ARRAYS AND VECTORS:

[A - Max element in the array](https://vjudge.net/problem/HackerRank-si-basic-max-element)

#include <bits/stdc++.h>

using namespace std;

int main()

{

long int n,max;

cin>>n;

vector<int> v(n);

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

cin>>v[i];

}

max=v[0];

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

if(v[i]>max)

max=v[i];

}

cout<<max<<endl;

return 0;

}

[B - Reverse array](https://vjudge.net/problem/HackerRank-si-basic-reverse-array)

#include <bits/stdc++.h>

using namespace std;

int main()

{

int n,i;

cin>>n;

vector<long int> v(n);

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

cin>>v[i];

}

for(int i=0;i<n/2;i++){

swap(v[i],v[n-i-1]);

}

for(long int a:v)

cout<<a<<" ";

return 0;

}

[C - Sum of all odd elements](https://vjudge.net/problem/HackerRank-si-basic-sum-of-odd-elements)

#include <bits/stdc++.h>

using namespace std;

int main()

{

int n,i;

long int sum=0;

cin>>n;

vector<long int> v(n);

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

cin>>v[i];

if((v[i]%2)!=0)

sum=sum+v[i];

}

cout<<sum<<endl;

return 0;

}

[D - Find duplicate element in array](https://vjudge.net/problem/HackerRank-si-basic-find-duplicate-element-in-array)

#include <bits/stdc++.h>

using namespace std;

int main()

{

int n,i;

cin>>n;

vector<long int> v(n);

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

cin>>v[i];

}

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

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

if(v[i]==v[j])

cout<<v[i]<<endl;

}

}

return 0;

}

[E - Print unique elements of array](https://vjudge.net/problem/HackerRank-si-basic-print-unique-elements-of-array)

#include <bits/stdc++.h>

using namespace std;

int main()

{

int n,i;

cin>>n;

vector<long int> v(n),a;

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

cin>>v[i];

}

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

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

if(v[i]==v[j])

a.push\_back(v[i]);

}

}

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

int b=0;

for(int j=0;j<a.size();j++){

if(v[i]==a[j]){

b=1;

break;

}

}

if(b==0)

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

}

return 0;

}

[F - Linear search on array](https://vjudge.net/problem/HackerRank-si-basic-linear-search-on-array)

#include <bits/stdc++.h>

using namespace std;

int main()

{

int n,i,b=0,ind;

long int key;

cin>>n>>key;

vector<long int> v(n);

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

cin>>v[i];

if(key==v[i]){

b=1;

ind=i;

}

}

if(b==1)

cout<<ind<<endl;

else

cout<<"-1"<<endl;

return 0;

}

[F - Linear search on array](https://vjudge.net/problem/HackerRank-si-basic-linear-search-on-array)

#include <bits/stdc++.h>

using namespace std;

int main()

{

int n,i,b=0,ind;

long int key;

cin>>n>>key;

vector<long int> v(n);

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

cin>>v[i];

if(key==v[i]){

b=1;

ind=i;

}

}

if(b==1)

cout<<ind<<endl;

else

cout<<"-1"<<endl;

return 0;

}

[G - Sum of array elements](https://vjudge.net/problem/HackerRank-si-sum-of-array-elements)

#include <bits/stdc++.h>

using namespace std;

int main()

{

int t,n;

cin>>t;

while(t--){

cin>>n;

long int a,sum=0;

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

cin>>a;

sum=sum+a;

}

cout<<sum<<endl;

}

return 0;

}

[H - Repeated Numbers](https://vjudge.net/problem/HackerRank-si-repeated-numbers)

#include <bits/stdc++.h>

using namespace std;

int main()

{

int t;

int n;

cin>>t;

while(t--){

cin>>n;

vector<int> v(n),a;

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

cin>>v[i];

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

if(v[j]==v[i])

a.push\_back(v[i]);

