

### Savings Dividends - Making Decisions, Complex I/O and Calculations with loops

The next program in this series is to read in multiple stock transactions using a loop. In this project, you will modify the **fourth** project to read multiple stock transactions from an input file. You will determine additional information such as averages, total gain, total loss, and net worth.

#### The input file:

The input file for this program is named "StockFile.txt". A sample input file is given below. This data is similar to project 4 but the layout of the file is different. The input file contains data for an unknown number of stock transactions. This will require a loop to read in the data until input failure.

Dividend Data for:

Company	Purchase Price	Selling Price	# of Shares	Brokerage Fee	Dividend	Tax Rate	Months Held
CSC	10.00	30.00	100	25.00	0.10	0.20	4
USS	9.00	8.00	165	25.00	0.10	0.19	1
ITT	6.00	18.00	89	40.00	0.28	0.24	3
MEL	2.00	39.00	165	42.00	0.12	0.21	6
WES	4.00	20.00	59	10.00	0.12	0.23	10

#### What must be calculated:

For each row, calculate the same values as in project 4. In addition, you must calculate the following summary information:

1. Total of all the gains, which is the sum of all positive values in the Gain/Loss column
2. Total of all the losses, which is the negative of the sum of all the negative values in the Gain/Loss column.
3. Average value in the Gain/Loss column.
4. Total tax paid, which is the sum of all the values in the Tax column.
5. Net worth, which is the sum over the net worth for each transaction. The net worth of a transaction is the selling price times the number shares minus 2 times the fee plus the dividend minus the tax.

#### The output file:

The output file is named "Stockdata.txt". Same as project 3 but notice the value for the tax is different.

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Stocks Summary Table

Company Name	Number of shares	Purchase Price	Selling Price	Fee	Dividend	Tax	Gain/Loss
CSC	100	\$10.00	\$30.00	\$25.00	\$10.00	\$600.00	\$1960.00
USS	165	\$9.00	\$8.00	\$25.00	\$16.50	\$0.00	-\$198.50
ITT	89	\$6.00	\$18.00	\$40.00	\$24.92	\$512.64	\$1012.92
MEL	165	\$2.00	\$39.00	\$42.00	\$19.80	\$1923.08	\$6040.80
WES	59	\$4.00	\$20.00	\$10.00	\$7.08	\$217.12	\$931.08
<b>Total Gain</b>	<b>Total Loss</b>	<b>Average Gain/Loss</b>		<b>Total Tax</b>		<b>Net Worth</b>	
\$9944.80	\$198.50	\$1949.26		\$3252.84		\$10078.47	

If you have read the description of how the Curator scores your program in the *Student Guide*, you know that is important that you use the same spelling and capitalization for all the labels shown above. The horizontal spacing does not effect scoring unless you combine things that should be separate or separate things that should be combined.

### Documentation and other requirements:

You must meet the following requirements (in addition to designing and implementing a program that merely produces correct output):

- write a header comment with your identification information, the required pledge statement (below), and a brief description of what the program does.
- write a comment explaining the purpose of every variable and named constant you use.
- write comments describing what most of the statements in your program do.
- use descriptive identifiers for variables and for constants.
- use named constants instead of “magic numbers” whenever it is appropriate.

### Submitting your program:

You will submit this assignment to the Curator System (read the *Student Guide*), and it will be graded automatically. Instructions for submitting, and a description of how the grading is done, are contained in the *Student Guide*.

You will be allowed up to five submissions for this assignment. Use them wisely. Test your program thoroughly before submitting it. Make sure that your program produces correct results for every sample input file posted on the course website. If you do not get a perfect score, analyze the problem carefully and test your fix with the input file returned as part of the Curator e-mail message, before submitting again. The highest, earliest score you achieve will be counted.

The *Student Guide* can be found at: <http://ei.cs.vt.edu/~eags/Curator.html>

The submission client can be found at: <http://spasm.cs.vt.edu:8080/curator/>

### Evaluation:

Your submitted program will be assigned a score based upon the runtime testing performed by the Curator System. We will be evaluating your submission of this program for documentation style.

### Pledge:

Each of your program submissions must be pledged to conform to the Honor Code requirements for this course. Specifically, you **must** include the following pledge statement in the header comment for your program:

```
// On my honor:
//
// - I have not discussed the C++ language code in my program with
//   anyone other than my instructor or the teaching assistants
//   assigned to this course.
//
// - I have not used C++ language code obtained from another student,
//   or any other unauthorized source, either modified or unmodified.
//
// - If any C++ language code or documentation used in my program
//   was obtained from another source, such as a text book or course
//   notes, that has been clearly noted with a proper citation in
//   the comments of my program.
//
// - I have not designed this program in such a way as to defeat or
//   interfere with the normal operation of the Curator System.
//
// <Student Name>
```

**Failure to include this pledge in a submission is a violation of the Honor Code.**