INSY 4305 ADVANCED APPLICATION DEVELOPMENT

ASSINGMENT 1

100 points

1. INSTRUCTIONS

- **Due date is February 8, 11:59 pm. Late submissions will get 0 points. NO EXCUSE!**
- **You can only use the techniques from CHAPTER 2 and CHAPTER 3. Other techniques will not be accepted.**
- In this assignment, you are expected to upload **three** Java applications on Blackboard.
  - **Numbers.java**
  - **Customer.java**
  - **CustomerTest.java**
- **You can only upload .java files. Please do not upload .zip files. Upload each .java files individually.**
- **NOTE: If you are using any IDE (Netbeans, Eclipse, etc.), please delete the statement, package Numbers; from your application. Otherwise, I will get a compilation error, and you will lose 5 pts. It is your responsibility.**
- Each question is **independent** of each other.
- **Do not forget to add comments to explain how your codes are working! Short comments are acceptable.**
- **Write your codes individually! Do not copy of any of them from someone else!**

2. GRADING POLICY

- **Case 1:**
  - For each question:
  - I will compile your .java files. **If any compilation error occurs, 5 pts will be deducted.**
  - After that, I will check your algorithms whether they are correct or not. For example; if it says find odd and even numbers. I will check whether it really finds both even and odd numbers. **This part will be evaluated based on your work.**

- Additionally, comments will be checked whether they clearly and briefly explain what you have done. **If comments are missing or not clear, enough, or brief 3 pts will be deducted.**

- **Case 2:**
  - For each question:
  - If there is not any compilation error:
    - I will try each case scenario as stated in each question. For example; if it says find odd and even numbers. I will try both even and odd numbers. **This part will be evaluated based on your work.**
    - Additionally, comments will be checked whether they clearly and briefly explain what you have done. **If comments are missing or not clear, enough, or brief 3 pts will be deducted.**
- **Case 3:**
  - **If you do not upload a .java file, I will not evaluate your answer.**

- **Case 4:**
  - **If it is determined that you copy the codes from someone else, you will get 0 pt.**

QUESTIONS

Note: In each question, assume that the user enters correct inputs. You do not handle with exceptions.

1. Write an application that inputs three numbers (integer) from a user. (**40 pts**) **UPLOAD Numbers.java**
   a. display user inputs
   b. determine and display the number of negative inputs
   c. determine and display the number of positive inputs
   d. determine and display the number of zero inputs
   e. determine and display the number of even inputs
   f. determine and display the number of odd inputs

This is an example output.

```
c:\Java\assignments>java Numbers
Please enter your first integer: 5

Please enter your second integer: 0

Please enter your third integer: -2

The inputs are 5, 0, and -2
The number of positive inputs is 1
The number of negative inputs is 1
The number of zero inputs is 1
The number of even inputs is 2
The number of odd inputs is 1
```

2. Create a class called Customer that includes three private instance variables – a first name (String), a last name (String), and a credit limit (double). **(30 pts)** **UPLOAD Customer.java**

a. Provide a constructor that initializes these three instance variables. Validate credit limit; it must be greater than 0.0.
b. Provide set and get methods for each instance variable. Validate credit limit; it must be greater than 0.0.

Write a test application named CustomerTest that demonstrates class Customers's capabilities. **(30 pts)** **UPLOAD CustomerTest.java**

a. Create two Customer objects.
b. Display each customer's first name, last name, and credit limit. For doubles, display two integers after the decimal point.
c. Then, raise each customer's credit limit by 20%.
d. Display each customer's first name, last name, and credit limit again. For doubles, display two integers after the decimal point.

This is an example output:

```
c:\Java\assignments>javac CustomerTest.java

c:\Java\assignments>java CustomerTest
The first customer's name is Ezgi Akar and credit limit is 150,12
The second customer's name is Brad John and credit limit is 175,13
The first customer's name is Ezgi Akar and new credit limit is 180,14
The second customer's name is Brad John and new credit limit is 210,16
```