National Institute of Technology Calicut
Department of Computer Science and Engineering
B. Tech. (CSE) – Third Semester

CS2092D: Programming Laboratory
Extra Questions

General Instructions

- Programs should be written in C language and compiled using C compiler in Linux platform.
- Invalid input should be detected and suitable error messages should be generated.
- Sample inputs are just indicative.
- The extra questions do not come under the purview of evaluation scheme.

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Part – A: Conditional and Iterative concepts

1. Write a program to create a Simple Calculator. The calculator performs the operations of addition, subtraction, multiplication, and division of two given numbers based on the choice of the user. [Choice = + performs Addition, Choice = - performs Subtraction, Choice = * performs Multiplication, and Choice = / performs Division] (Output should be rounded off to 3 decimal points)

   Input
   Enter Choice: +
   Enter Numbers: 2 3
   Output: 5

   Input
   Enter Choice: -
   Enter Numbers: 2 -3
   Output: -1

   Input
   Enter Choice: *
   Enter Numbers: 2 3
   Output: 6

   Input
   Enter Choice: /
   Enter Numbers: 2 -3
   Output: 0.667

2. Write a program to find the power of a given number without using the pow() function defined under math.h
   Input: Base = 2 and Exponent = 5
   Output: $2^5 = 32$

3. Write a program to find the GCD (Greatest Common Divisor) of two integers. The GCD of two integers is the largest integer that can exactly divide both numbers without a remainder.
   Input: Enter two integers: 81 and 153
   Output: GCD = 9

4. Write a program to count the frequency of digits in an integer
   Input: 116540
   Output: Frequency of 0 = 1
   Frequency of 1 = 2
   Frequency of 4 = 1
   Frequency of 5 = 1
   Frequency of 6 = 1

5. Write a program to find the sum of the series [$x - x^3 + x^5 - ...$]
   Input:
   Enter the value of x: 2
   Enter the number of terms: 5
   Output: Sum = 410