



**CL-1002**  
**Programming Fundamentals**  
**Lab # 2,3**

Objectives:

- Practice on pseudocode and flowchart (Decision & Loops Structure)

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

1. First think about statement problems and then write your logic on Copy / Notebook.
2. Write pseudocode in handwritten on **Paper using Pen.**
3. Write **Your Name** and **Roll No** on your Paper/Sheet's first page.
4. *Do not copy from any source otherwise you will be penalized with negative marks.*
5. Complete your lab **within given Time Slot.**
6. **Total Points 15.**

**Problem:** Write pseudocode and flowchart of each programs.

**Decision Structure**

1. Write the pseudo code and draw flowchart to check of an entered number of even or odd.
2. Write the pseudo code and flow chart of a program that finds the greatest of three number.
3. If the three sides of a triangle are entered through the keyboard, write pseudo code to check whether the triangle is valid or not. The triangle is valid if the sum of two sides is greater than the largest of the three sides.
4. Write a pseudocode to check whether a character is an alphabet, digit or special character.
5. Write a program for Electricity Bill Statement (EBS). The EBS takes units consumed from consumer and calculates; Electricity Charges (EC) using provided criteria: 001 – 100 units @ Rs. 2.00/- (per unit) 100 – 200 units @ Rs. 3.50/- (per unit) 200 and more units @ Rs. 4.50/- (per unit) General sale tax which is the 10% of the EC. Amount due (EC + Gen. sale tax)
6. Write a program in which user enter his NTS and Fsc marks and your program will help student in selection of university.

Based on these marks Student will be allocated a seat at different department of different university



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University Name Departments Criteria

Oxford University IT Above 70% in Fsc. and 70 % in NTS

Electronics Engr: Above 70% in Fsc. and 60 % in NTS

Telecommunication Above 70% in Fsc. and 50 % in NTS

MIT IT 70% -60 % in Fsc. and 50 % in NTS

Chemical Engr: 59% – 50 % in Fsc. and 50 % in NTS

Computer Engr: Above 40% and below 50 % in Fsc. and  
50 % in NTS

Note: Use Nested if structure to solve the problem. Don't use logical operators.

Violation of this condition will result in zero marks.

7. Write a program that will display if a student is pass or not in his exam.  
(50% or more is pass). If the student is Pass than your program should display  
which letter the student has obtained.
- 85% or more E for excellent
  - 75% or more but less than 85% O for Outstanding
  - 65% or more but less than 75% G for good
  - Less than 65% S for satisfactory
- If however the student is Fail (below 50% marks) your program should display  
whether the student should Resit or Redo depending on the following criteria.
- 33% or more Resit in exam
  - Less than 33% Redo course



## Loop Structure

1. Write pseudocode to print your name 15 times using loop.
2. Write pseudocode to print all Even numbers between the range of positive integers 10-100.
3. Write pseudocode to print first 'n' Even numbers where 'n' is entered by the user.
4. Write pseudocode to print the table of a given number where number is entered by the user, and starting and ending limit should also get from user.
5. Write pseudocode to that take one positive integer 'n' from user and check whether its prime numbers OR Not.
6. Write pseudocode to reverse a number given by user. i.e. **Input = 12345 Output = 54321**
7. Write a pseudocode to print factorial of a given number.
8. Write pseudocode to check whether the number is palindrome OR not. A palindromic number is a number (such as 16461) that remains the same when its digits are reversed.

Best of Luck 😊

**You need to done with your exercise within given time.**