Lab Assignment #1

Due Date: **Thursday 27th Sept., 2018 before 2.30pm** **Marks/Weightage: 30/10%**

Purpose: The purpose of this Lab assignment is to:

- Practice the use of advance methods concepts in C#

References: Read the course's text book "Visual C# 2017, Intro to Object Oriented Programming", **Chapter 08** and the lecture notes/ppts. This material provides the necessary information that you need to complete the exercises.

Instructions: Be sure to read the following general instructions carefully:

This lab should be completed individually by all the students. You will have to demonstrate your solution in a scheduled lab session and submitting the project **through drop box link on e-Centennial**. You must name your Visual Studio solution according to the following rule:
FirstName-lastName_SectionNumber_COMP123_LabAssignmentNumber
For Example: **John-Smith_Sec002_COMP123_Lab01**

Each exercise should be added to the solution as separate project. Your IDE is Visual Studio 2017 and C#.

Submit your assignment in a **zip file** that is named according to the following rule:
FirstName-lastName_SectionNumber_COMP123_LabAssignmentNumber.zip
Example: **John-Smith_Sec002_COMP123_Lab01.zip**

Apply the naming conventions for variables, methods, classes, and namespaces:
- *variable names* start with a *lowercase* character for the first word and uppercase for every other word
- *classes* start with an *uppercase* character of every word
- namespaces use only *lowercase* characters
- *methods* start with a *uppercase* character for the first word and uppercase for every other word

Exercise 1: *[10 marks]*

Write an app which contains the following two overloaded functions:

a) private static int **Maximum**(int, int) which returns the largest of two numbers
b) private static int **Maximum**(int, int, int) which returns the largest of three numbers
c) private static int **Square**(int) which returns square of an integer value
d) private static double **Square**(double) which returns square of a double value

Exercise 2: *[10 marks]*

Write an app which contains the following function which makes use of variable number of arguments by use of **params** keyword:

a) private static int **Addition**(params int[] numbers) which returns the sum of three different numbers , four different numbers and five different numbers. So you need to call this method in the Main() according to above requirements.

b) private static void **DisplayNames**(params string[] names) which prints the one or two or three or four strings passed to it. Since it is of type params, you can pass any number of strings/names and it should be able to display it. So you need to call this method in the Main() according to above requirements.

Exercise 3: *[10 marks]*

Write an app which contains the following functions which make use of **ref** and **out** parameters:

a) private static void **Swap**(ref int, ref int) which exchanges the contents of two variables
b) private static void **Initialize**(out int, out int) which initializes two numbers and then you need to find their average in Main() and print the result.

Evaluation:

Functionality	
Correct implementation of classes (instance variable declarations, constructors, getter and setter methods etc.)	70%
Correct implementation of driver classes (declaring and creating objects, calling their methods, interacting with user, displaying results)	20%
Comments, correct naming of variables, methods, classes, etc.	5%
Friendly input/output	5%
Total	100%