CL-1002
Programming Fundamentals
Lab # 3

Objectives:

1. Understanding IDE.
2. Practicing Basic Programming using if, else-if and nested if.

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

1. First think about statement problems and then write your program.
2. Write Program in C compiler/IDE and save source file **for each program.**
3. Do not copy from any source otherwise you will be penalized with negative marks.
4. Complete your lab **within given Time Slot**.
5. Add your source code in this word document (take screen shot) + Make one ZIP file of your all source codes.
6. Please submit your **Both files** with this naming convention ROLLNO_SECTION_LABNO.
7. Submit your lab on Google Classroom.

Find the OUTPUT of the following code.

```
#include <iostream>
using namespace std;

int main() {

int a;
cout<<"Enter an integer:";
cin>>a;
if (a < 0)
       {
       cout<<"Negative Number";
       }
    return 0;
}
```

Exercise

1. **Write a C++ code that take Grade from user and show his performance:**

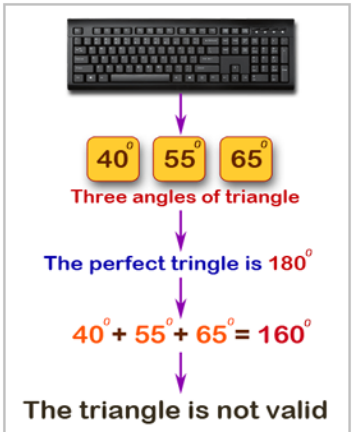
Grade	Performance
A	Excellent
B	Very Good
C	Good
D	Average
F	Try Again

2. **Write a C++ code that take three integers from user and check whether these are equal or not (i.e. a=16, b=16, c=16 –> output: Numbers are Equal)using nested loop.**
3. **Write a C++ code that take a day number in integer and display the day name in the word (0-Monday, 1-Tuesday, 2-Wednesday, 3-Thursday, 4-Friday, 5-Saturday, 6-Sunday), if user enters 3 then output will Thursday.**
4. **Write a C++ program to check whether a character is an alphabet, digit or special character. (Hint: characters are a-z and A-Z, Numbers are 0-9)**
5. **Write a C++ program to check whether a triangle is Equilateral, Isosceles or Scalene**. (If none of the sides of a triangle are equal (of equal length), the triangle is scalene. If two or more of the triangles' sides are equal, the triangle is isosceles. If all three of the sides of a triangle are equal, it is equilateral.)
6. **Write a C++ program that accept angle from user and determines quadrant the quadrant lie:**
   (0-90 -> 1st Quadrant,
   91-180 -> 2nd Quadrant,
   181-270 -> 3rd Quadrant,
   271-360 -> 4th Quadrant)
   i.e., Input (input=25, then it is in first Quadrant)

7. **Write a C++ program to check whether a given triangle can be formed by the given values for the angle.**

   (The sum of angles are 180.

   Input – 40,60,50 -> output The triangle is not valid)



Draw flowcharts of following questions on page

1. Write pseudocode to check whether a character is Vowel or Consonant. (using AND,OR operator)
2. Write pseudocode to read the age and nationality of a candidate and determine whether it is eligible for casting his/her own vote or not. Only Pakistan national and 18 above can cast their vote.
3. Write pseudocode that calculate the factorial user define number
4. Write a program that take base and power from user and calculate power (like base=3, pow=2 , output: 9)
5. Write a program that calculate the multiplication of two numbers without using multiply symbol.
6. Write a program that display the sum of the following series:

   $(x + x^2 + x^3)$ where x is the input
7. Write a program that take number from user and check whether it is prime or not.
8. Write a program to find sum of the series (1 + 11 + 111 + 1111 …. N terms). Where N is input.

Best of Luck ☺