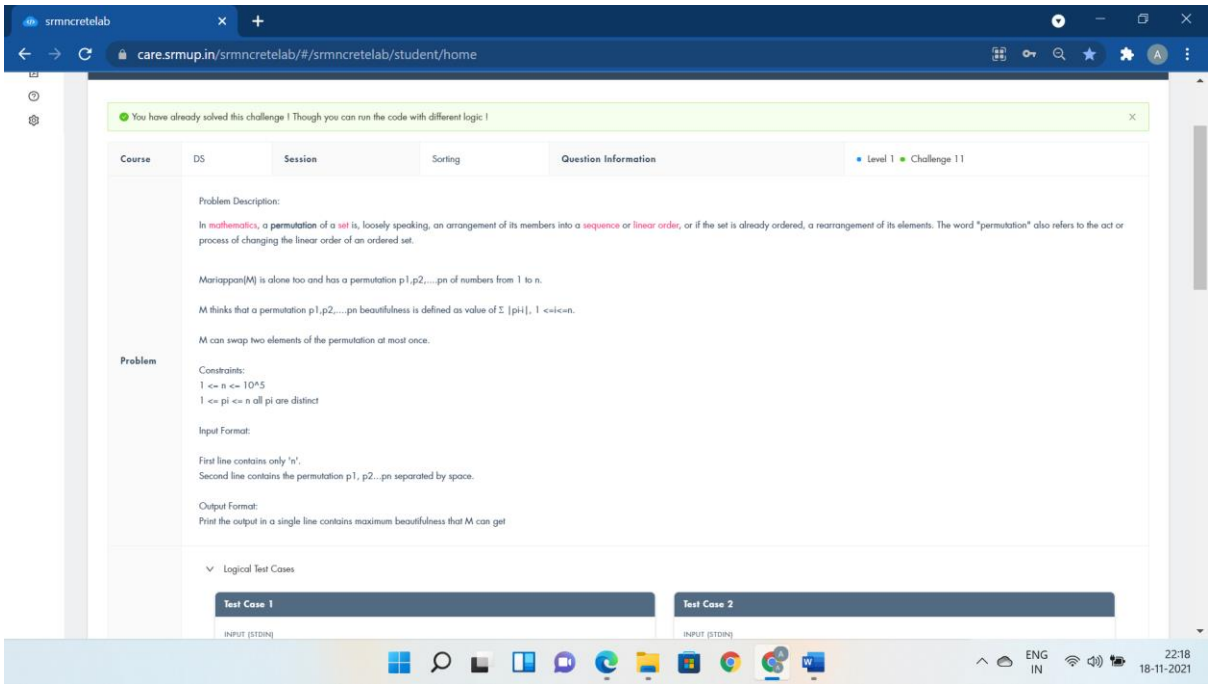
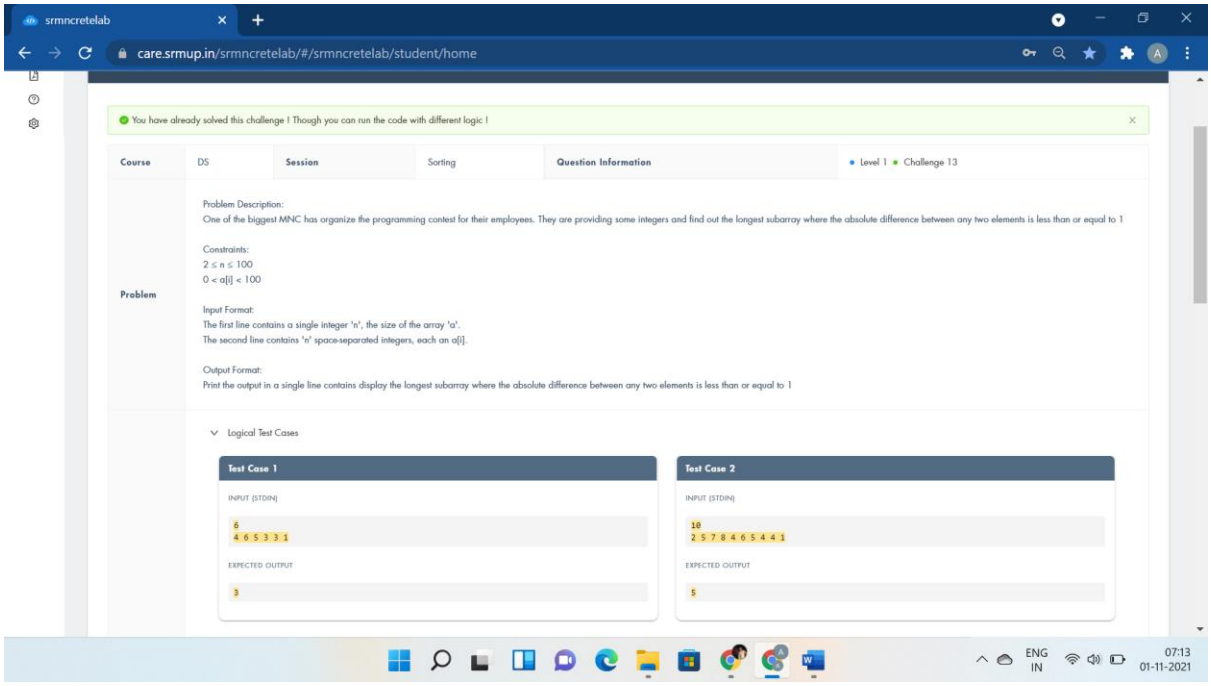
DSA SORTING:-

