**link=**[**https://www.youtube.com/watch?v=-YdMpcEfojY&list=PLoa\_roVVsxA1CJu4DsOljb9d7FJkMCynM&index=6**](https://www.youtube.com/watch?v=-YdMpcEfojY&list=PLoa_roVVsxA1CJu4DsOljb9d7FJkMCynM&index=6)

**[L1]Class - 6 (Almost everything about STL Map with practice problems : Part-1)[Bangla]**

**Class Video link :**

<https://youtu.be/-YdMpcEfojY>

**Discussed topics :**

1) STL Map & Practice problems (Part-1)

2) Find the Frequency (Geeks for Geeks ) [Google interview question]

Link : <https://practice.geeksforgeeks.org/problems/find-the-frequency/1>

My Code : <https://paste.ubuntu.com/p/Y2pr7f7ZR8/>

3) Twice counter ( Geeks for Geeks ) [Amazon interview question]

Link : <https://practice.geeksforgeeks.org/problems/twice-counter/0>

My Code : <https://paste.ubuntu.com/p/gHcY5gkHR5/>

4) Word with maximum frequency ( Geeks for Geeks ) [Amazon interview question]

Link : <https://practice.geeksforgeeks.org/problems/word-with-maximum-frequency/0>

My Code : <https://paste.ubuntu.com/p/tpxTJxpKfF/>

5) C - Good Sequence ( Atcoder )

Link : <https://atcoder.jp/contests/arc087/tasks/arc087_a>

My Code : <https://paste.ubuntu.com/p/hzFdxPWWjq/>

**Class Tasks :**

1) Find the Frequency (Geeks for Geeks ) [Google interview question]

Link :<https://classroom.google.com/u/0/c/MTE2NTUzNTIxNDIx/a/MTQxMDY0NzQ3MDgx/details>

2) Twice counter ( Geeks for Geeks ) [Amazon interview question]

Link :<https://classroom.google.com/u/0/c/MTE2NTUzNTIxNDIx/a/MTQxMDY0NzQ3MTM3/details>

3) Word with maximum frequency ( Geeks for Geeks ) [Amazon interview question]

Link :<https://classroom.google.com/u/0/c/MTE2NTUzNTIxNDIx/a/MTQxMDY0NzQ3MTg2/details>

4) C - Good Sequence ( Atcoder )

Link : <https://classroom.google.com/u/0/c/MTE2NTUzNTIxNDIx/a/MTQxMDY0NzQ3MjEw/details>

*#include <bits/stdc++.h>*

using namespace std;

*#define endl '\n'*

*#define optimeze() ios\_base::sync\_with\_stdio(0);cin.tie(0);cout.tie(0);*

int main()

{

optimeze();

map<string ,int>m;//map<index,value>

m["hamid"]=1;

m["hosen"]=2;

m["azad"]=3;

m["fahim"]=9;

cout<<m["fahim"]<<endl<<endl;//9

map<string,string>genter;

genter["hamid"]="male";

genter["momo"]="female";

cout<<genter["hamid"]<<" "<<genter["momo"]<<endl<<endl;//male female

map<string,int>p1;

cout<<p1["hamid"]<<endl<<endl;//0

map<string,string>p2;

cout<<p2["hamid"]<<endl<<endl;//

vector<long long >v={1,2324352352,452234345,2324352352,2324352352};

map<long long ,int>p3;

//**for**(int i=0;i<v.size();i++) p3[v[i]]++;

**for**(auto u:v)p3[u]++;

cout<<p3[2324352352]<<endl<<endl;//3

vector<long long >v1={1,2324352352,452234345,2324352352,2324352352};

map<long long ,int>p4;

**for**(auto u:v1) p4[u]++;

**for**(auto u:p4) cout<<u.first<<" "<<u.second<<endl;

cout<<endl<<endl;

/\*

1 1

452234345 1

2324352352 3

\*/

map<string,int>id;

id["shahriar"]=1;//log2(n)

id["momo"]=3;

id["sharif"]=5;

id["prety"]=5;

id["prety"]=6;

id["dima"]=9;

**for**(auto u:id) cout<<u.first<<" "<<u.second<<endl;

cout<<endl<<endl;

