**Experiment no. 13**

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**Title:**  WAP for Baye's classification

**code:**

#include <bits/stdc++.h>

using namespace std;

map<string,int>class\_attri\_cnt;

vector<string>attributes;

map<string,map<string,map<string,int>>>attribute\_yn\_cnt;

double calculateProbability(string Outlook,string Temp,string Humidity,string Wind,string playgame){

for(auto it: attributes){

// cout << it << " ";

}

double yes\_cnt = class\_attri\_cnt["Yes"];

double no\_cnt = class\_attri\_cnt["No"];

double total = yes\_cnt + no\_cnt;

double ans = class\_attri\_cnt[playgame]/total \* (attribute\_yn\_cnt[attributes[0]][Outlook][playgame])/(class\_attri\_cnt[playgame]) \*(attribute\_yn\_cnt[attributes[1]][Temp][playgame])/(class\_attri\_cnt[playgame])\*(attribute\_yn\_cnt[attributes[2]][Humidity][playgame])/(class\_attri\_cnt[playgame])\* (attribute\_yn\_cnt[attributes[3]][Wind][playgame])/(class\_attri\_cnt[playgame]);

return ans;

};

int main(){

ifstream input("info-gain.csv");

string line, day, outlook, temp, humidity, wind, playGame;

int j = 0;

while(getline(input,line)){

stringstream str(line);

getline(str,day,',');

getline(str,outlook,',');

getline(str,temp,',');

getline(str,humidity,',');

getline(str,wind,',');

getline(str,playGame,'.');

if(j==0){

j++;

attributes.push\_back(outlook);

attributes.push\_back(temp);

attributes.push\_back(humidity);

attributes.push\_back(wind);

continue;

}

class\_attri\_cnt[playGame]++;

attribute\_yn\_cnt[attributes[0]][outlook][playGame]++;

attribute\_yn\_cnt[attributes[1]][temp][playGame]++;

attribute\_yn\_cnt[attributes[2]][humidity][playGame]++;

attribute\_yn\_cnt[attributes[3]][wind][playGame]++;

}

double yes\_cnt = class\_attri\_cnt["Yes"];

double no\_cnt = class\_attri\_cnt["No"];

double total = yes\_cnt + no\_cnt;

cout << "Enter the unknown case" << endl;

string Outlook, Temp, Humidity, Wind;

cin >> Outlook >> Temp >> Humidity >> Wind;

double p\_yes = calculateProbability(Outlook, Temp, Humidity, Wind,"Yes");

double p\_no = calculateProbability(Outlook, Temp, Humidity, Wind,"No");

//cout << p\_yes << p\_no << endl;

if(p\_yes > p\_no ) {

cout << "The unknown case is classified as Yes" ;

}

else cout<< "The unknown case is classified as No";

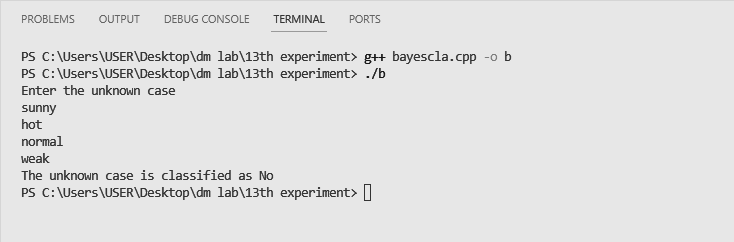
}

**Result:**

**Input.csv:**

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**Output.csv:**

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