Assignment 9: Reading and Programming Project due 11/19

Reading Assignment

Read Chapter 4, *Defining Classes and Methods* completing self-check exercises. A big part of this chapter is devoted to defining instance methods. A lot of material there should already be familiar: parameter passing, local variables, return values, etc. Nevertheless, you should read the entire chapter carefully, paying attention to the new terminology and OO features of Java.

Review [Handouts 10](#) and [11](#), pay attention to notes and details of the code. The assignment is very similar in the structure to the programs in Handout 10, so understanding their structure should help you in preparing the solution.

Programming Assignment

In this week’s assignment you will create a definition of a class CatalogItem.

**CatalogItem: Create and test a class definition**  
11:00 p.m. on Wed, 11/21  
worth 14 points

Create a class definition to describe a CatalogItem object. Each object of class CatalogItem describes an item in a shopping catalog of an online store. Each object should include instance variables to store its name, description, price, whether or not the item is taxable, and the quantity of that item available in the store.

Include the following instance methods in your class definition:

- A constructor that is passed the name, description, price, whether or not the item is taxable, and the quantity of that item available in the store.
- A constructor that is passed no parameters, and creates an item with name and description set to *Unknown*, non-taxable, at price and quantity attributes set to 0.
- Accessor and mutator methods for each instance variable.
- A method called `grossPrice()`, that is passed a parameter representing the tax to be applied (an integer number between 0 and 100 designating percentage of tax to be applied), and returns the price including the tax for the taxable items. If an item is not taxable, it should return the price without the tax applied.
- A method called `print()` that prints out the item information.

To test your class definition, define a `main` method within the same class In the main method

1. create two objects of class CatalogItem, representing
(a) *Dyna Magz*, Magnetic Construction Toy, priced at 25.95, taxable, 133 in stock.
(b) *Eat Me!,* A Giant Chocolate Bar, priced at 29.40, non-taxable, 50 in stock.

2. Print a description of each of the two created items, invoking the `print()` method.

3. Print the gross price of each item at 5% tax rate, invoking the `grossPrice()` method.

Your class (and therefore the java file) should be called `CatalogItem`. 