GEDİZ UNIVERSITY

Faculty of Engineering and Architecture

Computer Engineering Department

COM 102 – OBJECT ORIENTED PROGRAMMING

POSTLAB #1

Academic Year: Spring 2016
Due Date and Hour: March 14,2016 - Monday, 11:59 pm (Submission)
Course Instructor: Assoc. Prof. Dr. I. Furkan INCE
Course Assistant: Res. Asst. Arzum KARATAŞ & Res. Asst. Feyza GALIP

1- Create a Java Program (70 points)

Create a class called "Position" that includes two instance variables – *x* (type int), and *y* (type int) where x and y representing coordinates of a point on a 2-D space. **(5 points)**

Then, do the following tasks.

- Write a constructor that initializes a point at the origin (0, 0). **(5 points)**
- Write a constructor that initializes a point for the given x and y values **(5 points)**
- Write a *set* and get *method* for each instance variable. **(10 points)**
- Write a moveXBy(int) method that increases the value of instance variable x as given parameter value. **(5 points)**
- Write a moveYBy(int) method that increases the value of instance variable y as given parameter value. **(5 points)**
- Write a calculateDistanceToOrigin method that calculates the distance from the current position of the object to the origin. **(10 points)**
- Write a showDistanceToOrigin method that shows the distance value from the current position of the object to the origin. **(5 points)**
- Write a method displayLocation that displays x and y coordinates separated by colon (:). **(5 points)**
- Write a test application named PositionTest that demonstrates class Position's capabilities. **(15 points)**

2- CORRECT THE CODE (6 x 5p = 30 points)

```
public class car {

    public String model;
    private double year;
```

```
    private int speed;
    private int distance;

    public void Go (int newDistance){
        distance += newDistance;
    }

    public int accelerate (int newSpeed) {
        speed = newSpeed;
    }

    public void stop () {
        speed = 0.1;
    }

    public String getInfo () {
        return "Car Info: " + year + " " + model + ". Distance:" + distance
+ " km. and traveling at " + speed," kmph.";
    }

    /* GETTERS & SETTERS */
    public String getModel() {
          return model;
    }

    public void setModel(String model) {
          this.model = model;
    }

    public int getYear() {
          return year;
    }

    public void setYear(int year) {
          this.year = year;
    }

    public int getSpeed() {
          return speed;
    }

    public void setSpeed(int speed) {
          this.speed = speed;
    }

    public int getDistance() {
          return distance;
    }

    public void setDistance(int distance) {
          this.distance = distance;
    }

}
```

Good Luck.

NOTES & SUBMISSION RULES :

1. You are **required to add comment properly**.

2. You are **strongly advised** to obey the good programming practices (like naming conventions, indentations, commenting your codes and so on.) Using good programming practices is graded.

3. You are **required** to send your source code within a zipped file named :
   COM102_ StudentNumber_YourName_PostLabX.zip
   (e.g., COM102_011XXXX_ArzumKarataş_PostLab1.zip
   COM102_011XXXX_FeyzaGalip_PostLab1.zip)

4. **Be sure whether you attached your work to the e-mail or not**, because it is your responsibility to sending the work on time and in proper format.

5. You are required to **work alone**. Teamwork is **NOT** allowed and **cheating is strictly punished**!

6. You should **submit** your homework to the address following by **e-mail** on time.
   (to com102.2016gediz@gmail.com)

7. **Late submissions** will be graded by using the formula **100 - 10*d^2** where **d** is the number of **late** submission **days**.