[A - Distinct Numbers](https://vjudge.net/problem/Gym-102961A" \t "_blank)

#include <bits/stdc++.h>

using namespace std;

int main()

{

long int n,a; cin>>n;

set<long int> s;

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

cin>>a;

s.insert(a);

}

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

return 0;

}

[B - Pangram](https://vjudge.net/problem/CodeForces-520A)

#include <bits/stdc++.h>

using namespace std;

int main()

{

int n; cin>>n;

string str;

cin>>str;

unordered\_set<char> s;

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

str[i]=tolower(str[i]);

s.insert(str[i]);

}

if(s.size() == 26)

cout<<"YES"<<endl;

else

cout<<"NO"<<endl;

return 0;

}

[C - Maximum Word Frequency](https://vjudge.net/problem/EOlymp-6940)

#include <bits/stdc++.h>

using namespace std;

int main()

{

int n;

cin>>n;

map<string,int> mp;

string str;

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

cin>>str;

mp[str]++;

}

int max=0;

for(auto p: mp){

if(p.second >= max){

max=p.second;

str=p.first;

}

}

cout<<str<<" "<<max<<endl;

return 0;

}

[D - Find First Repeating Character](https://vjudge.net/problem/HackerRank-si-find-first-repeating-character)

 #include <bits/stdc++.h>

using namespace std;

int main()

{

int t;

cin>>t;

string str;

while(t--){

cin>>str;

unordered\_map<char,int> mp;

for(int i=0;i<str.length();i++){

mp[str[i]]++;

}

char ch='.';

for(int i=0;i<str.length();i++){

if(mp[str[i]] > 1){

ch=str[i];

break;

}

}

cout<<ch<<endl;

}

return 0;

}

[E - Anagrams easy](https://vjudge.net/problem/HackerRank-si-check-anagrams)

#include <iostream>

#include<unordered\_map>

#include<unordered\_set>

using namespace std;

int main()

{

long long t,n,a;

cin>>t;

while(t--){

cin>>n;

long long count=0;

unordered\_map<long long,long long> mp;

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

cin>>a;

count=count+mp[a-i];

mp[a-i]++;

}

cout<<count<<endl;

}

return 0;

}

[F - Chef of the Year](https://vjudge.net/problem/CodeChef-CVOTE)

#include <bits/stdc++.h>

using namespace std;

int main()

{

int c,v;

cin>>c>>v;

map<string,string> entry;

map<string,int> chef,country;

string str1,str2;

for(int i=0;i<c;i++){

cin>>str1>>str2;

entry[str1]=str2;

}

for(int i=0;i<v;i++){

cin>>str1;

chef[str1]++;

country[entry[str1]]++;

}

int max=0;

for(auto p:chef){

if(p.second > max){

max=p.second;

str1=p.first;

}

}

max=0;

for(auto p:country){

if(p.second > max){

max=p.second;

str2=p.first;

}

}

cout<<str2<<"\n"<<str1<<endl;

return 0;

}

[G - Frequency Sort](https://vjudge.net/problem/HackerRank-si-frequency-sort)

#include <bits/stdc++.h>

using namespace std;

unordered\_map<int,int> mp;

bool comp(int a,int b){

if(mp[a] != mp[b]){

return mp[a] < mp[b];

}

else

return a<b;

}

int main()

{

int t,n;

cin>>t;

while(t--){

cin>>n;

vector<int> v(n);

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

cin>>v[i];

mp[v[i]]++;

}

sort(v.begin(),v.end(),comp);

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

cout<<v[i]<<" ";

}

cout<<endl;

mp.clear();

}

return 0;

}

[H - Sorting Tool](https://vjudge.net/problem/CodeChef-KJCP01)

#include <bits/stdc++.h>

using namespace std;

unordered\_map<int,int> mp;

unordered\_map<int,int> ind;

bool comp(int a,int b){

if(mp[a] != mp[b]){

return mp[a] > mp[b];

}

else

return ind[a]<ind[b];

}

int main()

{

int n,m;

cin>>n>>m;

vector<int> v(n);

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

cin>>v[i];

mp[v[i]]++;

if(ind.find(v[i]) == ind.end())

ind[v[i]]=i;

