National University of Computer and Emerging Sciences



Lab Manual 05

Programming Fundamentals

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| Section | F |
| Semester | Fall 2020 |

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## Lab Submission:

* Create a folder, rename it with your Roll Number
* Copy your .cpp files only in that folder (not the whole visual studio project)
* Zip your folder
* Submit the zip file
* Try submitting your folder with in time.

## Objectives

After performing this lab, students shall be able to:

* Understand the concept of for and while loop
* Understand and implement of switch statement.

Bonus marks will be awarded to the students who complete the following tasks with both for and while loop

**TASK 1:**

Write a C++ program to input number from user and check whether the number is even or odd using switch case.

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| **Example**:  **Input**  Input number: 12  **Output**  Even number |

**TASK 2:**

Write a program in C++ to find the frequency of each digit in a given integer.

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| **Sample Output:** Input any number: 122345 The frequency of 0 = 0 The frequency of 1 = 1 The frequency of 2 = 2 The frequency of 3 = 1 The frequency of 4 = 1 The frequency of 5 = 1 The frequency of 6 = 0 The frequency of 7 = 0 The frequency of 8 = 0 The frequency of 9 = 0 |

**TASK 3:**

**Write a program in C++ to find the sum of digits of a given number**

**Example**:

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| **Input:**  Please enter a number: 1234  **Output:**  The sum of digits of 1234 is: 10 |

**TASK 4:**

Write a program in C++ using to display the cube of the number up to given an integer.

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| **Sample Output:**  Input the number of terms: 5  Number is: 1 and the cube of 1 is: 1  Number is: 2 and the cube of 1 is: 8  Number is: 3 and the cube of 1 is: 27  Number is: 4 and the cube of 1 is: 64  Number is: 5 and the cube of 1 is: 125 |

**TASK 5:**

Create a Calculator using the switch Statement

**Example**:

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| Enter an operator (+, -, \*, /): /  Enter two numbers:  2.3  4.5  2.3 / 4.5 = 0.511111 |

**TASK 6:**

Write a program in C++ to find the factorial of a number.

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| Sample output: Input a number to find the factorial: 5 The factorial of the given number is: 120 |

**TASK 7:**

Write a program in C++ to find the sum of the series 1 + 1/2^2 + 1/3^3 + ..+ 1/n^n.

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| Sample Output: Input the value for nth term: 5 1/1^1 = 1 1/2^2 = 0.25 1/3^3 = 0.037037 1/4^4 = 0.00390625 1/5^5 = 0.00032 The sum of the above series is: 1.29126 |

For taking power, 2 steps are required in the code:

* Import the library by

#include <cmath>

* Syntax for power:

pow (base, exponent);

**TASK 8:**

Write a program in C++ to asked user to input positive integers to process count, maximum, minimum, and average or terminate the process with -1.

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| Sample Output: Your input is for termination. Here is the result below: Number of inputs is: 4 The maximum value is: 9 The minimum value is: 3 The average is 6.00 |