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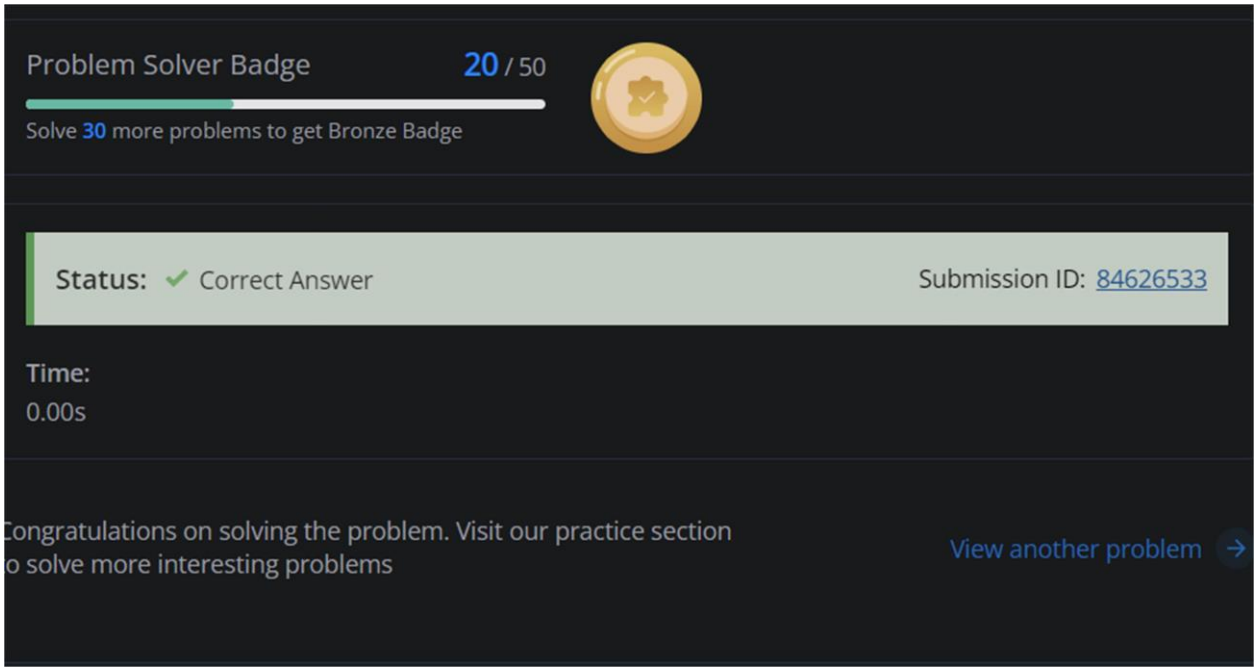
Q1. Candies

Code:

```
#include <bits/stdc++.h>
using namespace std;
// INT HERE MEANS LONG LONG
#define int long long
#define endl '\n'

bool solve(int *arr, int n, int ele)
{
   int s = 0, e = n-1;

   while(s<=e)
   {
      int mid = (s+e)/2;

      if(arr[mid] == ele)
return true;

      else if(arr[mid]<ele)
      {
         s = mid+1;
      }
else        e =
mid-1;
   }
   return false;
}

int32_t main(){
ios_base::sync_with_stdio(false);
cin.tie(NULL);
    int t;     cin >> t;     while (t-
-){        int n;        cin>>n;
int * candies = new int[n];
```

```
        for(int i = 0; i<n; i++)
        {
           cin>>candies[i];
        }

        int desired_level = *max_element(candies,candies+n)-*min_element(candies,candies+n);
bool f = false;

        for(int i = 0; i<n; i++)
        {
           if(candies[i] == desired_level)
           {
              cout<< desired_level<<endl;
f = true;                 break;
           }
        }
        if(!f)
        cout<< "NO"<<endl;
           }
return 0; }
```

Output:

