ENT 189 COMPUTER PROGRAMMING

LAB-3 FUNCTIONS, ARRAYS AND POINTERS

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Name : _____

Matric Number : _____

Program : Mechatronic Engineering

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OBJECTIVE

At the end of this lab, students should reach the below objective:

Able to develop simple programs related to functions, arrays and pointers.

TASK 1

Develop a user defined function named ‘read_sides’ that obtains the three sides of a triangle from the user. Next, develop two user defined functions named ‘calc_perimeter’ and ‘calc_area’, respectively, to compute the perimeter and the area of the triangle. Finally, develop a user defined function named ‘display_triangle’ to display the perimeter and the area of the triangle. Call these functions suitably from your ‘main’ function to obtain the three sides of the triangle, to compute its perimeter and area, and to display the result.

TASK 2

The test mark obtained by ten students is shown below:

100 89 56 90 35 20 99 78 65 88

(a) Write a user defined function in C to read the above data into an integer type array. Name the function as ‘read_array’.
(b) Write a user defined function named ‘display_array’ that will display the integer data array on the monitor.
(c) Develop a function named ‘deter_mean’ that will take an integer array, compute and return the mean value of the data array.
(d) Incorporate the above functions into the ‘main’ function and display the mean value.

TASK 3

Write a program in C using user developed functions to compute the product of two matrices. Test your program with the following data:

$$A == \begin{bmatrix} 2.6 & 3.8 & 4.5 \\ 8.3 & 2.3 & 1.9 \end{bmatrix} \qquad B = \begin{bmatrix} 2.3 & 4.3 & 1.9 \\ 6.4 & 9.3 & 2.9 \\ 2.5 & 1.4 & 7.3 \end{bmatrix}$$