/\*

dima 9

momo 3

prety 6

shahriar 1

sharif 5

\*/

map<int,string>name;

name[1]="Hamid";

name[2]="Hosen";//log2(size of map)

name[3]="Azad";

cout<<name[3]<<endl<<endl;//log2(3)//Azad

//unique value

map<int,bool>vis;

vector<int>v2={2,2,1,1,3};

**for**(auto u:v2) vis[u]=1;//n\*log2(n)

**for**(auto u:vis) cout<<u.first<<" "<<u.second<<endl;//male male

cout<<endl<<endl;

/\*

1 1

2 1

3 1

\*/

map<string,string> gen;

gen["Hamid"]="male";

gen["Hosen"]="male";

gen["momo"]="female";

cout<<gen["Hamid"]<<" "<<gen["Hosen"]<<endl<<endl;

map<string,int>m1;

m1.insert(make\_pair("Hamid",21));

m1.insert(pair<string,int>("Hosen",22));

cout<<m1["Hamid"]<<" "<<m1["Hosen"]<<endl<<endl;//21 22

vector<map<string,int>>v3;

map<string ,int>c;

c["Hamid"]=3;

v3.push\_back(c);

cout<<v3[0]["Hamid"]<<endl<<endl;//3

map<int,int>h;

h[1]=1;

h[2]=2;

h[3]=1;

h[3]=2;

cout<<h.size()<<endl<<endl;

**return** 0;

}

**Output:**

"C:\Users\Md.Hamid Hosen\CLionProjects\untitled\cmake-build-debug\untitled.exe"

9

male female

0

3

1 1

452234345 1

2324352352 3

dima 9

momo 3

prety 6

shahriar 1

sharif 5

Azad

1 1

2 1

3 1

male male

21 22

3

3

**problem link=**[**https://practice.geeksforgeeks.org/problems/find-the-frequency/1**](https://practice.geeksforgeeks.org/problems/find-the-frequency/1)

**code link=**[**https://paste.ubuntu.com/p/Y2pr7f7ZR8/**](https://paste.ubuntu.com/p/Y2pr7f7ZR8/)

*#include <bits/stdc++.h>*

using namespace std;

*#define endl '\n'*

*#define optimeze() ios\_base::sync\_with\_stdio(0);cin.tie(0);cout.tie(0);*

int findFrequency(vector<int> v, int x){

map<long long, int> cnt;

**for** ( auto u : v ) cnt[u]++;

**return** cnt[x];

}

int main()

{

optimeze();

int testcase;

cin >> testcase;

**while**(testcase--){

int N;

cin >> N;

// Declaring vector

vector<int> v;

// Taking vector element input

**for**(int i = 0;i<N;i++){

int k;

cin >> k;

v.push\_back(k);

}

// element whose frequency to be find

int x;

cin >> x;

cout << findFrequency(v, x) << endl;

}

**return** 0;

}

**Output:**

"C:\Users\Md.Hamid Hosen\CLionProjects\untitled\cmake-build-debug\untitled.exe"

1

5

1 1 1 3 4

1

3

*#include <bits/stdc++.h>*

using namespace std;

*#define endl '\n'*

*#define optimeze() ios\_base::sync\_with\_stdio(0);cin.tie(0);cout.tie(0);*

int findFrequency(vector<int> v, int x){

int c=0;

**for**(auto u:v){

**if**(u==x)c++;

}

**return** c;

}

int main()

{

optimeze();

int testcase;

cin >> testcase;

**while**(testcase--){

int N;

cin >> N;

// Declaring vector

vector<int> v;

// Taking vector element input

**for**(int i = 0;i<N;i++){

int k;

cin >> k;

v.push\_back(k);

}

// element whose frequency to be find

int x;

cin >> x;

cout << findFrequency(v, x) << endl;

}

**return** 0;

}

**Output:**

"C:\Users\Md.Hamid Hosen\CLionProjects\untitled\cmake-build-debug\untitled.exe"

1

5

1 1 1 3 4

1

3

**problem link=**[**https://practice.geeksforgeeks.org/problems/twice-counter4236/1**](https://practice.geeksforgeeks.org/problems/twice-counter4236/1)