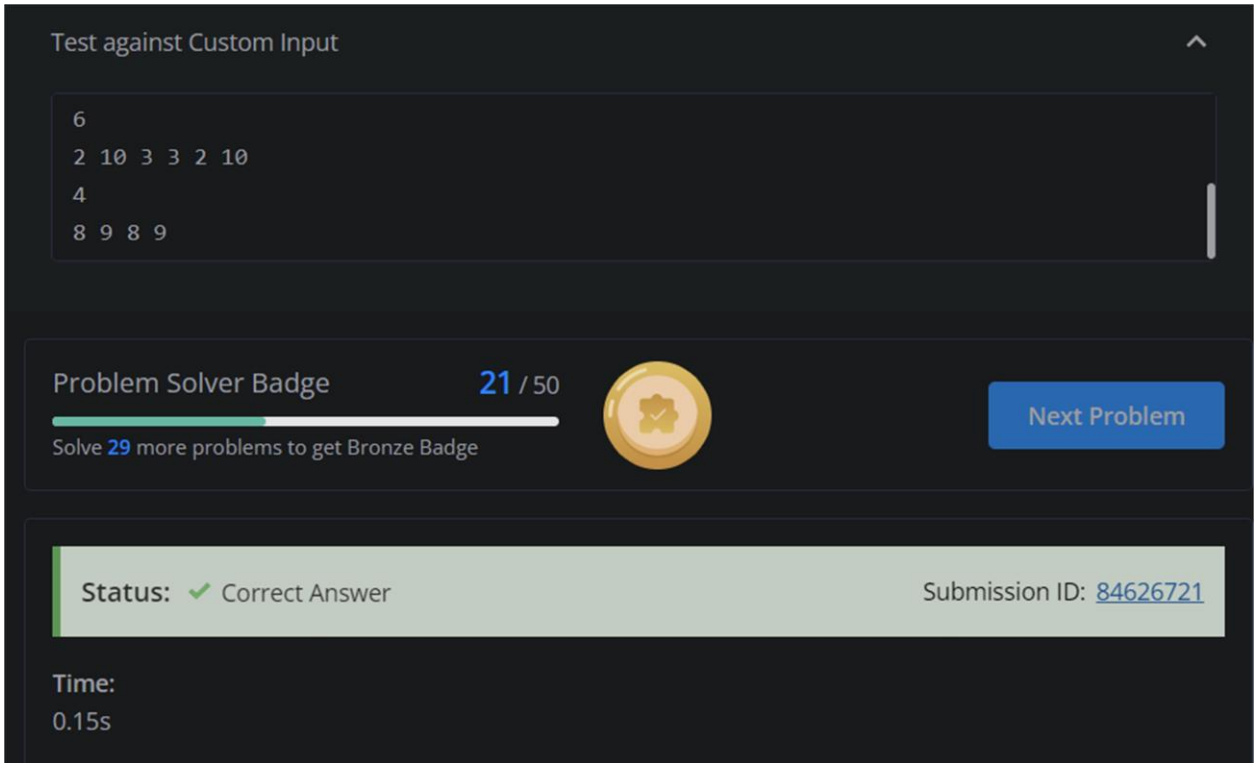


Q2. Chef and patients

Code:

```
#include <bits/stdc++.h> using
namespace std;

void solve() {     int n ; cin >>
n;     vector<pair<int, int>>
a(n);     int mx = 0;     for(int
i=0; i<n; i++) {
a[i].second = i;         cin >>
a[i].first;         mx = max(mx,
a[i].first);
    }     for(int i=0; i<n; i++) a[i].first = mx -
a[i].first;

   sort(a.begin(), a.end());
vector<int> ans(n);

   for(int i=0; i<n; i++) ans[a[i].second] = i+1;

   for(int& e : ans) cout << e << " "; cout << endl;
}

int main() {     int
ti; cin >> ti;
while(ti--)
solve();
```

```
    return 0;
}
```

