Programming Fundamentals II Sec. 601

Lab Assignment #8

Vending Machine

Due date: 10/21/20 at 11:59 pm

Purpose: The lab this week focuses on aggregation in a JavaFX application. You should be familiar with the concept of implementing an aggregate class.

Task: Create a project called VendingMachine_FirstName_LastName or Lab8_FirstName_LastName. The program will consist of four files: the VendingMachineDemo.java and style.css files provided on Blackboard as well as the Soda.java and VendingMachine.java files that you will implement. Remember to include comments summarizing the program in the two files that you implement.

1. The Soda class has two fields: a String for the name and a double for the price.
2. The Soda class has two constructors. The first is a parameterized constructor that takes a String and a double to be assigned to the fields of the class. The second is a copy constructor that takes a Soda object and assigns the name and price of that object to the newly constructed Soda object.
3. The Soda class has two getters: one to return the name and one to return the price.
4. The VendingMachine has one field for a Soda. This can initially reference a null object by assigning null to the field.
5. The VendingMachine has one constructor that takes a Soda. Remember to assign a new Soda to the Soda field securely.
6. The addSoda method of the VendingMachine class takes a Soda. Check if the field of the class references a null object (you can use the equals operator to check what the variable references). If the field references a null object, assign the new Soda to the Soda field securely and return true. If the field does not reference a null object, just return false.
7. The removeSoda method of the VendingMachine class takes no arguments. Check if the field of the class does not reference a null object (you can use the equals operator to check what the variable references). If the field does not reference a null object, assign null to the Soda field and return true. If the field references a null object, just return false.
8. In the VendingMachineDemo, change the name and price for the Soda being added to the VendingMachine to any other name and price of your choosing.

Criteria: The comment summarizing the program is worth 5 points. The fields of the Soda class are worth 3 points each (6 points total). The constructors for the Soda class are worth 10 points each (20 points total). The getters for the Soda class are worth 5 points each (10 points total). The field of the VendingMachine class is worth 6 points. The constructor, addSoda, and removeSoda methods of the VendingMachine class are worth 16 points each (48 points total). Changing the name and price of the Soda object in the VendingMachineDemo class is worth 5 points.