Computing in Finance - Homework #1
Due date: Spetember 26 @ 7pm.

In this homework we will start to apply basic concepts that we learned in the first two lectures. In particular we will implement an iterator and observer pattern.

Assume that you have a simple text file. Each line represents a trade data. It is a comma separated file, where the fields are: time, symbol, quantity, price. For example:
234,IBM,100,120.23
456,MSFT,234, 22.45
2234,IBM,156,100.12

1) Write a class that is called Trade that has the same fields as the file, getters and setters. This class should represent a trade.
2) You need to write a trade iterator. The trade iterator needs to implement Iterator<Trade> and be able to serve the trade from the file. In particular, on the constructor you should have as an input the file location. In addition, you should implement the has next and next methods. You can have an empty implementation for the remove method.
3) You should write a subject/observer pair of classes.
    1. The subject on the constructor should take the location of the trade file and expose the ability to subscribe and unsubscribe from the data stream. In addition, it should have a method called run. When the run method is called the file will be read and the data should be distributed to the listeners.
    2. You should implement two observer classes. One should print the current trade to the screen and the other should print the average price of all the trades seen thus far.
    3. Write a main that instantiate a subject and the two listeners and than call run.

In particular, you should note that new BufferedReader(new FileReader(file location)) will allow you to easily read the lines of the file. You MUST NOT first read the whole file. You should read one line at a time. The method split in the string class will help you to split the lines into the fields.