

Exercise 1.4.12. Write a program that, given two sorted arrays of  $N$  int values, prints all elements that appear in both arrays, in sorted order. The running time of your program should be *proportional* to  $N$  in the *worst case*.

Solution

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//Pseudocode:

function in_both(a[], b[])
    i_a = 0; //index counter of a[]
    i_b = 0 //index counter of b[]

    last_match = -1
    s = ""

    while(i_a < a.length AND i_b < b.length)
        if(a[i_a] < b[i_b])
            i_a++
        else if(a[i_a] > b[i_b])
            i_b++
        else
            if(last_match < 0 OR a[i_a] != a[last_match])
                s += a[i_a].toString + " " //String that will be printed
                last_match = i_a
            i_a++
            i_b++;

INPUT SAMPLE:
    a[] = {0,1,2,3,4,5}
    b[] = {4,5,6,7,8,9}

OUTPUT SAMPLE:
    4,5
```