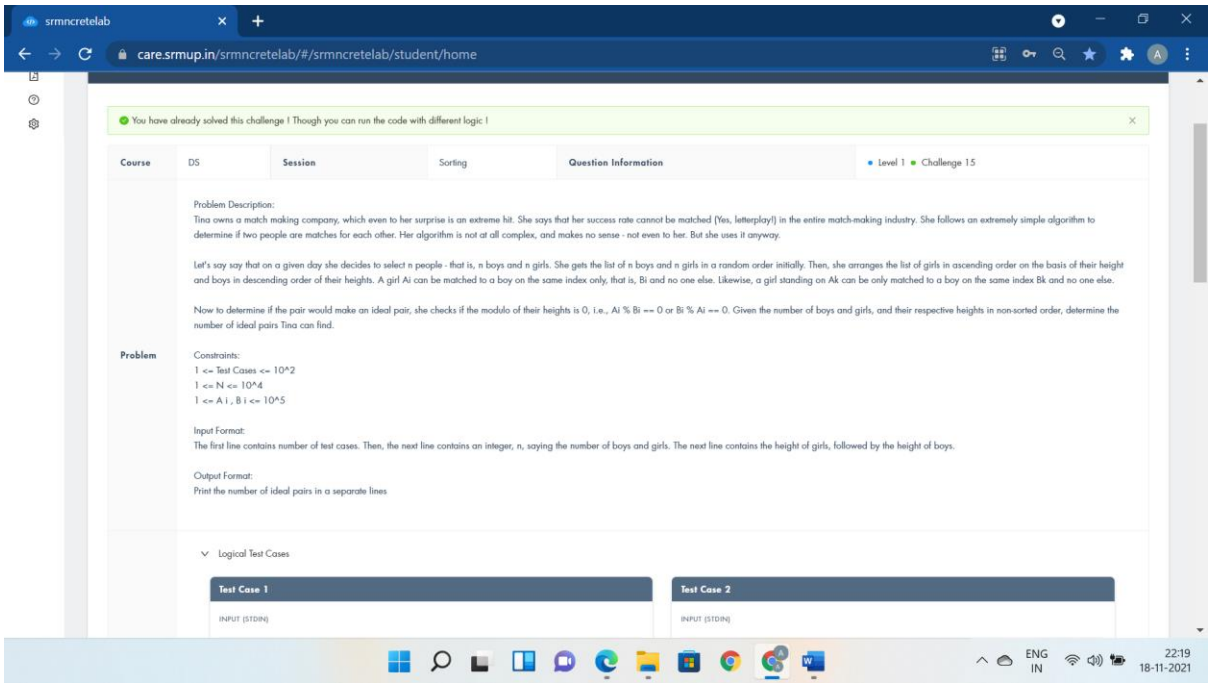



```
#include<bits/stdc++.h>
using namespace std;
int main(){
   int n,i,sum=0;
   cin>>n;
   int arr[n];
   for(i=0;i<n;i++)
   cin>>arr[i];
   sort(arr,arr+n);
   for(i=0;i<n;i++)
   {
      int z= arr[n-i-1]-(i+1);
      //cout<<z<<" ";
      //cout<<abs(z);
      sum=sum+abs(z);
   }
   cout<<sum;
   return 0;
   cout<<"swap(l,r);";
}
```



