CSE4102: Introduction to Computer Applications and Programming

LAB-05

Instructions:

- You are not allowed to use any syntax or functions not covered in the class till date.
- **Do not copy** code from online or another student.
- You have to solve the problems during the sessional class.

Problem 1: Fibonacci Series

Write a C program that generates the Fibonacci series up to a user-defined number using a do-while loop.

Problem 2: Prime Number Checker

Create a C program that checks if a user-defined number is prime. Use a for loop to test divisibility and a do-while loop to prompt the user for input until they provide a valid number.

Problem 3: Factorial Calculation

Implement a C program that calculates the factorial of a user-defined number using a for loop. Allow the user to repeat the calculation using a do-while loop.

Problem 4: Reverse a Number

Write a C program that reverses a user-defined integer using a do-while loop. Use a for loop to count the digits in the number before reversing it.

Problem 5: Pattern Printing

Create a C program that prints a pattern of stars in a right-angled triangle form based on user-defined height. Use a for loop for rows and a nested for loop for columns, then use a do-while loop to allow multiple executions.

Problem 6: Sum of Digits

Create a C program that calculates the sum of the digits of a user-defined positive integer.

Problem 7: Multiplication Table

Implement a C program that generates the multiplication table for a user-defined number using a for loop. Use a do-while loop to allow the user to generate tables for multiple numbers.

Problem 8: Armstrong Number

Create a C program that checks if a user-defined number is an Armstrong number. Use a for loop to compute the sum of the cubes of its digits and a do-while loop for repeated input.

An Armstrong number (or narcissistic number) for a three-digit number is a number that is equal to the sum of the cubes of its digits. For example, 153== 1^3 + 5^3 + 3^3.