



भारतीय सूचना प्रौद्योगिकी संस्थान गुवाहाटी
INDIAN INSTITUTE OF INFORMATION TECHNOLOGY GUWAHATI

IT Workshop I, B.Tech 3rd Semester

Instructions

1. Deadline to submit is 23rd August 2023.

Assignment 3

1. You are given two sorted arrays. Pass these arrays as arguments to a method called “mergeArray(int[], int[])” that merges the two sorted arrays and returns a fully sorted array. Call `int [] mergeArray(int[], int[])` from `main()` function and receive the returned array. Finally, print the fully sorted array. The time complexity of the `mergeArray()` function should be no more than $O(n)$. Take as input from the console the two sorted arrays.
(6)
2. You are given three sorted arrays as input. Write a function in Java that takes as an argument the three arrays and returns the K smallest common elements among the three sorted arrays. The code should be time and space-efficient. Report the time and space complexity of the function.
(5+2=7)
3. Write a function that takes a character array as input and rearranges it in linear time such that all occurrences of a specific character are pushed to the end.
(5)
4. Write a function that takes an array of integers as input and finds a pair of elements whose sum is closest to zero. Return the sum of these two elements. Provide the time and space complexity of the function.
(5+2=7)

Notes:

1. Additional 5 marks for good programming practice.