

## 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).