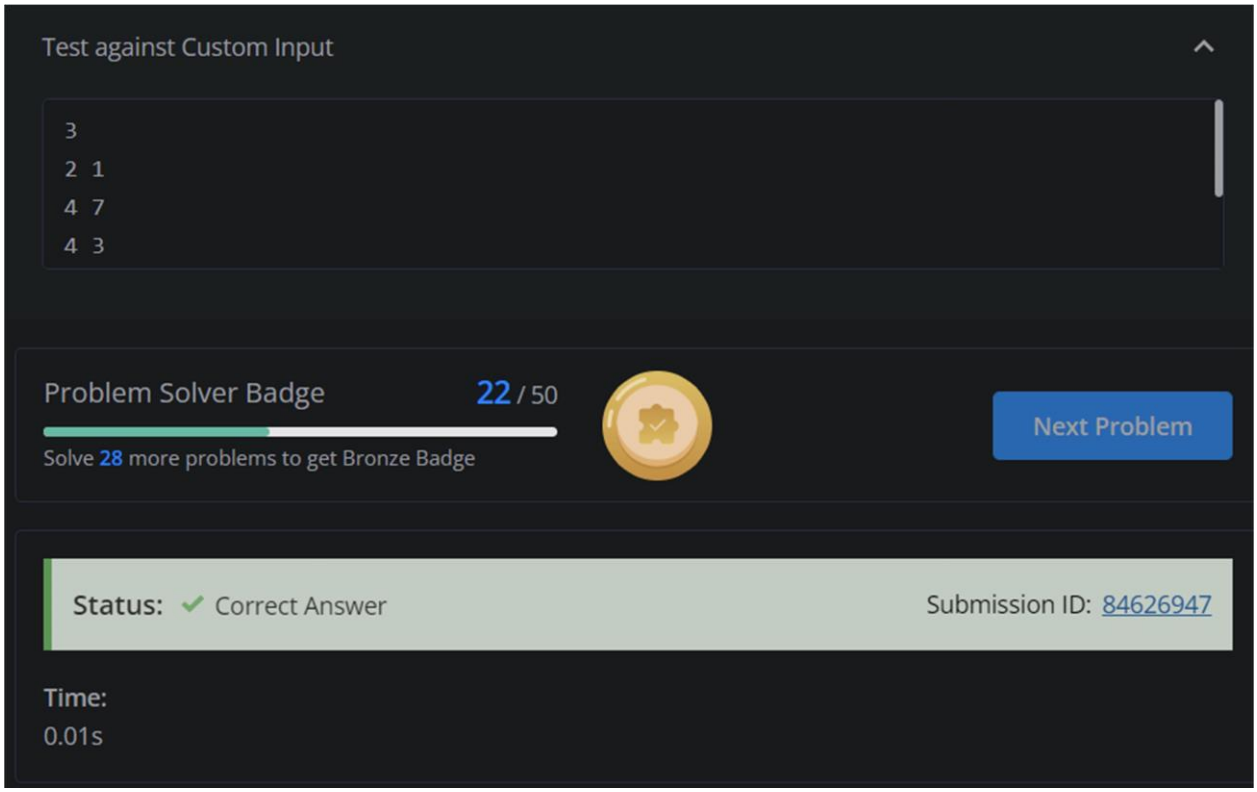


Q3. Chef and employment test

Code:

```
#include <bits/stdc++.h> using
namespace std;

int main() {
    int t;
cin>>t;
while(t--){    int
n,k;    cin>>n>>k;
int arr[n];
```

```
for(int
i=0;i<n;i++){
cin>>arr[i];
        }
        sort(arr,arr+n);
cout<<arr[(n+k)/2]<<endl;
        }
        return 0;
}
```