}

}

if(a[0]<a[1])

cout<<a[0]<<" "<<a[1]<<endl;

else

cout<<a[1]<<" "<<a[0]<<endl;

}

return 0;

}

[I - Gravity Flip](https://vjudge.net/problem/CodeForces-405A)

#include <bits/stdc++.h>

using namespace std;

int main()

{

int n;

cin>>n;

vector<int> v(n);

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

cin>>v[i];

}

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

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

if(v[j]<=v[i]){

int t=v[i];

v[i]=v[j];

v[j]=t;

}

}

}

for(int a:v){

cout<<a<<" ";

}

return 0;

## }[J - Chef team](https://vjudge.net/problem/CodeChef-CRCTEAM)

#include <bits/stdc++.h>

using namespace std;

int main()

{

int t,n;

cin>>t;

while(t--){

int even=0,odd=0;

cin>>n;

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

if((n%i)==0){

if((i%2)==0)

even++;

else

odd++;

}

}

if(even==odd)

cout<<"1"<<endl;

else

cout<<"0"<<endl;

}

return 0;

}

[K - Solve The Case](https://vjudge.net/problem/CodeChef-BC202)

#include <bits/stdc++.h>

using namespace std;

int main()

{

int t,n;

cin>>t;

while(t--){

int b;

cin>>n;

vector<int> v(n);

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

cin>>v[i];

b=0;

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

if(v[i]==v[j]){

b=1;

break;

}

}

if(b==0){

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

}

}

cout<<endl;

}

return 0;

}

[L - Multiply the Array](https://vjudge.net/problem/CodeChef-MULARR)

#include <bits/stdc++.h>

using namespace std;

int main()

{

int t,n;

cin>>t;

while(t--){

long int b=1;

cin>>n;

vector<int> v(n);

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

cin>>v[i];

b=b\*v[i];

}

cout<<b<<endl;

}

return 0;

}

[M - Compartment Weights](https://vjudge.net/problem/CodeChef-TRAINWT)

#include <iostream>

using namespace std;

int main()

{

long int t,n,q,s,e,w,sum,a;

scanf("%ld",&t);

while(t--){

sum=0;

scanf("%ld",&n);

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

scanf("%ld",&a);

sum+=a;

}

scanf("%ld",&q);

while(q--){

scanf("%ld%ld%ld",&s,&e,&w);

sum+=(e-s+1)\*w;

}

printf("%ld\n",sum);

}

return 0;

}

[N - Birthday of Anabelle](https://vjudge.net/problem/CodeChef-BDYGFT)

#include <iostream>

#include<vector>

#include<algorithm>

using namespace std;

int main()

{

int t,n,first,last,b,current;

scanf("%d",&t);

while(t--){

scanf("%d",&n);

vector<long int> v(n);

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

cin>>v[i];

}

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

b=0;

first=0;

last=v.size()-1;

while(first<last){

current=v[first]+v[last];

if(current==2000){

b=1;

break;

}

else if(current<2000){

first++;

}

else

last--;

}

printf(b?"Accepted\n":"Rejected\n");

}

return 0;

}

[O - Range Sum Problem](https://vjudge.net/problem/CodeChef-RSP)

#include <iostream>

#include<vector>

using namespace std;

int main()

{

long int n,q;

int f,l;

cin>>n>>q;

vector<long int> v(n);

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

cin>>v[i];

}

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

v[i+1]+=v[i];

}

while(q--){

cin>>f>>l;

cout<<(f>1 ? v[l - 1]-v[f - 2] : v[l - 1])<< endl;

}

return 0;

}

[P - Prefix sum](https://vjudge.net/problem/CodeChef-PRFSM)

#include <iostream>

#include <vector>

using namespace std;

int main() {

long int t, n, q, f, l;

scanf("%ld", &t);

while (t--) {

scanf("%ld", &n);

vector<long int> v(n);