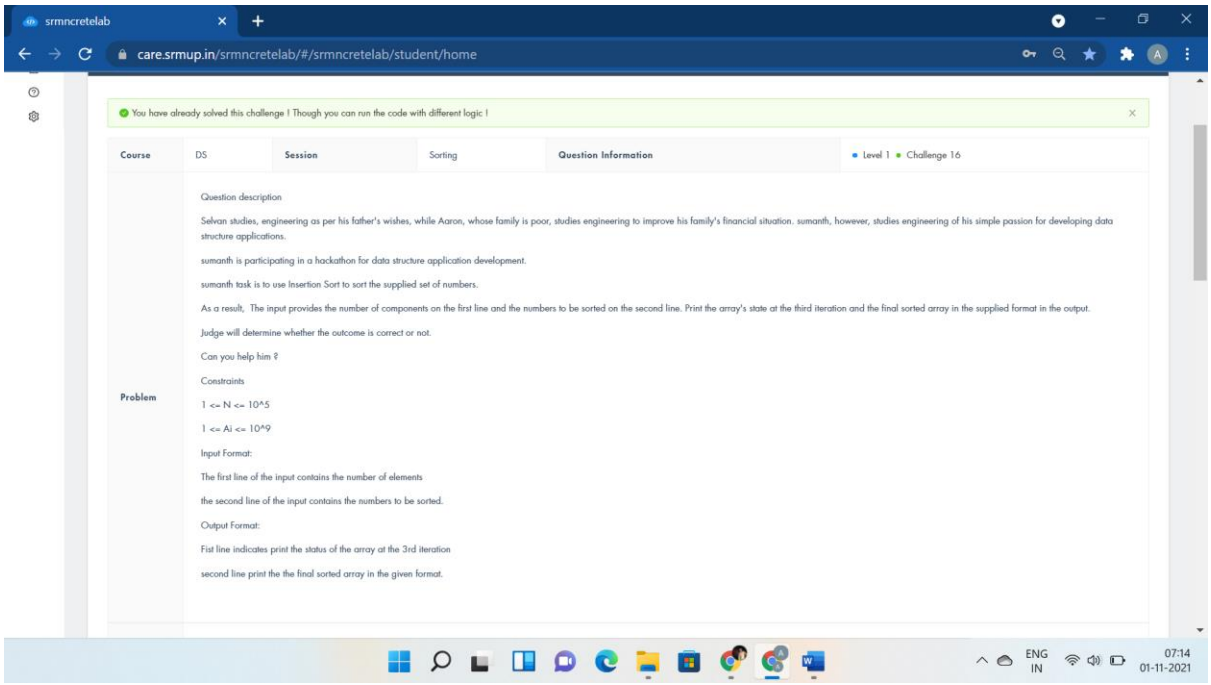

```
#include <bits/stdc++.h>
#define f(i,a,n) for(i=a;i<n;i++)
using namespace std;
int computeLongestSubarray(int arr[], int k, int n)
{
	int j,i, maxLength = 1;
	f(i,0,n)
	{
		int minOfSub = arr[i];
		int maxOfSub = arr[i];
		f(j,i+1,n)
		{
			if (arr[j] > maxOfSub)
				maxOfSub = arr[j];
			if (arr[j] < minOfSub)
				minOfSub = arr[j];
			if ((maxOfSub - minOfSub) <= k)
			{
				int currLength = j - i + 1;
				if (maxLength < currLength)
					maxLength = currLength;
```

```
                                }
                        }
                }
                return maxLength;
}
int main()
{
                int n,i;
                cin>>n;
                int arr[n];
                f(i,0,n)
                cin>>arr[i];
                int k = 1;
   sort(arr,arr+n);
                int maxLength = computeLongestSubarray(arr, k, n);
                cout << (maxLength);
                return 0;
                cout<<"void insertionSort(int *p,int n) arr=(int *)malloc(n*sizeof(int)); insertionSort(arr,n);";
}
```



