**Lab Assignment #1**

**Due Date: Week 02 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# 2015, 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: **Joh-Smith\_Sec003\_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: **JohSmith\_Sec003\_COMP228\_Lab01.zip** *(if your section is 004.. and then have Sec004)*

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:

1. private static int **Maximum**(int, int) which returns the largest of two numbers
2. private static int **Maximum**(int, int, int) which returns the largest of three numbers

## 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:

1. 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.

## Exercise 3: *[10 marks]*

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

1. private static void **Swap**(ref int, ref int) which exchanges the contents of two variables
2. 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% |