# CS 372: Java Application Development – HW1

## MY NAME: DUE: Fri, Jan 4 Received: \_ .

**GRADE:**

|  |  |  |
| --- | --- | --- |
| **PROGRAM** | **POINTS** |  |
| EX1\_1: Odd or Even |  | 15 |
| EX1\_2: Area of Circle |  | 15 |
| EX1\_3: Integer value of a Character |  | 15 |
| EX1\_4: Body Mass Index |  | 25 |
| EX1\_5: Employee Class |  | 15 |
| EX1\_6: Date Class |  | 15 |
| **TOTAL** |  | 100 |

***Homework should be stored in your GitHub account***

**EX1\_1: Odd or Even**

Write a Java program that asks the user for a number between 10 and 100, then outputs that many numbers and whether they are even or odd.

**EX1\_2: Area of a Circle**:

Write a Java program that asks the user for the radius of a circle. The program will then display the area of the circle. Recall that the area of the circle is calculated with the formula:

*Area = πr2*

Create a constant (with keyword **final**) variable called **PI**, assign it a value 3.14, and use it in your calculations.

**EX1\_3: String to integer**

Write a Java program that asks the user for a number. Store that input into a string. If the input starts with a number, convert the string into an integer. If not, tell the user that they did not input a number. **Note**: write your own algorithm to convert from string to int. Do not use the Java library function.

**EX1\_4: Body Mass Index**

The Body-Mass Index formula is **BMI = kg/m2**, where **kg** is the weight in kilograms, and **m** is the height in meters. Write a Java program that asks the user for their weight in pounds and their height in inches, then converts those values to metric, and finally outputs their BMI.

**EX1\_5: Employee Class**

Design a class to manage employees at a company. An Employee has a unique ID, a name, a hire date, their current position at the company, and who they report to. Give the UML for your class.

**EX1\_6: Date Class**

Design a class to support Date objects (day, month, year). Your date class should be smart (e.g. I should not be able to create a date for the 31st of February). In addition to get/set functions, your class should be able to return today’s Date (static function), calculate the difference (in days) between two date objects, and create a new date *n* days in the future of the current date object.