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Started on	Friday, 25 October 2024, 2:26 PM
State	Finished
Completed on	Friday, 25 October 2024, 2:53 PM
Time taken	27 mins 19 secs
Marks	1.00/1.00
Grade	30.00 out of 30.00 (100%)

Question 1

Correct

Mark 1.00 out of 1.00

Find the intersection of two sorted arrays.

OR in other words,

Given 2 sorted arrays, find all the elements which occur in both the arrays.

Input Format

· The first line contains T, the number of test cases. Following T lines contain:

1. Line 1 contains N1, followed by N1 integers of the first array
2. Line 2 contains N2, followed by N2 integers of the second array

Output Format

The intersection of the arrays in a single line

Example

Input:

```
1
3 10 17 57
6 2 7 10 15 57 246
```

Output:

```
10 57
```

Input:

```
1
6 1 2 3 4 5 6
2 1 6
```

Output:

```
1 6
```

For example:

Input	Result
1 3 10 17 57 6 2 7 10 15 57 246	10 57

Answer: (penalty regime: 0 %)

```
1 #include <stdio.h>
2 #include <stdlib.h>
3
4 void findIntersection(int *arr1, int n1, int *arr2, int n2) {
5     int i = 0, j = 0, index = 0;
6     int *intersection = (int *)malloc((n1 < n2 ? n1 : n2) * sizeof(int));
7
8     while (i < n1 && j < n2) {
9         if (arr1[i] < arr2[j]) i++;
10        else if (arr1[i] > arr2[j]) j++;
11        else if (index == 0 || intersection[index - 1] != arr1[i]) {
12            intersection[index++] = arr1[i];
13            i++; j++;
14        }
15    }
16
17    for (int k = 0; k < index; k++) {
18        printf("%d%c", intersection[k], (k < index - 1) ? ' ' : '\n');
19    }
20
21    free(intersection);
22 }
```

```
23
24 int main() {
25     int T;
26     scanf("%d", &T);
27     while (T--) {
28         int n1, n2;
29         scanf("%d", &n1);
30         int *arr1 = (int *)malloc(n1 * sizeof(int));
31         for (int i = 0; i < n1; i++) scanf("%d", &arr1[i]);
32         scanf("%d", &n2);
33         int *arr2 = (int *)malloc(n2 * sizeof(int));
34         for (int i = 0; i < n2; i++) scanf("%d", &arr2[i]);
35         findIntersection(arr1, n1, arr2, n2);
36         free(arr1);
37         free(arr2);
38     }
39     return 0;
40 }
```

	Input	Expected	Got	
✓	1 3 10 17 57 6 2 7 10 15 57 246	10 57	10 57	✓
✓	1 6 1 2 3 4 5 6 2 1 6	1 6	1 6	✓

Passed all tests! ✓

Correct

Marks for this submission: 1.00/1.00.



◀ 2-Finding Duplicates-O(n) Time Complexity,O(1) Space Complexity

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4-Print Intersection of 2 sorted arrays-O(m+n)Time Complexity,O(1) Space Complexity ▶