Day 12

Lab Assignments

1. WAP to sort the elements of an array in ascending order.
   Input: Enter the array size: 5
   Enter 5 elements: 3 6 1 8 5
   Output: Before sorting elements are: 3 6 1 8 5
   After sorting elements are: 1 3 5 6 8
2. Given an array of non-negative integers and an integer sum, find a sub-array that adds to a given sum.
   Input: Enter the array size: 10
   Enter 10 elements: 3 16 11 8 15 4 12 34 51 7
   Enter the sum: 39
   Output: Sub array which adds to 39: [8 15 4 12]
3. WAP to find out the second largest element stored in an array of integers.
   Input: Enter the array size: 10
   Enter 10 elements: 3 16 11 8 15 4 12 34 51 7
   Output: Second Largest Element: 34
4. WAP to find the median of a list of numbers stored in an array.
   Input 1: Enter the array size: 10
   Enter 10 elements: 3 16 11 8 15 4 12 34 51 7
   Output 1: Median of the given array: 11.5
   Input 2: Enter the array size: 5
   Enter 5 elements: 3 6 1 8 5
   Output 2: Median of the given array: 5
5. WAP to find the standard deviation of a list of numbers.
   Input: Enter the array size: 5
   Enter 5 elements: 3 6 1 8 5
   Output: Standard Deviation: 2.4166091947189
6. WAP to merge the contents of two sorted arrays and store it into a third array.
   Input: Enter the first array size: 5
   Enter 5 elements of the first array: 3 6 11 18 25
   Enter the second array size: 3
   Enter 3 elements of the second array: 13 36 50
   Output: First Array: 3 6 11 18 25
   Second Array: 13 36 50
   Merged Array: 3 6 11 13 18 25 36 50

Home Assignments

1. Given an integer array, find the peak element in it. A peak element is an element that is greater than its neighbors. There might be multiple peak elements in an array, and the solution should report all peak elements.
   Input: Enter the array size: 10
   Enter 10 elements: 3 16 11 8 15 4 12 34 51 7
   Output: Peak Elements are: 16 15 51
2. WAP Given an array A of n elements. Find the majority element in the array. A majority element in an array A of size n is an element that appears more than n/2 times in the array.
   Input: Enter the array size: 10
   Enter 10 elements: 3 6 3 3 5 4 3 3 1 3

Output: Majority Element: 3

3. Given an array of integers of size n and an integer d, the task is to rotate the array elements to the left by d positions.
   Input: Enter the array size: 5
   Enter 5 elements: 3 6 1 8 5
   Enter the value of d: 2
   Output: Array before rotation: 3 6 1 8 5
   Array after rotation by 2 positions: 1 8 5 3 6
4. WAP to sort the elements of an array in descending order.
   Input: Enter the array size: 5
   Enter 5 elements: 3 6 1 8 5
   Output: Before sorting elements are: 3 6 1 8 5
   After sorting elements are: 8 6 5 3 1
5. WAP to print the leader elements of an array. An element of an array is a leader if it is greater than or equal to all the elements present after it.
   Input: Enter the array size: 10
   Enter 10 elements: 3 16 51 8 15 4 12 34 25 7
   Output: Leader Elements: 51 34 25
6. WAP to remove the duplicate elements present in the array.
   Input: Enter the array size: 10
   Enter 10 elements: 3 6 7 3 5 4 8 3 1 7
   Output: Initial Array: 3 6 7 3 5 4 8 3 1 7
   Array after removing duplicate elements: 3 6 7 5 4 8 1