# Stock Statement Generator[L1]

Start Assignment

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**Due**  Jul 15 by 11:59pm     **Points**  100     **Submitting**  a file upload
**Available**  until Sep 1 at 11:59pm

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# Description

In this lab you will create a utility that creates a set of stock transaction statements for buyers/sellers. You will use a JSON file as input and output the results as HTML.  Your application should be complete with it's own unit tests.

Conceptualize this process as being run after the end of each month to generate report statements for account holders users.  We could also imagine another program (which we will NOT write in this lab) that would pick up these documents and transmit them via email to the account holders.

# Requirements

1. This process is command line only; no GUI is needed.
2. All of the data you need to generate the statements is provided the **JSON file found here**.  Imagine this file was generated by another process and is to be fed as input to your new application.
3. Each statement should include the statement date (the date when your application is run), account holder's full name, ssn, email address, phone, and account number at the top.  The body of the document should be a list of the stock buy/sell transactions that the account holder has made during the month.  The bottom of the document should contain two total amounts:  one for cash and one for stock holdings.  Buy transactions increase stock holdings and decrease cash.  Sell transactions decrease stock but increase cash. Cash = beginning_balance +- (total). Stock Value = Value of stock owned
4. Each stock transaction in the body of the document should contain the following information:
   1. The type of transaction (buy/sell)
   2. The stock symbol
   3. The price per share
   4. The number of shares bought or sold
   5. The total amount of the transaction
5. For this lab, assume stock prices stay consistent so you don't have to account for daily ups and downs.
6. Ensure your source code is in src/main/java and your unit tests are in src/test/java

Here is the math you should use to calculate Total Cash Value and Total Stock Value:

- Cash Start = beginning_balance
- Stock Start = 0
- Cash total increases by the total value of each "sell" trade (total value = numberofshares * shareprice). Stock total decreases by the same amount.
- Cash total decreases by the total value of each "buy" trade (total value = numberofshares * shareprice). Stock total increases by the same amount.

# Tasks

1. Create a high level design for your application.  Define your key classes and properties methods.
2. Setup your maven project and include dependencies for Jupiter and JSON Simple
3. Download the **JSON file of input data from here**
4. Build unit tests:
    1. HTML files exist.
    2. Validate something else of your choosing
5. Test thoroughly using both your unit test and manual inspection testing

# Learning Objectives

Students will demonstrate the use of maven dependencies, unit testing, and Java based problem solving.

# Deliverables

- Zip up your maven project (exclude the JSON file and any output HTML) and upload that zip as the submission for this assignment
- Pass off in person with a coach (highly preferable) or with video.

**Stocks**

| Criteria | Ratings | | Pts |
|---|---|---|---|
| Files created | **30 pts**<br>**Full Marks** | **0 pts**<br>**No Marks** | 30 pts |
| Math correct | **20 pts**<br>**Full Marks** | **0 pts**<br>**No Marks** | 20 pts |
| Unit Tests | **20 pts**<br>**Full Marks** | **0 pts**<br>**No Marks** | 20 pts |
| Looks good visually | **10 pts**<br>**Full Marks** | **0 pts**<br>**No Marks** | 10 pts |
| An honest try | **20 pts**<br>**Full Marks** | **0 pts**<br>**No Marks** | 20 pts |
| | | | Total Points: 100 |