}

sort(v.begin(),v.end(),comp);

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

cout<<v[i]<<" ";

}

return 0;

}

[I - Pair with Difference K](https://vjudge.net/problem/HackerRank-si-pair-with-difference-k)

#include <bits/stdc++.h>

using namespace std;

int main()

{

int t,n,k,a;

cin>>t;

while(t--){

cin>>n>>k;

unordered\_set<int> s;

bool flag=false;

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

cin>>a;

if(s.find(a-k) != s.end() || s.find(a+k)!=s.end()){

flag=true;

}

else

s.insert(a);

}

if(flag)

cout<<"true\n";

else

cout<<"false\n";

}

return 0;

}

[J - Same Differences](https://vjudge.net/problem/CodeForces-1520D)

#include <iostream>

#include<unordered\_map>

#include<unordered\_set>

using namespace std;

int main()

{

long long t,n,a;

cin>>t;

while(t--){

cin>>n;

long long count=0;

unordered\_map<long long,long long> mp;

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

cin>>a;

count=count+mp[a-i];

mp[a-i]++;

}

cout<<count<<endl;

}

return 0;

}

[K - Radio Station](https://vjudge.net/problem/CodeForces-918B)

#include <bits/stdc++.h>

using namespace std;

int main()

{

int n,m;

cin>>n>>m;

string str1,str2;

unordered\_map<string,string> ip\_name;

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

cin>>str1>>str2;

ip\_name[str2+";"]=str1;

}

for(int i=0;i<m;i++){

cin>>str1>>str2;

cout<<str1<<" "<<str2<<" #"<<ip\_name[str2]<<endl;

}

return 0;

}

[L - Database](https://vjudge.net/problem/SPOJ-RPLD)

#include <iostream>

#include<unordered\_map>

#include<unordered\_set>

using namespace std;

int main()

{

int t;

cin>>t;

int n,r,a,b;

for(int i=1;i<=t;i++){

cin>>n>>r;

bool flag=true;

unordered\_map<int,unordered\_set<int>> mp;

int j=1;

unordered\_set<int> s;

// bool flag=true;

while(r--){

cin>>a>>b;

if(mp[a].find(b) != mp[a].end()){

flag=false;

}

mp[a].insert(b);

}

if(flag){

cout<<"Scenario #"<<i<<": possible"<<endl;

}

else

cout<<"Scenario #"<<i<<": impossible"<<endl;

}

return 0;

}

[M - Registration System](https://vjudge.net/problem/CodeForces-4C)

#include <iostream>

#include<unordered\_map>

using namespace std;

int main()

{

int n;

string str;

cin>>n;

unordered\_map<string,int> mp;

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

cin>>str;

if(mp.find(str) == mp.end()){

cout<<"OK"<<endl;

mp[str]=0;

}

else{

mp[str]++;

cout<<str<<mp[str]<<endl;

}

}

return 0;

}

[N - Nothing in Common](https://vjudge.net/problem/CodeChef-NOTINCOM)

#include <iostream>

#include<unordered\_set>

using namespace std;

int main()

{

int t,a,b,count,num;

cin>>t;

while(t--){

cin>>a>>b;

unordered\_set<int> s;

for(int i=0;i<a;i++){

cin>>num;

s.insert(num);

}

count=0;

for(int i=0;i<b;i++){

cin>>num;

if(s.find(num) != s.end())

count++;

}

cout<<count<<endl;

}

return 0;

}

[O - Truth and Dare](https://vjudge.net/problem/CodeChef-TRUEDARE)

#include <iostream>

#include<unordered\_set>

using namespace std;

int main()

{

int t,tr,dr,ts,ds,num,flag;

cin>>t;

while(t--){

unordered\_set<int> truth,dare;

cin>>tr;

for(int i=0;i<tr;i++){

cin>>num;

truth.insert(num);

}

cin>>dr;

for(int i=0;i<dr;i++){

cin>>num;

dare.insert(num);

}

cin>>ts;

flag=1;

for(int i=0;i<ts;i++){

cin>>num;

if(truth.find(num) == truth.end())

flag=0;

