**Lab 10**

**Exercise 1:**

Create a class called ***Invoice*** that a hardware store might use to represent an invoice for

an item sold at the store. An Invoice should include four pieces of information as private instance variables:

1. Part number (type String)

2. Part description (type String)

3. Quantity of the item being purchased (type int)

4. Price per item (double).

Your class should have the following:

***-*** Provide a ***set*** and a ***get*** method for each instance variable.

***-*** Provide a Constructor with four parameter variable.

***-*** Provide a method named ***getInvoiceAmount*** that calculates the invoice amount (i.e., multiplies the quantity by the price per item), then returns the amount as a double value. If the quantity is not positive, it should be set to 0. If the price per item is not positive, it should be set to 0.0.

Write a test application named ***InvoiceTest*** that demonstrates class Invoice’s capabilities. Your program should keep asking the user to calculate an invoice by printing a menu that has two choices: *calculate a new Invoice*, and *exit. Work this program for three invoices.*

***Exercise 2.***

Define a class **Date** in a file called Date.java with three attributes: **day**, **month** and **year** (all of type ***int private attributes***).

 Define the following public methods for the class Date:

1) Methods (***setters****,* ***getters***) allowing to access to attributes.

2) A method ***increment()*** that adds one day to the current date.

3) A method ***decrement()*** that subtracts one day from the current date.

4) Write a method ***display()*** that prints the date to the screen in a suitable form.

 Write a main program with a class TestDate.**java** where you test the class Date.

 Declare two objects d1 and d2 of the class Date.

 Set the date of **d1** to ***30/12/2012***, and **d2** to ***1/1/2012***

 Increment the first date object by one day.

 Decrement the second date object by one day.

 Display each of the two date objects.

(***Hint:*** to avoid all the difficulties with date calculations assume that each month has exactly 30 days).