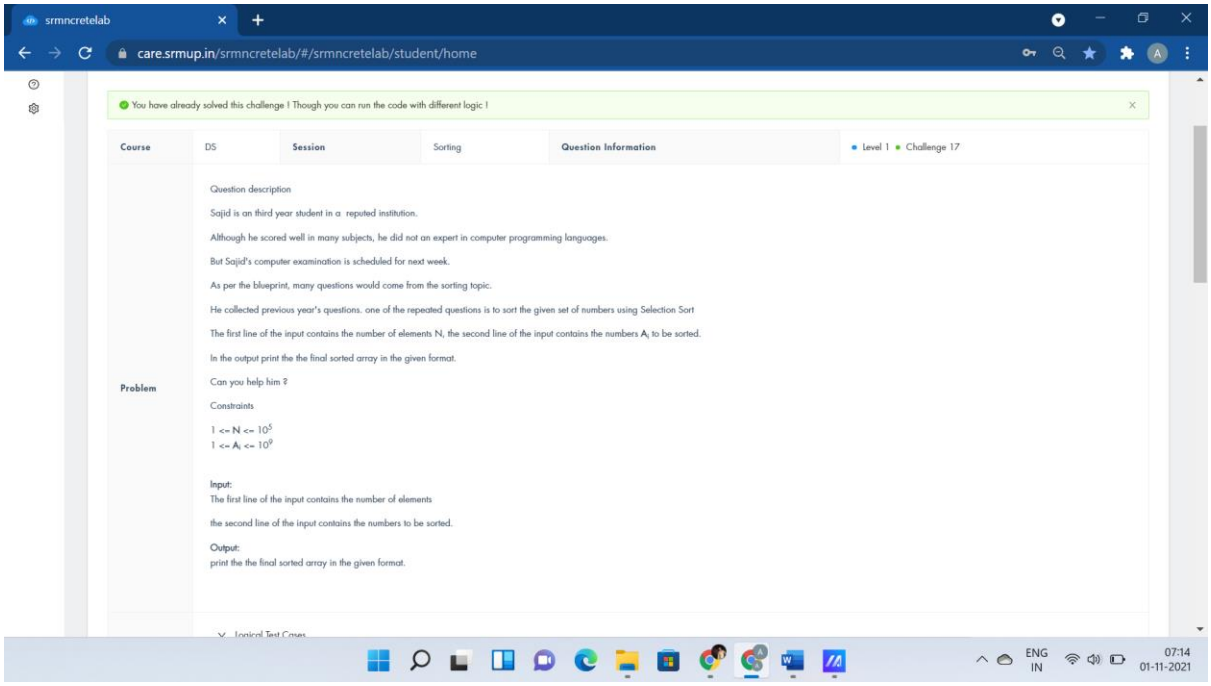

```
#include<bits/stdc++.h>
using namespace std;
int main()
```

```
{
   int t,n,i;
   cin>>t;
   while(t--){
      cin>>n;
      int a[n],b[n],sum=0;
      for(i=0;i<n;i++)
      cin>>a[i];
      for(i=0;i<n;i++)
      cin>>b[i];
      sort(a,a+n);
      sort(b,b+n);
      for(i=0;i<n;i++){
         if(a[i]%b[n-i-1]==0 || b[n-i-1]%a[i]==0)
         sum++;
      }
      cout<<sum<<endl;
   }
            return 0;
}
```



