**Problem:** Hardwood Species (Uva 10226)

**Source Code:**

#include <bits/stdc++.h>

#include <map>

#include <stdio.h>

using namespace std;

typedef long long int lli;

map <string,double> m;

int main(){

string temp;

lli test,cnt;

cin >> test;

getline(cin,temp);

getline(cin,temp);

for(lli i\_t = 0; i\_t < test; i\_t++){

if(i\_t != 0){

cout << endl;

}

cnt = 0;

m.clear();

while(1){

getline(cin,temp);

if(temp == "")

break;

m[temp]++;

cnt++;

}

for(auto it = m.begin(); it != m.end(); it++){

cout << it -> first << " ";

double dtemp;

dtemp = it->second / cnt \* 100;

printf("%.4lf\n",dtemp);

}

}

}

**Problem:** Create a object using STL map, list, vector to implement a student numbering system for lab & theory, for different batches for all departments.

**Source Code:**

#include <iostream>

#include<map>

#include<vector>

#include<list>

#include<string>

using namespace std;

int main(){

map<string,vector<int>> m1,m2,m3,m4;

m1["EEE1111"]= {11,22,33};

m2["CSE2222"]= {10,20,30};

m3["EEE3333"]= {100,200,300};

m4["CSE4444"]= {111,222,333};

list<map<string,vector<int>>> Th\_Lst,La\_Lst;

Th\_Lst.push\_back(m1);

Th\_Lst.push\_back(m3);

La\_Lst.push\_back(m2);

La\_Lst.push\_back(m4);

class student{

public:

string name;

map<string,list<map<string,vector<int>>>> second\_map1;

void show(){

for(auto it1 = second\_map1.begin(); it1 != second\_map1.end(); it1++){

cout<<it1->first<<" course"<<endl;

for(auto it2 = it1->second.begin(); it2 != it1->second.end(); it2++){

for(auto it3 = it2->begin(); it3 != it2->end(); it3++){

cout<<it3->first<<endl;

for(auto it4 = it3->second.begin(); it4 != it3->second.end(); it4++){

cout<<\*it4<<" ";

}

cout<<endl;

}

}

}

}

};

student obj1,obj2;

obj1.second\_map1["theory"] = Th\_Lst;

obj1.second\_map1["lab"] = La\_Lst;

obj2.second\_map1["theory"] = Th\_Lst;

obj2.second\_map1["lab"] = La\_Lst;

map<int,student> R\_map;

R\_map[12] = obj1;

R\_map[13] = obj2;

map<int,map<int,student>> Y\_map;

Y\_map[1] = R\_map;

Y\_map[2] = R\_map;

map<string,map<int,map<int,student>>> D\_map;

D\_map["EEE"] = Y\_map;

D\_map["CSE"] = Y\_map;

for(auto D\_it = D\_map.begin(); D\_it != D\_map.end(); D\_it++){

cout<<D\_it->first<<" dept."<<endl;

for(auto Y\_it = D\_it->second.begin(); Y\_it != D\_it->second.end(); Y\_it++){

cout<<Y\_it->first<<" year"<<endl;

for(auto R\_it = Y\_it->second.begin(); R\_it != Y\_it->second.end(); R\_it++){

cout<<R\_it->first<<" roll"<<endl;

R\_it->second.show();

}

}

}

return 0;

}