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

scanf("%ld", &v[i]);

if (i != 0)

v[i] += v[i - 1];

}

scanf("%ld", &q);

while (q--) {

scanf("%ld%ld", &f, &l);

printf("%ld\n", (f > 1) ? v[l - 1] - v[f - 2] : v[l - 1]);

}

}

return 0;

}

[Q - Counting Pretty Numbers](https://vjudge.net/problem/CodeChef-NUM239)

#include <iostream>

#include <vector>

using namespace std;

int main() {

int t,f,l,r,count;

cin>>t;

while(t--){

count=0;

cin>>f>>l;

for(int i=f;i<=l;i++){

r=i%10;

if(r==2 || r==3 || r==9)

count++;

}

cout<<count<<endl;

}

return 0;

}

[A - Matrix Row Sum](https://vjudge.net/problem/HackerRank-si-basic-matrix-row-sum)

#include <bits/stdc++.h>

using namespace std;

int main()

{

int r,c,sum,a;

cin>>r>>c;

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

sum=0;

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

cin>>a;

sum+=a;

}

cout<<sum<<endl;

}

return 0;

}

[B - Matrix column sum](https://vjudge.net/problem/HackerRank-si-basic-matrix-column-sum)

#include <bits/stdc++.h>

using namespace std;

int main()

{

int r,c,sum;

cin>>r>>c;

vector<vector<int>> v(r,vector<int>(c)) ;

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

vector<int> temp(c);

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

cin>>temp[j];

}

v[i]=temp;

}

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

sum=0;

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

sum+=v[j][i];

}

cout<<sum<<endl;

}

return 0;

}

[C - Sum of two matrices](https://vjudge.net/problem/HackerRank-si-basic-sum-of-two-matrices)

#include <bits/stdc++.h>

using namespace std;

int main()

{

int r,c;

long int a;

cin>>r>>c;

vector<vector<long int>> v(r,vector<long int>(c)) ;

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

vector<long int> temp(c);

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

cin>>temp[j];

}

v[i]=temp;

}

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

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

cin>>a;

v[i][j]+=a;

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

}

cout<<endl;

}

return 0;

}

[D - Transpose matrix](https://vjudge.net/problem/HackerRank-si-basic-transpose-matrix)

#include <bits/stdc++.h>

using namespace std;

int main()

{

int r,c;

cin>>r>>c;

vector<vector<long int>> v(r,vector<long int>(c)) ;

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

vector<long int> temp(c);

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

cin>>temp[j];

}

v[i]=temp;

}

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

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

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

}

cout<<endl;

}

return 0;

}

[E - A sparse matrix](https://vjudge.net/problem/HackerRank-si-basic-a-sparse-matrix)

#include <bits/stdc++.h>

using namespace std;

int main()

{

int r,c,count=0;

cin>>r>>c;

vector<vector<long int>> v(r,vector<long int>(c)) ;

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

vector<long int> temp(c);

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

cin>>temp[j];

if(temp[j]==0)

count++;

}

v[i]=temp;

}

if(count>(r\*c/2))

cout<<"Yes"<<endl;

else

cout<<"No"<<endl;

return 0;

}

[F - Rotation of Matrix](https://vjudge.net/problem/HackerRank-si-rotation-of-matrix)

 #include <bits/stdc++.h>

using namespace std;

int main()

{

int n,t,k=1;

cin>>t;

while(t--){

cin>>n;

vector<vector<long int>> v(n,vector<long int>(n)) ;

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

vector<long int> temp(n);

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

cin>>temp[j];

}

v[i]=temp;

}

cout<<"Test Case #"<<k++<<":"<<endl;

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

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

cout<<v[n-1-j][i]<<" ";

}

cout<<endl;

}

}

return 0;

}

[G - Diagonal Traversal of Matrix](https://vjudge.net/problem/HackerRank-si-diagonal-traversal-of-matrix)

#include <bits/stdc++.h>

using namespace std;

int main()

