**LAB 2**

**Exercises in Java basics and Essential Classes – 10 points**

**Instructions:**

1. After downloading the lab assignment from Blackboard, please write the appropriate Java programs in BlueJ IDE.
2. If stuck anywhere, the instructor and the lab assistant are always there to help.
3. Lab assignments need to be uploaded onto Blackboard by the due date listed on Blackboard.
4. You would need to submit a .docx file. Copy-paste the written code and a sample run of the program.
5. Online resources can ‘definitely’ be consulted. However, please refrain from using content from the internet as-is. The mark of a good programmer is to write clean and genuine code – anytime, anywhere, and always.

Short:

1. Write a program that prompts the user to enter a weight in pounds and height in inches and displays the BMI. Note that one pound is 0.45359237 kilograms, and one inch is 0.0254 meters. **(1 point)**

*Key Point:*

BMI is calculated by taking your weight in kilograms and dividing it by the square of your height in meters.

1. Write a program to print ‘HiFive’ if the number inputted on the console is a multiple of 5. Similarly, the program should print ‘HiEven’ if the number is even. For a multiple of both 2 and 5, print both ‘HiFive’ and ‘HiEven’. Otherwise, it should just print ‘Hi’. **(1 point)**

*Key Point:*

Familiarity with ‘switch’ and ‘if-else’ statements.

1. Check if a year inputted on the console is a leap year. **(1 point)**

*Key Points:*

Logical Operators.

In the Gregorian calendar three criteria must be taken into account to identify leap years:

* The year can be evenly divided by 4;
* If the year can be evenly divided by 100, it is NOT a leap year, unless;
* The year is also evenly divisible by 400. Then it is a leap year.

Long:

1. Write a program to help a first grader familiarize with addition, subtraction, and multiplication. Your program should randomly generate two number and display it on the console. The first grader enters the answers for addition, subtraction, and multiplication. Once the Enter key is hit, the program should display whether the computed answers by the student were correct. **(3 points)**
2. Convert a hexadecimal number inputted onto the console in the format ‘0x0000’ to its’ decimal equivalence.

*Key Point:* **(4 points)**

Maybe you would want to handle every inputted character of the hex number individually.

Note: Do not use Integer.ParseInt()