January 2024 CSE 102
Online Assignment on Arrays
Union and Intersection of Two Sorted Arrays

Time: 30 minutes

Subsections C1 & C2

Union of two arrays is an array with all **distinct** elements present in either array. In contrast, **Intersection** of two arrays contains **distinct common** elements between the two arrays.

You are given two **sorted** arrays, **a[]** and **b[]**, and the task is to return the **Union** and **Intersection** of both arrays in sorted order. **The input arrays may contain duplicate elements.**

Input Description:

- a[]: A sorted array of integers, potentially containing duplicate elements.
- b[]: Another sorted array of integers, potentially containing duplicate elements.

Both arrays are sorted in non-decreasing order.

Output Description:

- Union[]: A sorted array that contains all distinct elements from both arrays (a[] and b[]), with no duplicates.
- Intersection[]: A sorted array that contains only the distinct elements that are common to both arrays (a[] and b[]).

Both the Union and Intersection arrays should be sorted in non-decreasing order.

Sample I/O

Input	Output
6 1 1 2 2 2 4 4 2 2 4 4	Union: {1, 2, 4} Intersection: {2, 4}
2 1 2 2 3 4	Union: {1, 2, 3, 4} Intersection: {}

Submission Guideline

1. Create a new folder named "your 7-digit student ID_online_array".
2. Your .c file should be named "your 7-digit student ID.c".
3. Put your .c file (not .exe or .o files) in the folder created in step 1.
4. Right-click on the folder, select "send to > compressed (zipped) folder" to zip the folder. Submit the zip file on Moodle.

For example, if your student ID is 2305999, then, rename your .c file as “2305999.c” and create a folder called “2305999_online_array”. Put the .c file in the folder and zip it.