{

int t,n,k,i,j,sum;

cin>>t;

while(t--){

cin>>n;

vector<vector<int>> v(n,vector<int>(n));

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

vector<int> temp(n);

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

cin>>temp[j];

}

v[i]=temp;

}

k=n-1;

while(k>=0){

j=k;

sum=0;

for(i=0;i<n-k;i++){

sum+=v[i][j];

j++;

}

cout<<sum<<" ";

k--;

}

k=1;

while(k<n){

i=k;

sum=0;

for(j=0;j<n-k;j++){

sum+=v[i][j];

i++;

}

cout<<sum<<" ";

k++;

}

cout<<endl;

}

return 0;

}

[H - Spiral Traversal of Matrix](https://vjudge.net/problem/HackerRank-si-spiral-traversal-of-matrix)

#include <bits/stdc++.h>

using namespace std;

int main()

{

int t,n,k,i,j,rf,rl,cf,cl;

cin>>t;

while(t--){

cin>>n;

vector<vector<int>> v(n,vector<int>(n));

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

vector<int> temp(n);

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

cin>>temp[j];

}

v[i]=temp;

}

rf=0;

cf=n-1;

rl=n-1;

cl=0;

k=0;

while(k<n){

for(i=cl;i<=cf;i++){

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

}

for(i=rf+1;i<=rl;i++){

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

}

for(i=cf-1;i>=cl;i--){

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

}

for(i=rl-1;i>rf;i--){

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

}

rf++;

cf--;

rl--;

cl++;

k++;

}

cout<<endl;

}

return 0;

}

[I - Product of 2 Matrices](https://vjudge.net/problem/HackerRank-si-product-of-2-matrices)

#include <bits/stdc++.h>

using namespace std;

int main()

{

int t,k,i,j,r1,r2,c1,c2;

cin>>t;

while(t--){

cin>>r1>>c1;

vector<vector<int>> a(r1,vector<int>(c1));

for(i=0;i<r1;i++){

vector<int> temp(c1);

for(j=0;j<c1;j++){

cin>>temp[j];

}

a[i]=temp;

}

cin>>r2>>c2;

vector<vector<int>> b(r2,vector<int>(c2));

for(i=0;i<r2;i++){

vector<int> temp(c2);

for(j=0;j<c2;j++){

cin>>temp[j];

}

b[i]=temp;

}

vector<vector<int>> c(r1,vector<int>(c2));

for(int i=0;i<r1;i++){

for(int j=0;j<c2;j++){

for(k=0;k<c1;k++){

c[i][j]+=a[i][k]\*b[k][j];

}

}

}

for(i=0;i<r1;i++){

for(j=0;j<c2;j++){

cout<<c[i][j]<<" ";

}

cout<<endl;

}

}

return 0;

}

[J - Reservior](https://vjudge.net/problem/CodeChef-RESERVOI)

#include <bits/stdc++.h>

using namespace std;

int main()

{

int n,row,col,i,j,t;

cin>>t;

while(t--){

cin>>row>>col;

vector<vector<char>> v(row,vector<char>(col));

string str;

for(i=0;i<row;i++){

cin>>str;

for(j=0;j<col;j++){

v[i][j]=str[j];

}

}

bool flag=true;

for(i=0;i<row;i++){

for(j=0;j<col;j++){

if(v[i][j] == 'W'){

if(j==0 || j==col-1 || i==row-1){

flag=false;

break;

}

else if(v[i+1][j]=='A' || v[i][j+1]=='A' || v[i][j-1]=='A'){

flag=false;

break;

}

}

else if(v[i][j]=='B'){

if(i!=row-1 && (v[i+1][j]=='W' || v[i+1][j]=='A')){

flag=false;

break;

}

}

}

if(flag == false)

break;

}

if(flag)

cout<<"yes"<<endl;

else

cout<<"no"<<endl;

}

return 0;

}