Answer ONLY THREE Questions. Each Question takes 30 minutes.

Question: 1

Write an efficient C++ program to find the sum of contiguous subarray within a one-dimensional array of integer which returns the largest sum.

Explanation:Lets take the example of array {5,-3, 4}, Possible contiguous subarray combinations are {5}, {-3}, {4}, {5,-3}, {-3,4}, {5,-3,4}
The contiguous subarray {5,-3,4} has got the largest sum 6Input Constraints:

Question 2

Write a program that dynamically allocates an array large enough to hold a user- defined number of test scores. Once all the scores are entered, the array should be passed to a function that sorts them in ascending order. Another function should be called that calculates the average score. The program should display the sorted list of scores and averages with appropriate headings. Use pointer notation rather than array notation.
Input Validation: Do not accept negative numbers for test scores.

Question 3

Write a program that calculates the average number of days a company's employees are absent. The program should have the following functions:

- A function called by main that asks the user for the number of employees in the company. This value should be returned as an int. (The function accepts no arguments.)
- A function called by main that accepts one argument: the number of employees in the company. The function should ask the user to enter the number of days each employee missed during the past year. The total of these days should be returned as an int.
- A function called by main that takes two arguments: the number of employees in the company and the total number of days absent for all employees during the year. The function should return, as a double, the average number of days absent. (This function does not perform screen output and does not ask the user for input.)

  Input Validation: Do not accept a number less than 1 for the number of employees. Do not accept a negative number for the days any employee missed.

Question 4

A palindrome is any word, phrase, or sentence that reads the same forward and back-ward.
Here are some well-known palindromes:
Able was I, ere I saw Elba
A man, a plan, a canal, Panama
Desserts, I stressed
Kayak

Write a bool function that uses recursion to determine if a string argument is a palin-drome. The function should return true if the argument reads the same forward and backward. Demonstrate the function in a program.