Navrachana University

School of Engineering and Technology

Department of Computer Science and Engineering

Course: CS1008 Introduction to Computer Programming

Programming Assignment – 3

Date : 1st Nov 2021

Instructions

- Implement the given Questions using C programming language.
- Use meaningful and descriptive variable/identifier names:
  Good variable names (camelCase): rollNo, studentName, empSalary, salesPrice, taxRate,
  Every Program should have header and footer having following information in multi-line comments
  '''
  @author: RollNo Firstname Lastname
  @description: Program No. - write short purpose/ description here
  '''
- Every Program should be with output of the Program in multi-line comment after the code of respective program.

- **Submission details:** Submit your assignment on **lms.nuv.edu.in** before the given submission date. Create one **.ZIP file** containing **all C/C++ programs** (.c and .cpp files) and **one word file.** Keep filename as **RollNo-Name-Assignment1.zip**.
- Programs submitted by a student should be the result of individual work based on his/her own efforts. Full or part of the code should not be copied from internet or from peer students or other sources. A student should not share/circulate the code/programs developed by them (for individual assignments) with their peers in any form. Violation of above will be considered as academic dishonesty and any such case will be strictly dealt with and liable to get zero in the evaluation.

Aim: Implementation of Modular programming paradigm.

Modular programming is a concept in which entire program is divided into smaller snippets of code called functions which perform dedicated tasks when invoked by a main function. The power of C language lies in its capability of executing modular code. The students will learn to implement concepts of modular programming through function and recursion through this practical.

Requirements:

1) A desktop computer system

2) Code Blocks IDE

1	WAP in function with usage of an argument and no return value for print a simple message.
2	WAP to using UDF of type having No Argument but Returns a Value; to print Sum of two integers entered by user.
3	WAP to using UDF of type with Argument and No Return Values to calculate modulo of values entered by user.
4	WAP to find out the average of 5 number by use of User Defined Functions.
5	(a) WAP for User Define Function type No Arguments Passed and No Return Value to find out the weather number enter by user is Prime or not

	(b) WAP for User Define Function type No arguments passed but a return Value to find out the weather number enter by user is Prime or not (c) WAP for User Define Function Type Argument passed but no return Value to find out the weather number enter by user is Prime or not (d) WAP for User Define Function Type Argument passed and a return value to find out the weather number enter by user is Prime or not.
6	WAP to find square of given number using function with the use of function with an argument and a return value.
7	(a) WAP to find out the factorial of a given number by using a recursive function. (b) WAP to Print Natural Numbers using Recursion (c) Write a program in C to calculate the sum of numbers from 1 to n using recursion.
8	WAP to print the Fibonacci Series up to n terms using recursion. The value of n should be given by user.
9	WAP to find the GCD of two given integers by using the recursive function
10	WAP to check a given number is even or odd using the function
11	Write a C programming to find out maximum and minimum of some values using function which will return an array.
12	Write a program in C to check Armstrong and perfect numbers using the function.
13	WAP to find sum of n elements entered by user. For this program use calloc() function to allocate memory dynamically.
14	(a) Write a C program to use function to insert a sub-string in to given main string from a given position. (b) Write a C program that uses functions to delete n Characters from a given position in a given string.
15	WAP to perform the Swapping of two numbers using Function Call by Value and Call by Reference.
16	(a) WAP to demonstrate use of library function for finding the result of power of the number. (b) WAP to demonstrate use of library function for generating random numbers (c) WAP to demonstrate use of library function for square root of a number.
17	WAP to demonstrate local variable, global variable, register and static variable using related keywords.
18	WAP using function to read values of sides of triangle from user and display its perimeter or area based on user's choice. Formula for perimeter => p=a+b+c, where a, b and c are lengths of side of a triangle. Formula for area => a = $\sqrt{s(s-a)(s-b)(s-c)}$ here s = (a+b+c)/2.
19	WAP to demonstrate the basic operation of calculator using switch...case and functions.
20	WAP in C to read square matrix of order n, transpose it using user defined function and display transposed matrix from main() function.