[**https://paste.ubuntu.com/p/gHcY5gkHR5/**](https://paste.ubuntu.com/p/gHcY5gkHR5/)

*#include <bits/stdc++.h>*

using namespace std;

*#define endl '\n'*

*#define optimeze() ios\_base::sync\_with\_stdio(0);cin.tie(0);cout.tie(0);*

**class** **Solution**{

public:

int countWords(string list[], int n)

{

map<string ,int>m;

**for**(int i=0;i<n;i++){

m[list[i]]++;

}

int c=0;

**for**(auto u:m){

**if**(u.second==2) c++;

}

**return** c;

}

};

int main()

{

int t;

cin>>t;

**while**(t--)

{

int n;

cin>>n;

string list[n];

**for**(int i=0;i<n;i++)

cin>>list[i];

Solution ob;

cout <<ob.countWords(list, n)<<endl;

}

**return** 0;

}

**Output:**

3

ha ds ha

1

*#include<bits/stdc++.h>*

using namespace std;

int main()

{

int t;

cin >> t;

**while** ( t-- ) {

int n;

cin >> n;

map<string, int> cnt;

**for** ( int i = 0; i < n; i++ ) {

string s;

cin >> s;

cnt[s]++;

}

int ans = 0;

**for** ( auto u : cnt ) {

**if** ( u.second == 2 ) ans++;

}

cout << ans << endl;

}

}

**Output:**

3

ha ds ha

1

**prblem link=**[**https://practice.geeksforgeeks.org/problems/word-with-maximum-frequency/0**](https://practice.geeksforgeeks.org/problems/word-with-maximum-frequency/0)

**code link=**[**https://paste.ubuntu.com/p/tpxTJxpKfF/**](https://paste.ubuntu.com/p/tpxTJxpKfF/)

*#include <bits/stdc++.h>*

using namespace std;

*#define endl '\n'*

*#define optimeze() ios\_base::sync\_with\_stdio(0);cin.tie(0);cout.tie(0);*

int main()

{

optimeze();

int t;

cin>>t;

cin.ignore();

**while** (t--){

string s;

getline(cin,s);

string s1;

vector<string>v;

**for**(auto u:s){

**if**(isspace(u)){

v.push\_back(s1);

s1.clear();

}**else**{

s1+=u;

}

}

v.push\_back(s1);

map<string,int>m;

int maxf=0;

**for**(auto u:v){

m[u]++;

maxf=max(maxf,m[u]);

}

string s2;

**for**(auto u:v){

**if**(m[u]==maxf){

s2=u;

**break**;

}

}

cout<<s2<<" "<<maxf<<endl;

}

**return** 0;

}

**Output:**

"C:\Users\Md.Hamid Hosen\CLionProjects\untitled\cmake-build-debug\untitled.exe"

5

the devil **in** the sky

amazon **is** amazon geeks **for** geeks **is** geeks **for** geeks

this **is** **not** right

excels

the phenomenal one

the 2

geeks 4

this 1

excels 1

the 1

Process finished **with** exit code 0

**problem link=**[**https://atcoder.jp/contests/arc087/tasks/arc087\_a**](https://atcoder.jp/contests/arc087/tasks/arc087_a)

**code link=**[**https://paste.ubuntu.com/p/hzFdxPWWjq/**](https://paste.ubuntu.com/p/hzFdxPWWjq/)

*#include <bits/stdc++.h>*

using namespace std;

*#define endl '\n'*

*#define optimeze() ios\_base::sync\_with\_stdio(0);cin.tie(0);cout.tie(0);*

int main()

{

optimeze();

int n;

cin>>n;

map<int,int>m;

**for**(int i=0;i<n;i++){

int a;

cin>>a;

m[a]++;

}

int c=0;

**for**(auto u:m){

**if**(u.first<=u.second) c+=(u.second-u.first);

**else** c+=u.second;

}

cout<<c<<endl;

**return** 0;

}

**Output:**

"C:\Users\Md.Hamid Hosen\CLionProjects\untitled\cmake-build-debug\untitled.exe"

8

2 7 1 8 2 8 1 8

5

Process finished **with** exit code 0