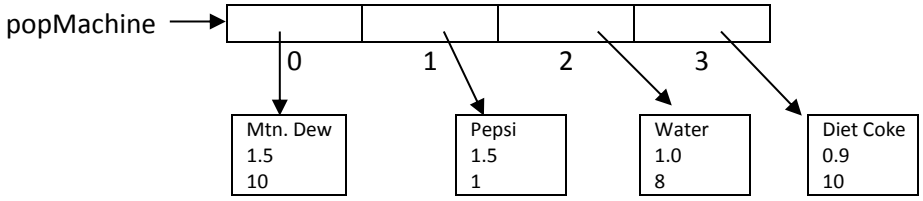
Overview

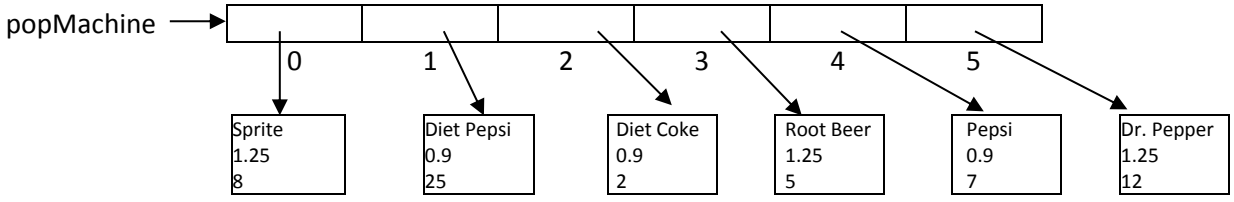
You will read sodas from a file into a pop machine (a list of Soda objects), allow users to interact with the machine, and then write the soda information back to the same file.

Sample files with initial lists that would be created.

Sodas.txt
Mtn. Dew,1.50,10
Pepsi,1.50,1
Water,1.00,8
Diet Coke,0.90,10



Sodas2.txt
Sprite,1.25,8
Diet Pepsi,0.90,25
Diet Coke,0.90,2
Root Beer,1.25,5
Pepsi,0.90,7
Dr. Pepper,1.25,12



Preliminary

- Download PopMachineStudent.py from D2L. You will modify this after creating the Soda class.
- Download sodas.txt and sodas2.txt from D2L. Place these in the same location as PopMachineStudent.py.
- Since the data in the files will change, sometimes you will want to go back to the originals when testing your code. Thus, also download sodasOriginal.txt and sodas2Original.txt from D2L and place into the same location as the other files just downloaded.

Requirements

- Create a new public class named **Soda** that
  - Is in its own file named Soda.py and is placed into the same location as PopMachineStudent.py
  - Has header documentation (author, class description)
  - Will contain the following instance variables: **_name**, **_price** , and **_quantity.**
  - Has setters (accessors) and getters (mutators) for each of the instance variables. The setters for price, and quantity set the associated instance variable to the parameter if the parameter's value is positive, else the instance variable is set to 0.

- Has a constructor with parameters for the name (default ""), price (default 0.0), and quantity (0). The constructor will call each of the set methods with the parameter data.
- Has a method named **purchase** that subtracts an amount (parameter with a default value of 1) from the _quantity data field only if the amount is less than or equal to _quantity **and** the amount is positive. The method does not return a value.
- Has the __str__ method that returns a string representation of the object. The format will be:
  Name, price, quantity
  The price will have a preceding $ with 2 digits of precision. There is one space after each comma.

- PopMachineStudent.py
  - Open PopMachineStudent.py in Wing.
  - Complete the code according the comments where CODE is shown.
  - You are not permitted to directly access or modify the instance variables (_name, _price, _quantity) of a Soda object in the list. Rather, the methods of the Soda object must be used.
    Example:

popMachine[i]._quantity = 1	Not permitted
popMachine[i].setQuantity(1)	Permitted

  - Your output is to exactly match the output shown in the sample runs.

Sample Run (User input shown in dark red)

With original sodas.txt file

```
Mtn. Dew, $1.50, 10
Pepsi, $1.50, 1
Water, $1.00, 8
Diet Coke, $0.90, 10
Name of item? Mtn. Dew
Please enter money: $1.25
Please enter money: $.20
Please enter money: $.15
Please take your Mtn. Dew
Please take your change of $0.10
Purchase another Item (y or n)? y

Mtn. Dew, $1.50, 9
Pepsi, $1.50, 1
Water, $1.00, 8
Diet Coke, $0.90, 10
Name of item? pepsi
Please enter money: $1.50
Please take your pepsi
Purchase another Item (y or n)? y

Mtn. Dew, $1.50, 9
Pepsi, $1.50, 0
Water, $1.00, 8
Diet Coke, $0.90, 10
Name of item? Peppsi
Peppsi not found in the machine.
Purchase another Item (y or n)? y

Mtn. Dew, $1.50, 9
Pepsi, $1.50, 0
Water, $1.00, 8
Diet Coke, $0.90, 10
Name of item? Pepsi
```

If necessary, prompt user to continue entering money.
If necessary, give user change.

Case-insensitive match.

Inform user if item is sold out.

```
Pepsi is sold out.
Purchase another Item (y or n)? y

Mtn. Dew, $1.50, 9
Pepsi, $1.50, 0
Water, $1.00, 8
Diet Coke, $0.90, 10
Name of item? Diet Coke
Please enter money: $.90
Please take your Diet Coke
Purchase another Item (y or n)? n

Machine data stored. Goodbye.
```

Updated data stored back to same file.

Updated sodas.txt file:

```
Mtn. Dew,1.50,9
Pepsi,1.50,0
Water,1.00,8
Diet Coke,0.90,9
```

Next run, still using soda.txt

```
Mtn. Dew, $1.50, 9
Pepsi, $1.50, 0
Water, $1.00, 8
Diet Coke, $0.90, 9
Name of item? water
Please enter money: $1.00
Please take your water
Purchase another Item (y or n)? n

Machine data stored. Goodbye.
```

Notice the updated information.

Submssion

- Before class: Upload and print Soda.py and PopMachineStudent.py
- Beginning of class: Turn in Soda.py and PopMachineStudent.py