CL-1002
Programming Fundamentals
Lab # 12

Objectives:

- Practice and understanding on basic C++ programs
- Functions
- Pass by value
- Array as a function parameter

Note: Carefully read the following instructions (*Each instruction contains a weightage***)**

1. First think about statement problems and then write your program.
2. Write Program in C/C++ compiler/IDE and save source file **for each program.**
3. Do not copy from any source otherwise you will be penalized with negative marks.
4. Complete your lab **within given Time Slot**.
5. Add your source code in this word document + Make one ZIP file of your all source codes.
6. Please submit your **Both files** with this naming convention ROLLNO_SECTION_LABNO.
7. Submit your lab on Google Classroom.

Problem 1:

Write a C++ program that takes an integer as input from the user and uses a function to determine if it is a prime number or not. The function should take the integer as a parameter and return true if it is prime and false if it is not. The program should output whether or not the number is prime.

Problem 2:

Write a C++ program that takes two strings as input from the user and uses a function to concatenate them together. The function should take the two strings as parameters and return the concatenated string. The program should output the concatenated string.

Problem 3:

Write a C++ program that can determine the area of three different shapes, namely rectangular, circle, and square. The program should present a menu to the user to choose which shape they would like to calculate the area of. Once the user has made their selection and provided the necessary input, the program should invoke the relevant function to calculate the area and display the result. The program should consist of three functions, one for each shape, to perform the area calculation.

The program should continue to request input from the user and calculate the area until the user decides to exit the program.

Problem 4:

Write a C++ program that implement two functions max_in_array and min to find the largest and smallest elements of an integer array, respectively, with a void return type? The functions should take an integer array arr as a parameter, and the program should prompt the user to input the array elements. The implementation should output the largest and smallest elements of the array to the console.

Problem 5:

Write a C++ program that uses a function to calculate the average of an array of integers. The program should prompt the user to enter the size of the array and the elements of the array. It should then call the function, passing in the array and size as parameters, to compute the average of the elements. The function should take the array and size as parameters and return the average of the elements. Finally, the program should output the average of the elements to the console.

Note: the program should handle arrays of any size entered by the user.