}

cin>>ds;

for(int i=0;i<ds;i++){

cin>>num;

if(dare.find(num) == dare.end())

flag=0;

}

if(flag)

cout<<"yes"<<endl;

else

cout<<"no"<<endl;

}

return 0;

}

[P - Zenny and Simple Sum](https://vjudge.net/problem/CodeChef-SIPM)

#include <iostream>

#include<unordered\_map>

#include<unordered\_set>

using namespace std;

int main()

{

int t,n,num;

cin>>t;

while(t--){

cin>>n;

unordered\_map<string,int> mp;

unordered\_set<int> s;

mp["positive"]=0;

mp["negative"]=0;

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

cin>>num;

if(s.find(num) == s.end()){

if(num > 0){

mp["positive"]+=num;

}

else{

mp["negative"]+=num;

}

}

s.insert(num);

}

cout<<mp["positive"]<<" "<<mp["negative"]<<"\n";

}

return 0;

}

[Q - Paleontology Museum](https://vjudge.net/problem/CodeChef-ECMAR20F)

#include <iostream>

#include<unordered\_map>

#include<unordered\_set>

using namespace std;

int main()

{

int t,n,sp;

cin>>t;

while(t--){

cin>>n>>sp;

string str; cin>>str;

char ch;

unordered\_set<char> s;

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

s.insert(str[i]);

}

if(s.size() >= sp)

cout<<0<<endl;

else{

cout<<sp-s.size()<<endl;

}

}

return 0;

}

[R - Sales by Match](https://vjudge.net/problem/HackerRank-sock-merchant)

 #include <iostream>

#include<unordered\_map>

#include<unordered\_set>

using namespace std;

int main()

{

int n,a,sum=0;

cin>>n;

unordered\_map<int,int> mp;

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

cin>>a;

mp[a]++;

}

for(auto p: mp){

sum=sum+(p.second/2);

}

cout<<sum<<endl;

return 0;

}

[S - Missing Numbers](https://vjudge.net/problem/HackerRank-missing-numbers)

#include <iostream>

#include<map>

using namespace std;

int main()

{

int n1,n2,a;

cin>>n1;

map<int,int> mp;

for(int i=0;i<n1;i++){

cin>>a;

mp[a]++;

}

cin>>n2;

for(int i=0;i<n2;i++){

cin>>a;

mp[a]--;

}

for(auto p: mp){

if(p.second < 0)

cout<<p.first<<" ";

}

cout<<endl;

return 0;

}

Priority queues:

[A - Implement MinHeap](https://vjudge.net/problem/HackerRank-si-implement-min-heap)

 #include <bits/stdc++.h>

using namespace std;

int main()

{

int t,n;

cin>>t;

string str;

priority\_queue<int,vector<int>,greater<int>> pq;

while(t--){

cin>>str;

if(str == "insert"){

cin>>n;

pq.push(n);

}

else if(str == "getMin"){

if(!pq.empty())

cout<<pq.top()<<endl;

else

cout<<"Empty\n";

}

else{

if(!pq.empty())

pq.pop();

}

}

return 0;

}

[B - Min Cost to Connect Rods](https://vjudge.net/problem/HackerRank-si-min-cost-to-connect-rods)

#include <bits/stdc++.h>

using namespace std;

int main()

{

int t,n,x,a,b,sum;

cin>>t;

while(t--){

cin>>n;

priority\_queue<int,vector<int>,greater<int>> pq;

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

cin>>x;

pq.push(x);

}

sum=0;

while(pq.size() > 1){

a=pq.top();

pq.pop();

b=pq.top();

pq.pop();

sum=sum+(a+b);

pq.push(a+b);

}

cout<<sum<<endl;

}

return 0;

}

[C - Jesse and Cookies](https://vjudge.net/problem/HackerRank-jesse-and-cookies)

#include <bits/stdc++.h>

using namespace std;

int main()

{

int n,k,x,a,b;

cin>>n>>k;

priority\_queue<int,vector<int>,greater<int>> pq;

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

cin>>x;

pq.push(x);

}

int i=0,sum;

while(pq.top() < k && pq.size()>1){

a=pq.top();

pq.pop();

b=pq.top();

pq.pop();

sum=a+(b\*2);

pq.push(sum);

i++;