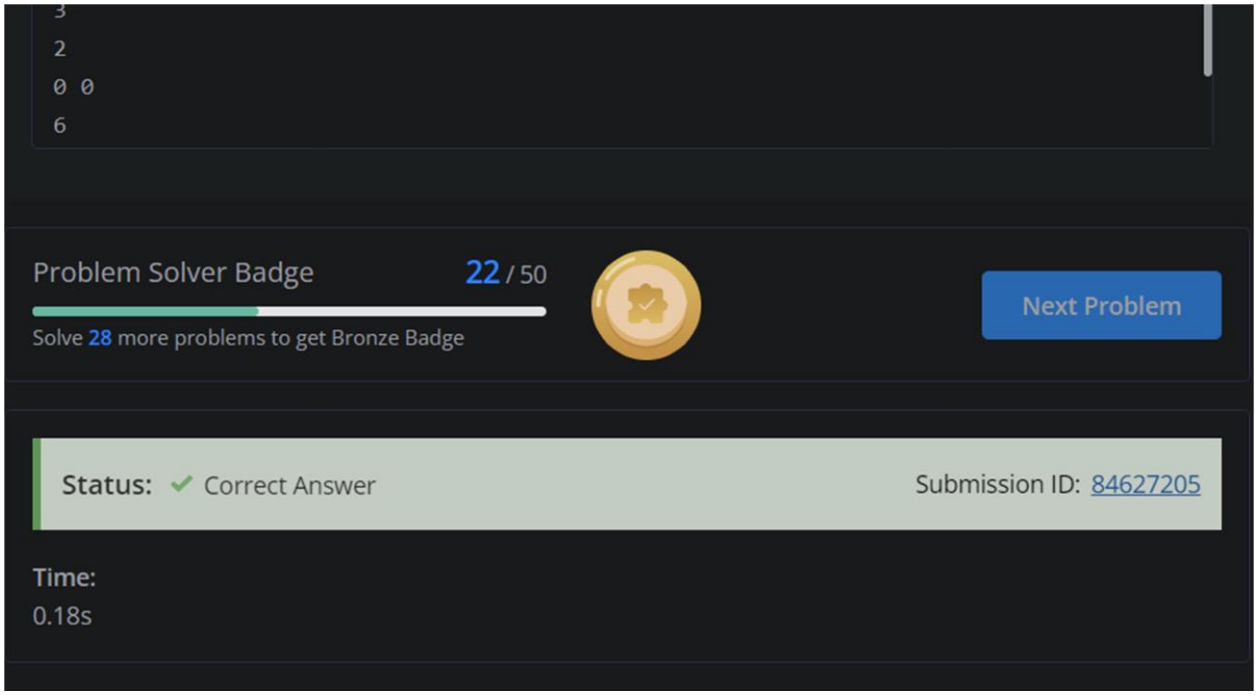
Q4. chef and party

Code:

Output:

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

```
using namespace std;


int main() {
	// your code goes here
int t ;	cin>>t;		while(t-
-){		int n;
cin>>n;			int arr[n];
for(int i=0;i<n;i++){		int
a;			cin>>arr[i];
		}
		int count=0;
sort(arr,arr+n);			for(int
i=0;i<n;i++){		if(arr[i]==0 ||
arr[i]<=count){				count++;
	}
		}
		cout<<count<<endl;
	}
	return 0;
}
```



