Competitive Programming

Program – 3

Aim:

Given two sorted arrays, find the intersection of the arrays, which are the elements that appear in both arrays.

Input Format:

1. The first line contains the integer T, the number of test cases.
2. For each test case:
    - The first line contains N1, followed by N1 integers representing the first sorted array.
    - The second line contains N2, followed by N2 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--) {
        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	✔