

Union and Intersection of two arrays

Two arrays will be provided to you. Task is to find union between these two arrays. Union of the two arrays can be defined as the set containing distinct elements from both the arrays. If there are repetitions, then only one occurrence of element should be considered. Intersection can be defined as unique elements in both arrays which is not common in both arrays. Print number of elements in union and intersection.

$$1 \leq A[i] \leq 10^5$$

$$1 \leq B[j] \leq 10^5$$

You can modify program as per requirement.

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

int doUnion(int a[], int n, int b[], int m) {
    // Your code here.
}

int doIntersection(int a[], int n, int b[], int m) {
    // Your code here.
}

signed main() {

    int n;
    cin >> n;
    int a[n];
    for(auto &x:a) cin >> x;
    int m;
    cin >> m;
    int b[m];
    for(auto &x:b) cin >> x;

    cout << doUnion(a,n,b,m) << " " << doIntersection(a,n,b,m);

    return 0;
}
```

```
/*  
  
Input:  
10  
13 4 6 6 20 6 7 10 12 15  
8  
8 16 6 2 16 14 19 9  
  
Output:  
14 13  
  
*/
```

Explanation:

Union : here when we put all elements in one place and remove duplicates then elements will be [2, 4, 6, 7, 8, 9, 10, 12, 13, 14, 15, 16, 19, 20]. So here total 14 elements in the union so answer is 14.

Intersection: To know intersection we just need to remove common element in array A and B from union. So here 6 is common so if we remove 6 from union then remained elements will be 13.