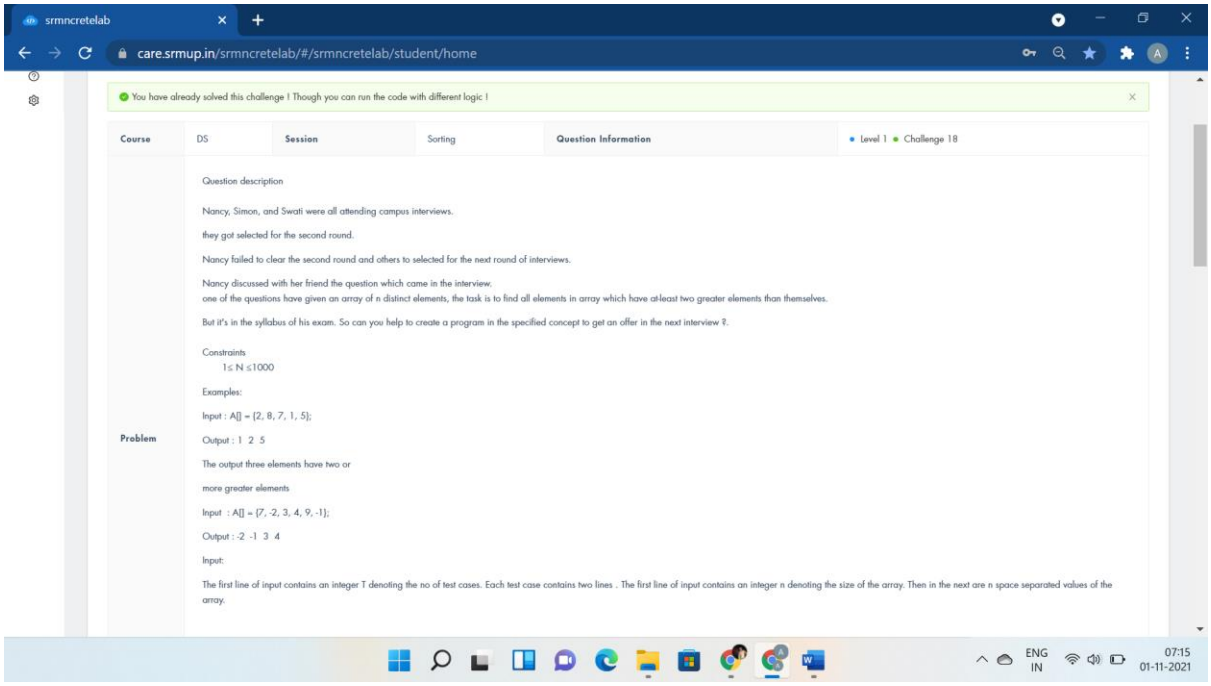
```
#include <iostream>
#define f(i,a,n) for(i=a;i<n;i++)
using namespace std;
void insertionSort(int arr[],int n)
{
   for(int i=1;i<n;i++){
      int curr = arr[i];
      for(int j=i-1;j>=0;j--){
         if(arr[j]>curr){
            arr[j+1]=arr[j];
            if(j==0)
               arr[j]=curr;
         }
         else{
            arr[j+1]=curr;
            j=-1;
         }
      }
      int k;
      if(i==2){
      f(k,0,n)
      cout<<arr[k]<<" ";
      cout<<endl;
      }
   }
}

void printArray(int arr[],int n)
{
   int i;
   f(i,0,n)
      cout << arr[i] <<" ";
}

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

```
    int arr[n];
    for(int i=0;i<n;i++)
    cin>>arr[i];
    insertionSort(arr, n);
    printArray(arr, n);