}

if(pq.top() < k)

cout<<-1;

else

cout<<i<<endl;

return 0;

}

[D - Find the Running Median](https://vjudge.net/problem/HackerRank-find-the-running-median)

 #include <bits/stdc++.h>

using namespace std;

int main()

{

int n;

int a;

cin>>n;

priority\_queue<int,vector<int>,greater<int>> min\_pq;

priority\_queue<int> max\_pq;

for(int i=1;i<=n;i++){

cin>>a;

if(max\_pq.empty() || a <= max\_pq.top())

max\_pq.push(a);

else

min\_pq.push(a);

if(max\_pq.size() > min\_pq.size()+1){

min\_pq.push(max\_pq.top());

max\_pq.pop();

}

else if(min\_pq.size() > max\_pq.size()){

max\_pq.push(min\_pq.top());

min\_pq.pop();

}

if(i%2 == 1){

float res=float(max\_pq.top());

cout<<setprecision(1)<<fixed<<res<<endl;

}

else{

float res=float((max\_pq.top()+min\_pq.top()))/2;

cout<<setprecision(1)<<fixed<<res<<endl;

}

}

cout<<endl;

return 0;

}

[E - Anytime Median](https://vjudge.net/problem/HackerRank-si-anytime-median)

 #include <bits/stdc++.h>

using namespace std;

int main()

{

int t,n,a;

cin>>t;

while(t--){

cin>>n;

priority\_queue<int,vector<int>,greater<int>> min\_pq;

priority\_queue<int> max\_pq;

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

cin>>a;

if(max\_pq.empty() || a <= max\_pq.top())

max\_pq.push(a);

else

min\_pq.push(a);

if(max\_pq.size() > min\_pq.size()+1){

min\_pq.push(max\_pq.top());

max\_pq.pop();

}

else if(min\_pq.size() > max\_pq.size()){

max\_pq.push(min\_pq.top());

min\_pq.pop();

}

cout<<max\_pq.top()<<" ";

}

cout<<endl;

}

return 0;

}

[F - Max Pair Sums of 2 arrays](https://vjudge.net/problem/HackerRank-si-max-pair-sums-of-2-arrays)

#include <bits/stdc++.h>

using namespace std;

int main()

{

int t,n,k,sum;

cin>>t;

while(t--){

cin>>n>>k;

vector<int> a(n),b(n),res;

priority\_queue<int,vector<int>,greater<int>> min\_pq;

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

cin>>a[i];

}

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

cin>>b[i];

}

sort(a.begin(),a.end(),greater<int>());

sort(b.begin(),b.end(),greater<int>());

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

for(int j=0;j<n;j++){

if(min\_pq.size() < k){

min\_pq.push(a[i] + b[j]);

}

else if(a[i] + b[j] > min\_pq.top()){

min\_pq.pop();

min\_pq.push(a[i] + b[j]);

}

else

break;

}

}

while(!min\_pq.empty()){

res.push\_back(min\_pq.top());

min\_pq.pop();

}

for(int i=k-1;i>=0;i--){

cout<<res[i]<<" ";

}

cout<<endl;

}

return 0;

}

[G - Chef Teams](https://vjudge.net/problem/CodeChef-CTEAMS)

#include <bits/stdc++.h>

using namespace std;

int main()

{

int n,a,b,young\_r=0,old\_r=0;

cin>>n;

priority\_queue<pair<int,int>,vector<pair<int,int>>,greater<pair<int,int>>> old;

priority\_queue<pair<int,int>> young;

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

cin>>a>>b;

if(young.empty() || a <= young.top().first){

young.push({a,b});

young\_r+=b;

}

else{

old.push({a,b});

old\_r+=b;

}

if(young.size() > old.size()+1){

old.push(young.top());

young\_r-=young.top().second;

old\_r+=young.top().second;

young.pop();

}

else if(old.size() > young.size()){

young.push(old.top());

old\_r-=old.top().second;

young\_r+=old.top().second;

old.pop();

}

cout<<abs(young\_r - old\_r)<<endl;

}

return 0;

}