

Competitive Programming

Program – 4

Aim:

The task is to find the intersection of two sorted arrays. Specifically, given two sorted arrays, you need to find all the elements that appear in both arrays and print them.

Input:

- The first line contains an integer TTT , the number of test cases.
- For each test case:
 - The first line contains an integer $N1N1N1$, followed by $N1N1N1$ integers representing the first sorted array.
 - The second line contains an integer $N2N2N2$, followed by $N2N2N2$ integers representing the second sorted array.

Code:

```
#include <stdio.h>
```

```
void find_intersection(int* arr1, int n1, int* arr2, int n2) {
```

```
    int i = 0, j = 0;
```

```
    int found = 0;
```

```
    while (i < n1 && j < n2) {
```

```
        if (arr1[i] == arr2[j]) {
```

```
            if (found) {
```

```
                printf(" ");
```

```
            }
```

```
            printf("%d", arr1[i]);
```

```
            found = 1;
```

```
            i++;
```

```
            j++;
```

```
    } else if (arr1[i] < arr2[j]) {  
        i++;  
    } else {  
        j++;  
    }  
}  
printf("\n");  
}
```

```
int main() {  
    int T;  
    scanf("%d", &T);  
  
    while (T-->0) {  
        int N1;  
        scanf("%d", &N1);  
        int arr1[N1];  
        for (int i = 0; i < N1; i++) {  
            scanf("%d", &arr1[i]);  
        }  
  
        int N2;  
        scanf("%d", &N2);  
        int arr2[N2];  
        for (int i = 0; i < N2; i++) {  
            scanf("%d", &arr2[i]);  
        }  
    }  
}
```

```

        find_intersection(arr1, N1, arr2, N2);
    }

    return 0;
}

```

Output:

	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	✓