CL-1002
Programming Fundamentals - Lab
Lab # 3

Objectives:

- Introduction to procedural flow.
- Exhibit the understanding of pseudocode/algorithms.
- Introduction to sequential statements
- Introduction to conditional statements
- Introduction to iterations

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

1. Use proper **font family** and **font size** of **heading**, **sub heading** and **normal text**.
2. First think about statement problem then write/draw your logic on copy.
3. Write pseudocode of every task on **paper (hard form)**.
4. File tittle should in proper format (**23F-1001-Lab2**)
5. Do not copy from any source otherwise you will be penalized with negative marks.
6. Complete your lab **within given Time Slot**.

Problem: Create flowchart diagram and write pseudocode/algorithm of the given problems.

1. J. announced some discount (flat 50%) on all its outlets. Take the original price of product from user, calculate the discounted price of one product. **(Marks 01)**
   Hint: original price * discount / 100.

2. A hostelite student wants to calculate his/her average bill of the year. Take 12 inputs (bill amount) from that student and show his/her average. **(Marks 01)**
   Hint: average = sum of bill/total months

3. A programming fundamental – lab consists of 10 tasks. Each task carries 5 marks. If a student solved more than 8 tasks then instructor gives him/her some extra points (5 marks additional for each task). Create a program, that asks student how many tasks he/she has solved and calculate marks.

Hint: 8*5 = 40. If extra 10 + 10 = 60 **(Marks 01)**

4. Write a program to take weather and determine the condition of weather on the following conditions: **(Marks 01)**
   - Weather is greater than 45, Sunny
   - Weather is greater than 20, Rainy
   - Weather is less than or equal to 20, Fog
   - Otherwise, False input

5. Write pseudocode to check whether a character is Vowel or Consonant. (using AND,OR operator) **(Marks 01)**

6. Write a program that take base and power from user and calculate power (like base=4, pow=3 , output: 64) **(Marks 02)**

7. Write a program that calculate the division of two numbers without using division(/) symbol. **(Marks 02)**

8. Write a code that take/input a number. And display all prime numbers till that numbers.
   Hint: number = 13. Then output should be 2,3,5,7,11,13 **(Marks 02)**

9. Write a program to find sum of the series (1 + 11 + 111 + 1111 …. N terms). Where N is input. **(Marks 03)**

10. Write a program that display the sum of the following series:
    $(x + x^2 + x^3)$ where x is the input **(Marks 03)**

Best of Luck ☺

"First solve the Problem, then write the code"