

Untitled8

August 13, 2023

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[ ]: #include <bits/stdc++.h>
#define loop(i,a, n) for(int i= a; i < n; ++i)
#define int long long int
int NNN=2147487409;
int NN=1000000007;
int N1=9999999999999999999;
#define PB push_back
#define PF push_front
#define MP make_pair
#define F first
#define S second
using namespace std;

void super_duper_fast()
{
    #ifndef ONLINE_JUDGE
        freopen("INPUTT.txt", "r", stdin);
        freopen("OUTPUTT.txt", "w", stdout);
    #endif
    std::ios_base::sync_with_stdio(0);
    cin.tie(0);
    cout.tie(0);
}

pair<int,int> find(vector<int>&v1,vector<int>&v2){
    int last_ans1=-1,last_ans2=-1;
    int ans1=-1,ans2=-1,mini=NN,maxi=NN;
    int n=v1.size(),m=v2.size();
    int med=(n+m)/2,l=0,h=n;
    while(l<h){
        int mid=(l+h)/2;
        int tar=v1[mid];
        int l1=0,h1=m,count=0;
        int aa=lower_bound(v2.begin(),v2.end(),tar)-v2.begin();
        if(aa>m) aa-=1;
        ans2=aa+1;
        ans1=mid+1;
    }
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        if(ans2+ans1>=med){
            if(ans1+ans2<mini){
                last_ans1=ans1,last_ans2=ans2;
                mini=ans1+ans2;
            }
            h=mid;
        }
        else{
            l=mid+1;
        }
    }
    pair<int,int>anssss={last_ans1,last_ans2};
    return ansss;
}

void solve(){
    int n,m,xx,yy,c,d,k;
    cin>>n>>m;
    vector<int>v1(n),v2(m);
    loop(x,0,n) cin>>v1[x];
    loop(x,0,m) cin>>v2[x];
    vector<int>last;
    int i=0,j=0;
    pair<int,int> aa;
    if(v1[0]>v2[0]){
        aa=find(v2,v1);
    }
    else{
        aa=find(v1,v2);
    }
    int sum=aa.F+aa.S-((n+m)/2),ind1=aa.F-1,ind2=aa.S-1;
    int ll=0,hh=m,indd2=aa.S-1;
    while(ll<hh){
        int mid1=(ll+hh)/2;
        if(v2[mid1]>=v2[aa.S-1]){
            if(v2[mid1]==v2[aa.S-1]) indd2=mid1;
            hh=mid1;
        }
        else ll=mid1+1;
    }
    while(sum>0){
        if(v1[ind1]<=v2[indd2]){
            indd2-=1;
        }
        else ind1-=1;
        sum-=1;
    }
}

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    if((n+m)%2==1){
        cout<<max(v1[ind1],v2[indd2])<<endl;
    }
    else{
        int mini=NN;
        if(indd2+1<m){
            mini=v2[indd2+1];
        }
        if(ind1+1<n){
            mini=min(mini,v1[ind1+1]);
        }
        cout<<(max(v1[ind1],v2[indd2])+mini)/2.0<<endl;
    }
}

void test_case()
{
    inT t;
    cin>>t;
    inT aa1=t;
    while(t-->0){
        //cout<<"Case "<<"#"<<aa1-t<<": ";
        solve();
    }
}

int main(){
    super_duper_fast();
    //solve();
    test_case();
}

```

[]: INPUT

```

4
4 3
1 2 3 4
1 2 3
8 12
1 10 11 12 13 14 15 16
2 3 4 5 6 7 8 9 17 17 17 17
7 7
1 2 3 4 5 8 13
6 6 8 9 10 11 12
4 3
1 2 2 3
2 3 4

```

[]: OUTPUT

2

10.5

7

2