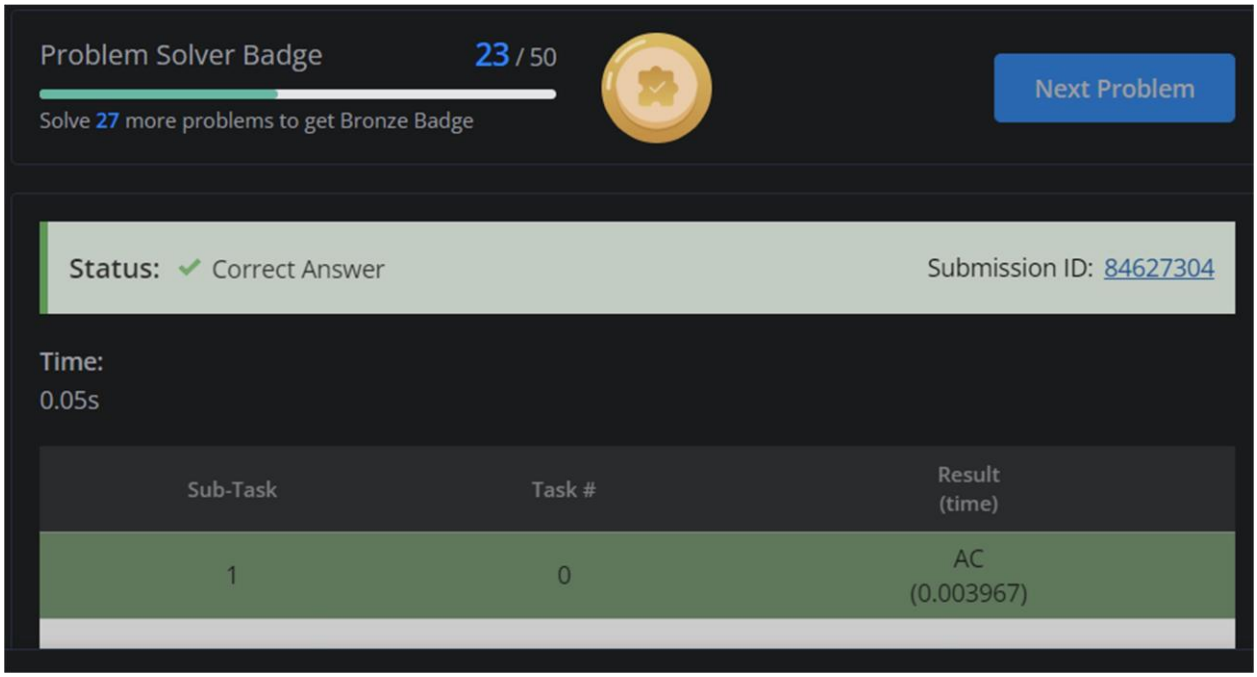
Q5. Frog sort

Code:

```
#include <iostream>
#include<vector>
#include<algorithm>
#include<math.h>
using namespace std;

bool compare(vector<int> &v1,vector<int> &v2){
return v1[1]<v2[1];
}

int main() {
        int t;
cin>>t;
```

```
while(t--){
int n;       cin>>n;


            vector<vector<int>> v(n,vector<int>(3));
    for(int i=0;i<n;i++)
        {
v[i][0]=i;
cin>>v[i][1];


        }


       for(int j=0;j<n;j++){
cin>>v[j][2];
       }


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


       //  for(int i=0;i<n;i++)
       //  {
       //      cout<<v[i][0]<<" "<<v[i][1]<<" "<<v[i][2]<<endl;
       //    }              int  ans=0;
for(int              i=1;i<n;i++){
if(v[i][0]<=v[i-1][0]){
int     inc=v[i-1][0]-v[i][0]+1;
int
```