    return 0;
}
```



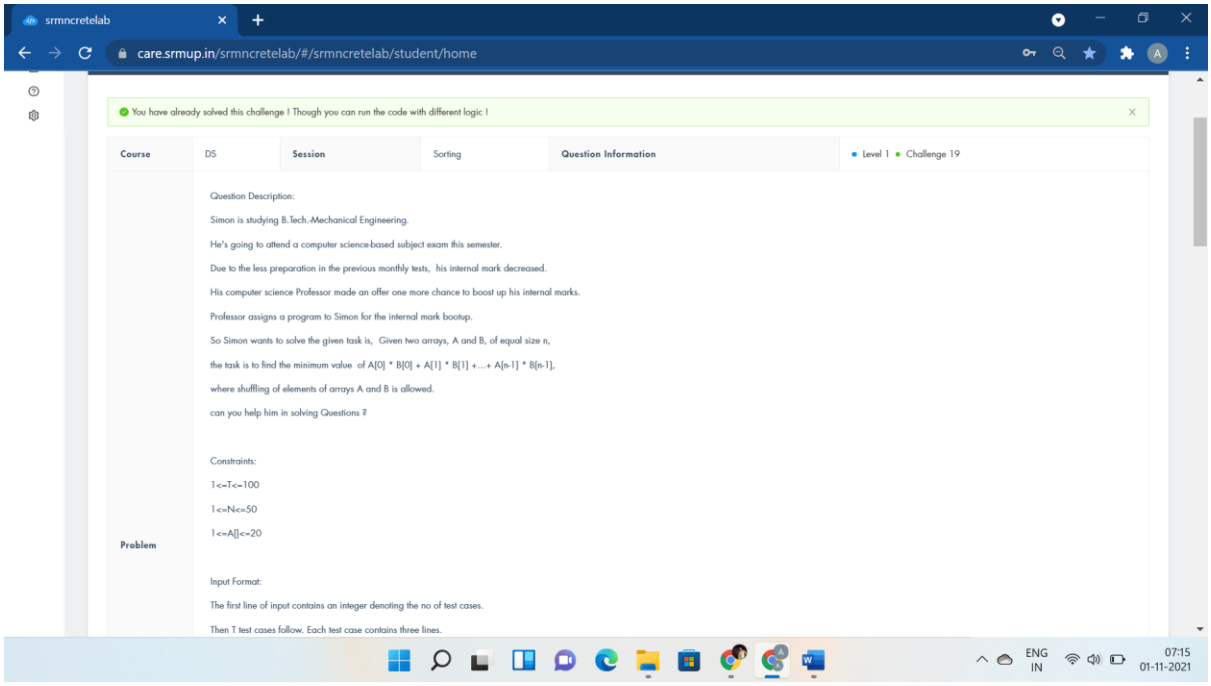

```
#include <stdio.h>
void swap(int *xp,int *yp)
{
        int temp = *xp;
        *xp = *yp;
        *yp = temp;
}
void selectionSort(int arr[],int n)
{
        int i, j, min_idx;
        for (i = 0; i < n-1; i++)
        {
                min_idx = i;
```

```
                for (j = i+1; j < n; j++)
                if (arr[j] < arr[min_idx])
                        min_idx = j;
                swap(&arr[min_idx], &arr[i]);
        }
}
void printArray(int arr[],int size)
{
        int i;
        for (i=0; i < size; i++)
                printf("%d ", arr[i]);
        printf("\n");
}
int main()
{
   int n,i;
   scanf("%d",&n);
        int arr[n];
        for(i=0;i<n;i++)
        scanf("%d",&arr[i]);
        selectionSort(arr, n);
        printArray(arr, n);
        return 0;
}
```




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

using namespace std;

void swap(int *xp, int *yp)

{

   int temp = *xp;

   *xp = *yp;

   *yp = temp;

}

void sort(int a[],int n){

   int i, j;

   for(i=0;i<n-1;i++)

   for(j=0;j<n-i-1;j++)

      if (a[j] > a[j+1])

         swap(&a[j], &a[j+1]);

}

int main()

{

   int t,n;

   cin>>t;

   while(t--){

      cin>>n;

      int a[n];

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

```
    cin>>a[i];
    sort(a,n);
    for(int i=0;i<n-2;i++)
    cout<<a[i]<<" ";
    cout<<endl;
  }
        return 0;
}
```




```
#include <bits/stdc++.h>
using namespace std;
class sor{
  public:
  int a[100],b[100];
  int n;
  void getn(){
    cin>>n;
  }
  void geta(){
    for(int i=0;i<n;i++)
    cin>>a[i];
    sort(a,a+n);
```

```
    }
    void getb(){
        for(int i=0;i<n;i++)
        cin>>b[i];
        sort(b,b+n);
    }
    void display(){
        int sum=0;
        for(int i=0;i<n;i++)
        sum+=a[i]*b[n-i-1];
        cout<<sum<<endl;
    }
};
int main()
{
    if(0)
    cout<<"void sort(int a[],int n,int flag)";
    int n;
    cin>>n;
    while(n--){
        sor t;
        t.getn();
        t.geta();
        t.getb();
        t.display();
    }
                return 0;
}
```