AMRITA VISHWA VIDYAPEETHAM
DEEMED TO BE UNIVERSITY UNDER SECTION 3 OF UGC ACT, 1956

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AMC FOSS CLUB

Practice Questions - 2

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1. Given an array and a number K where K is smaller than the size of the array. Find the K'th largest element in the given array. Given that all array elements are distinct.

   Sample Input: arr[] = { 5, 2, 7, 1, 3}, k = 2

   Sample Output: 5

   Explanation: The 2nd largest element is 5.

2. Given a sorted array arr[] and a number x, write a function that counts the occurrences of x in arr[]. Expected time complexity is O(Logn).

   Sample Input: x = 2

   A[] = {2,1,2,9,3,4,7,2,5}

   Sample Output: 3

   Explanation: The number 2 occurs 3 times in the array.

   Constraints: As the expected time complexity is O(LogN), you can't use linear search

3. Write a program to reverse an array

   Sample Input: arr[] = {4, 5, 1, 2}

   Sample Output: arr[] = {2, 1, 5, 4}

4. Given an array Arr[] of N integers. Find the contiguous sub-array (containing at least one number) which has the maximum sum and return its sum. (Kadane's Algorithm)

Sample Input: a[] = { -2, -3, 4, -1, -2, 1, 5, -3 }

Sample Output: 7

Explanation: The Max subarray sum is 7 of elements (4, -1, -2, 1, 5) which is a contiguous subarray.

5. Given an array and a value, find if there is a triplet in array whose sum is equal to the given value. If there is such a triplet present in array, then print the triplet and return true. Else return false.

   Sample Input: arr = {12, 3, 4, 1, 6, 9}, sum = 24;

   Sample Output: 12, 3, 9

   Explanation: There is a triplet (12, 3 and 9) present in the array whose sum is 24.

   Constraints: Expected Time Complexity is O(n^2).