Object oriented programming using JAVA - LAB

Assignment 1

Topic: Simple Java Programs.

Sl. No.	Question
1.	Write a java program that will display "This is my first Java Program".
2.	Write a java program that will print your name 10 times. (Hints: Use for Loop)
3.	Write a Java program to test the number is prime or composite.
4.	Write a java program that will take input as two +ve integers M and N where M<N. a). The program will display the numbers between M and N, which are divisible by 3 and 5. b). Count the numbers which are divisible by 3 and 5(between M and N), then add those numbers and display.
5.	Write a java program that will count the number of primes between 37 and 129.
6.	Write a java program that will compute GCD of two numbers.
7.	Write a Java program that will evaluate the following exponential series. $$1 + x + \frac{x^2}{2!} + \frac{x^3}{3!} + \frac{x^4}{4!} + \ \dots \dots \dots \dots$$
8.	Write a method that takes a number between 0 and 9 as an argument and prints on the screen "Number green bottles standing on the wall" (where Number is replaced by the word version of the number). If the numeric parameter is 1 then your method should print bottle rather than bottles.
9.	If one looks at the square numbers and the differences between each adjacent pair of square numbers a pattern emerges. squares: 0 1 4 9 16 25 36 49… differences: 1 3 5 7 9 11 13… Write a program to print out the square numbers, ten in a line, *without* using multiplication operator.
10*.	The body mass index (BMI) of a person is defined as the ratio of body mass in kilograms to the square of body height in meter. For example, a person of 1.8m tall with weight 55kg has BMI $55/(1.8)^2$ = 16.975308641975307. A person with BMI between 20 and 25 is considered to have a healthy amount of body fat. A person with BMI of less than 20 is regarded as underweight, and one with a BMI of more than 25 is regarded as overweight. Write a program to calculate the body mass index (BMI) of the user. Ask the user for their height and their mass. Allow the user to enter both in inches and meters, and both in pounds and kilograms. Also output the meaning of the BMI. Note that 1kg = 2.2046lb, and 1inch = 0.0254 meter. **Sample input/output:** What is your weight? **55** In lb or kg? (1=lb, 2=kg) **2** What is your height? **1.8** In in or m? (1=in, 2=m) **2** Your BMI is 16.975308641975307 You are underweight.
11*.	Write a method called ***absDiff***, which takes two integers as parameters and returns the absolute value of the difference between the two integers. Using the method ***absDiff*** write a method called ***intRoot***, which takes an integer as a parameter and returns the integer value closest to the square root of the parameter. Given a sequence where the ith term is the closest integer to the square root of i, write a method called ***printSequence***, which takes an

	integer n as a parameter and prints on the screen the first n integers in the sequence, ten in a line. You may use previously written and inbuilt methods. So *printSequence*(10) would print on the screen: 1 1 2 2 2 2 3 3 3 3
12*.	Write a method *smallestFactor* that accept an integer argument, and return the smallest factor larger than 1 of this number. It should return the argument itself if it is a prime or it is 1, and return 0 if it is not positive. By calling the method *smallestFactor*, write the main method of a program that read a number from the user and completely factorize it.

*: Optional