Term Assignments, CIS 234: Introduction to Java Programming

Per our syllabus, the fundamentals of object oriented java programming will be taught over the course of 4 assignments. All will require individual programming and concrete deliverables, with time-sensitive deadlines.

Assignment One

The premise of the term assignment is that we operate an electronic stock market, where shares in companies are bought, sold and priced. The market is a digital service which accepts orders, human and machine-originated.

The sales price of a stock is set by a seller, in relation to demand. Hence, as few orders come in, prices may discount to stimulate buying.

Your initial market must do the following.

1. **Market setup**. Six thousand unique stocks must open, with randomly determined ticker symbols and start pricing. Each symbol, price, buy volume and seller is to be entered into an ArrayList, called the *market*. Symbols may have up to four letters.

2. **Symbol lookup**. A buyer enters a symbol by its four letter name, then receives a price, *last sale* information, and *shares outstanding*.
   - This requires for a volume of shares to be specified, when the stock is created, stating how many shares are available.
   - When a buy takes place, the number of available shares should decrease accordingly.

3. **Purchase order**. After lookup takes place, a buy is placed, updating its price within the ArrayList item associated with it. The updated price also becomes the *last sale* information, as needed in #2.
   - The buyer also demands a certain number of shares. When a buy takes place, the number of available shares should decrease accordingly.

Strategies

- ArrayList and the Stock class are helpful tools to use together. Rely upon the get, set methods to retrieve data you need from each stock. The way to iterate, or traverse the array list is to use a for-loop, wherein you can access the value of any given stock.

- During the market's creation, several thousand stocks are intialized, each with unique pricing and symbols, determined randomly. Use a similar, but simpler loop to search the index, by symbol name. This would require a Scanner object to take input from the user, which you can compare to any given stock's symbol, using getSymbol, or similar method within Stock

- Public versus Private variables inside of Stock. **`Public`** variables do not need get/set accessor methods within your stock class. They can be accessed using dot notation in your main class:

```
Stock n = new Stock();
System.out.println("stock's symbol is " + s.symbol);
```

Deliverable:

Test each feature completely. Copy a screen shot of the console output to a Word document. Print the source code with the screen shot, name and label "Assignment One." Submit, printed by the due date.