  
totalNo = uniqueC.loc[**'no'**]  
  
*# To find frequencies of given attribute***def** findFreq(df):  
 *# name of present attribute* name = df.columns[0]  
 attrUnique = list(df[name].unique())  
 valueDict = {}  
 **for** attr **in** attrUnique:  
 df1 = df.loc[(df[name] == attr), [name, last]]  
 tempC = df1[last].value\_counts()  
 *# print(tempC)* y = 0  
 n = 0  
 **if** len(tempC)>1:  
 y = tempC.loc[**'yes'**]  
 n = tempC.loc[**'no'**]  
 **elif** len(tempC) == 1:  
 **if 'yes' in** tempC:  
 y = tempC.loc[**'yes'**]  
 **else**:  
 n = tempC.loc[**'no'**]  
 lst = []  
 lst.append((y/totalYes).\_\_round\_\_(4))  
 lst.append((n/totalNo).\_\_round\_\_(4))  
 valueDict[attr] = lst  
 **return** valueDict  
  
freqDic = {}  
**for** attr **in** mainAttributes:  
 freqDic[attr] = findFreq(maindf[[attr,last]])  
 print(attr,freqDic[attr])  
  
*# take input*inLst = []  
freqY = 1  
freqN = 1  
total = totalYes + totalNo  
**for** attr **in** mainAttributes:  
 frqValues = freqDic[attr]  
 ipValue = input(**f"For {**attr**}:"**)  
 freqY \*= frqValues[ipValue][0]  
 freqN \*= frqValues[ipValue][1]  
freqY \*= totalYes/total  
freqN \*= totalNo/total  
  
**if** freqN > freqY:  
 print(**"Answer is No"**)  
**else**:  
 print(**"Answer is yes"**)

Dataset :

***bp***,***fever***,***diabetes***,***vomit***,***suffering  
high***,***high***,***yes***,***no***,***no  
high***,***high***,***yes***,***yes***,***no  
low***,***high***,***yes***,***no***,***yes  
normal***,***mild***,***yes***,***no***,***yes  
normal***,***no fever***,***no***,***no***,***yes  
normal***,***no fever***,***no***,***yes***,***no  
low***,***no fever***,***no***,***yes***,***yes  
high***,***mild***,***yes***,***no***,***no  
high***,***no fever***,***no***,***no***,***yes  
normal***,***mild***,***no***,***no***,***yes  
high***,***mild***,***no***,***yes***,***yes  
low***,***mild***,***yes***,***yes***,***yes  
low***,***high***,***no***,***no***,***yes  
normal***,***mild***,***yes***,***yes***,***no***

Output:

