CS 115 - Introduction to Programming in Python

Lab Guide 07

Lab Objectives: Classes

Notes:

1. Upload your solutions as **a single .zip file** to the Lab07 assignment for your section on Moodle **by 17:30 on Friday, December 4**. You must use the following naming convention: Lab07_Surname_FirstName.zip where Surname is your family name and FirstName is your first name.
2. Solutions sent through email will not be accepted.
3. You should only use functionality covered in CS115 in your solution.
4. Include a docstring for your functions.

1. Write a class called `Stock` (**Stock.py**) that represents a typical Stock object.

   The class will store the following attributes:

   - name
   - count
   - price
   - city

   Note that all data attributes should be private (__).

   a. Your class should have **an init() method** that takes the values of all four attributes as parameters.
   b. Your class should have the following **methods**:
      - get_name: returns the name
      - get_count: returns the count
      - get_price: returns the price
      - get_city: returns the city

   c. You should also write the set_count() method for updating the stock's count.
   d. In addition to the above methods, your class should define a __repr__ method which returns the information about the stock as a String object with the format shown below, where "hayley" is the name, "13" is the count, and "5.25" is the price and "izmir" city:

   ```
   Name: hayley
   Count: 13
   Price: 5.25
   City: izmir
   ```

2. Create a Python script that does the following:
    a. Defines a method getByStockQuantity(): takes a list of stocks and a quantity as parameters returns the list of Stocks in the database who have a quantity greater than that passed as a parameter.
    b. Defines a method getByPrice (): returns the list of Stocks in the database who have a price less than the value passed as a parameter.
    c. Read the file 'input.txt' and create a list of stocks using the data from the file.
    d. Print Stocks that are less than 5 TL, with a quantity over 6.

Sample Run:

```
Printing Stocks whose price is less than 5 and count is over 6:
Name: albeni
Count: 13
Price: 2.5
City: ankara

Name: twix
Count: 13
Price: 3.75
City: ankara

Name: biskrem
Count: 15
Price: 4.0
City: izmir

Name: metro
Count: 7
Price: 2.75
City: istanbul

Name: albeni
Count: 12
Price: 2.5
City: istanbul
```