Rajarata University of Sri Lanka
Faculty of Management Studies, Mihintale

2018, B.Sc. (Business Information Technology) Special Degree

ITM 2133 - Introduction to Programming
Special Assignment

Due Date: 14.07.2021
No. of Questions: 11
No. of Pages: 02

Instructions:

- Answer all questions.
- It is highly recommended that you read all the questions carefully before starting coding.
- Submit only the Java source code in the location provided in the LMS.

1. Declare a class named *MGTXXXX* where the *XXXX* denotes four digits of your index number (e.g. the class name is *MGT8756* if your index number is *MGT/8756*).

   [04 Marks]

2. Create an array called *scores* that can store five (05) whole numbers between 0 and 100.

   [06 Marks]

3. Fill in the *scores* array with five positive integers taken as the input form command line argument.

   [12 Marks]

4. Write a Java code to find the average of the marks in the *scores* array.

   [10 Marks]

5. Create another array called *weights* and initialize it with value set 1.2, 0.8, 1.5, 1.3, and 1.1 by preserving the given order.

   [10 Marks]

6. Implement a logic to find the weighted average of marks in *scores* array by considering the weights in *weights* array.

   [14 Marks]

7. Write a static method that returns the maximum value in a given array.

   [14 Marks]

8. Find the maximum mark in *scores* array with the aid of method written in question seven.

   [06 Marks]

9. Write a non-static method to classify the competency level of student according to the instruction below.

Average Score	Competency Level
85 to 100	Very good
65 to 85	Good
40 to 65	Average
0 to 40	weak

[14 Marks]

10. Find the competency level of a given student with the aid of method written in question nine by parsing the average marks as the argument.

[06 Marks]

11. Indicate your index number, academic year and coding date at the top of the code.

[04 Marks]
[Total 100 Marks]

Note:
The average of set of values can be found using following formula.

$$A = \frac{1}{n}\sum_{i=1}^{n} a_i$$

Where;
 $A = average$
 $n = number\ of\ values$
 $a_i = data\ set\ values$

The weighted average can be found using following formula.

$$W = \frac{\sum_{i=1}^{n} w_i X_i}{\sum_{i=1}^{n} w_i}$$

Where;
 $W = weighted\ average$
 $n = number\ of\ terms\ to\ be\ averaged$
 $w_i = weights\ applied\ to\ X\ values$
 $X_i = data\ values\ to\ be\ averaged$