Lab Assignment #1

Due Date: **Mid-night (11.59 pm) Sunday 6th June, end of Week03** **Marks/Weightage: 30/5.0%**
End Date: **Mid-night (11.59 pm) Sunday 13th June end of Week04 with 25% deduction/panelity. After this date, it will not be accepted. NO EXCEPTIONS.**

Purpose: The purpose of this Lab assignment is to:

- Practice the use of Functions, Arrays, Dictionaries, Closures, Generics etc. in Swift

References: Read the course study material, code examples, lab exercises covered in the class. 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 assignment in a scheduled lab session and also submitting the assignment **on Blackboard on or before the due date.**

You must name your Xcode project/playground file according to the following rule:
FirstName-LastName_CourseCode-SectionNumber_LabNumber

For Example: John-Smith_COMP2125-Sec001_Lab01 (if your section is 001)

Zip the above folder and submit/upload your assignment using the Assignment 01 link in **Blackboard.**

Note: You are required to be present (online) during the in-class demonstration. Late submission will not be considered. Your IDE will be Xcode (version 12.x or higher) and Swift 5.0/6.0

Exercise 01: *[5 marks]*

Do the following using Xcode project:
Write a generic function – **func swap<T>(num1: T, num2: T)** which should be able to swap the contents of any two variables. Demonstrate it by passing integers, doubles and string types of variables.

Exercise 02: *[5 marks]*

Define a function – **func SumAvgArray(values: [Int]) -> (Int, Double)** which calculates the sum and average of an integer array and return – sum and average (two values) as tuple. Complete it either as playground or project.

Exercise 03: *[15 marks]*

Do the following using Xcode playground:
You are given following dictionary:

```
// Key as string and value as an array
let tempReadings = [
   "Monday" : [12, 25, 10], // name : Array of values representing the temperature during morning, day and evening
   "Tuesday" : [2, 15, 9],
   "Wednesday" : [11, 29, 22],
   "Thursday" : [7, 11, 9],
  “Friday” : [ 16, 22, 20]
]
```

Calculate the following:

a) Average temperature for each day
b) Average temperature for the week
c) Highest temperature for each day

Exercise 4: *[5 marks]*

Do the following using Xcode playground:
You are given an array - stockValues = [30.50, 10.25, 60.75, 100.25, 45.45, 89.60, 20.50, 55.55, 90.0, 70.0]
Write two functions – one is - ModifyStockValues() which increase the each value by 10.00 in the above array. You need to pass the array to the function using reference.
Second is ModifyStockElement() which is used to change the value of any single data value (in the stockValues array) by passing it as reference to the method.
After updating the values, then you need to display these values.
*[Note: you need to make use of **inout**]*

Evaluation:

Functionality	
Correct implementation of code logic as per business/functional requirements	70%
Correct use and testing of all the functionalities developed	20%
Comments, correct naming of variables, methods etc.	5%
User Friendly input/output	5%
Total	100%