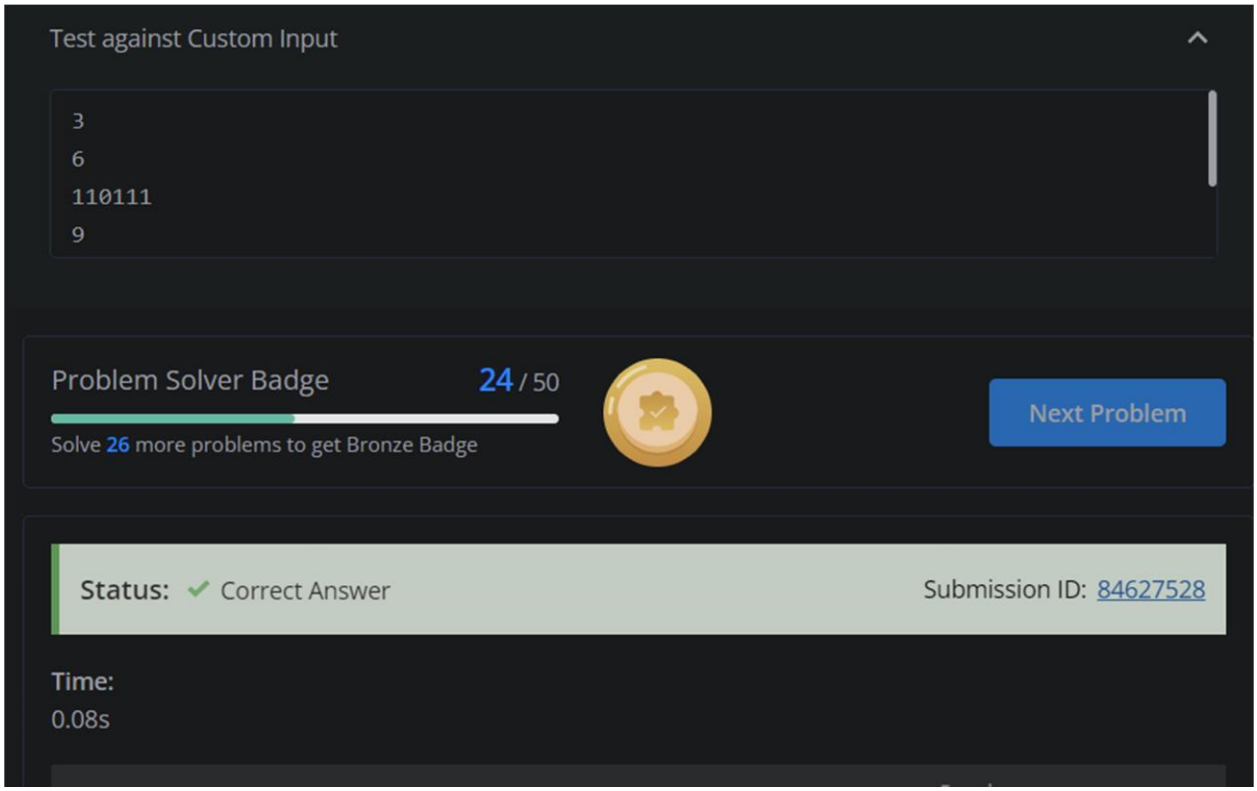
```
count=ceil((inc*1.0)/(v[i][2]
*1.0));            //   cout<<i<<"
"<<count<<"   "<<inc<<"   ";
ans+=count;
v[i][0]+=v[i][2]*count;
          //   cout<<v[i][0]<<endl;


         }
      }
     cout<<ans<<endl;
          }
          return 0;
}
```



Q6. Flip Sorting

Code:

```
#include <bits/stdc++.h>
using namespace std;
#define ll long long int
int main() {
ll t;
cin>>t; while(t--) {  int
n;  cin>>n;  string s;
cin>>s;  string k=s;
sort(k.begin(),k.end());
if(k==s)
cout<<"0"<<endl;
 else   {      int count=0;
for(int i=0;i<n-1;i++)
{ if(s[i]!=s[i+1])
count++;
      }
     cout<<count<<endl;
for(int  i=n-2;i>=0;i--)         {
if(s[i]!=s[i+1])
cout<<"1"<<"
"<<i+1<<endl;
    }
 }
}
}
```



Q7. Chef and sorting

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

using namespace std; typedef

long long ll;

#define maxN 1010

#define maxK 60

#define mod 1000000007 int

a[maxN]; int main(){ int tc, n,

i, j, k, l = (1 << 30) - 1;

scanf("%d", &tc); while (tc--) {

scanf("%d", &n); for (i = 0; i <

n; i++) { scanf("%d", &a[i]); }
```

```
j = 0, k = 1; for (i = 1; i < n;
i++) { if (a[i - 1] < a[i]) {
k++; } else if (a[i - 1] > a[i])
{ j++; } } printf("%d\n",
min(j, k)); if (k < j) {
printf("%d %d %d\n", 3, n,
l); for (i = 0; i < n; i++) { a[i]
^= l; }
} for (i = 1; i < n; i++) { if (a[i - 1] > a[i]) {
printf("%d %d %d\n", 2, i + 1, a[i - 1] - a[i]);
}
} }
return 0;
}
```