CSC2123: OBJECT ORIENTED PROGRAMMING (PRACTICAL)

1. Create a Java program to calculate the area of a square. There should be a separate method called "**area**" to calculate the area of the square. The length of the square needs to be read from the keyboard.

2. Write a Java program that will help an elementary school student to learn about arithmetic multiplication. The program specifications are given below.
    - Generate two integers numbers (x, y) using a **Random** object.
    - Prompt the user with a question such a "how much is x times y".
    - Student inputs the answer and the program should check the answer given by the student.
    - If the answer is correct, display the message "**Excellent**" and ask another multiplication question.
    - If the answer if not correct, display the message "**Wrong Answer. Try again**" and let the student to try the same question until the correct answer is provided.
    - A separate method should be used to generate each new question. This method should be called once the application begins its execution and each time the user answers the questions correctly.

3. Write a java program to create a calculator to calculate **BMI (Body Mass Index)** value of a person. You have to use required GUI components for this. There should be a non-static method in **BMICalculator** class, which takes weight in kilograms and height in centimeters as input parameters and calculates the BMI value according to the following equation.

    $$\textbf{BMI} = \textbf{weight}/(\textbf{height} * 0.01)^2$$

4. Assume that there are two integer arrays as follows.

   int [] A = {18, 12, 14, 33, 20, 72, 21}

   int [] B = {3, 6, 7, 11, 5, 8, 3}

   - Create a class that contains the above two arrays as attributes.
   - Create a method in class to perform the following operation for each elements of array A (**method 1**).

     A[i] = A[i]/B[i]

   - Create another method in class to print all the values of the array A (**method 2**).
   - Call above **two methods** in two different thread classes.