National University of Computer and Emerging Sciences, Lahore Campus

Course:	Programming Fundamentals	Course Code:	CS 118
Program:	BS(Computer Science)	Semester:	Fall 2020
Date	04-11-2021	Due Date	05-11-2021…
Section:	BDS-1A, BDS-1C	Weight	2%

Assignment No 1

Two programs a day
will help you polish your programming skills

Submission Instruction: For each problem a due date is specified. Your solutions will be submitted on google classroom using the proper assignment submission link available at the classroom.

Warning: As discussed in class, plagiarism is not acceptable in any form. Although you are encouraged to discuss the assignment problems and possible solution with your class fellows but sharing your code or copy code from others will result in 100% negative penalty and such a case might be referred to the DC committee

Suggestion(s): You can always use google to learn more about any problem if needed.

Problem 1: Pythagorean Triples
DUE DATE: 5/10/2021 Before 11:59 pm

In this problem we will consider right triangle with integer side lengths. A set of three integer values for the sides of a right triangle is called a Pythagorean triple. These three sides must satisfy the relationship that the sum of the squares of two of the sides is equal to the square of the third side also called the hypotenuse of the triangle.

Write a program that will ask the user to enter lengths of the three sides of a triangle in any order and then print Pythagorean if the three sides form a right triangle and print Not Pythagorean otherwise.

Problem 2: Print using a single cout statement
DUE DATE: 5/10/2021 Before 11:59 pm

Write a programs in C++ that uses a single cout statement to print the following pattern.

Problem 3: Factorial 1-10
DUE DATE: 6/10/2021 Before 11:59 pm

The factorial of a positive integer n is defined as n! = n*(n-1)*(n-2)*…*2*1. So the factorial of n is the product of all numbers between n and 1 inclusive.

The following table list the factorial of all numbers between 1 and 10.

Number	**Factorial**	**Number**	**Factorial**
1	1	6	720
2	2	7	5040
3	6	8	40320
4	24	9	362880
5	120	10	3628800

Use the information given in the above table to write a program that ask the user to specify a number in within the limits (i.e. 1-10) and then show the factorial of the number.

Please remember that you are only allowed to use only use a simple **if** statements **without else** part and that the return statement must be used only once at the end of the main function

Problem 4: Number of Leap years between two given Years of a Georgian calendar
DUE DATE: 6/10/2021 Before 11:59 pm

In this problem you are required to create a program to compute number of leap years between two given years. Remember that you are not allowed to use loops in your program.