1 Purpose

Write a program that calculates stock profit.

2 Processing

2.1 Input

The following information will be input from the keyboard:
- The number of shares purchased.
- The cost per share.
- Commission paid to the broker for the purchase. The value is input as a per cent; e.g., 2.5, and not as .025.
- The number of shares sold.
- The selling price per share.
- Commission paid to the broker for the sale (which may differ from the commission for the purchase).

2.2 Output

Your program needs to display the following values:
- The purchase cost of the stock.
- The commission paid to the broker for the purchase.
- The total amount paid for the purchase transaction.
- The money received for the stock that was sold.
- The commission paid to the broker for the sale.
- The net amount received from the sale transaction.
- The purchase cost of the stock that was sold.
- The commission paid to the broker for the purchase of the sold stock.
- The total amount paid for the purchase transaction of the sold stock.
- The profit (or loss) of the sale. A loss will simply be a negative profit.

Output should be displayed similarly to the sample run below. The number of digits displayed to the right of the decimal may be different when you run your program. Don’t worry about this aspect.

2.3 Processing

The calculations are straightforward. Note that the commissions are being input as per cents (e.g., 50), but it must be converted to a fraction in order to use it in the calculation (e.g., 50% is really 0.50). Your program must do the conversion.

Note that the total cost of a bunch of shares includes the cost of the shares plus the commission paid on the purchase. The net profit of a sale is the amount received for the shares less the cost of the commission paid on the sale.

Below is a sample of what your output should resemble. Note that your spacing between lines should reflect what you see below. Dollar signs, etc. should appear as indicated below.

Don’t worry about dollar amounts being displayed with two digits to the right of the decimal point. We’ll discuss how to format output at a later date. For now, just let Java display the real values any way it wishes.
2.4 A Sample Run

Enter the number of shares purchased: 1000
Enter the cost per share: 10
Enter the broker’s commission (as a per cent): 1

Enter the number of shares sold: 100
Enter the selling price per share: 15
Enter the broker’s commission (as a per cent): 2

Original purchase: 1000 shares at $10.0 = $10000.0
Total commission on 1000 shares = $100.0 at 1.0%
Total cost of purchase = $10100.0

Stock sold: 100 shares at $15.0 = $1500.0
Total commission on 100 shares = $30.0 at 2.0%
Net income of sale = $1470.0

Cost of 100 shares at $10.0 = $1000.0
Total commission on 100 shares = $10.0 at 1.0%
Total cost of purchase = $1010.0

Net profit of sale= $460.0
3 Submission

Submit your source code, which is a .java file and should be found in the src folder of your project. Do NOT send a .class file! Do NOT zip the project and send the entire project!

The name of your program must start with your last name, first initial, then P1, using standard Java naming conventions (e.g., DoeJP1.java).

Also send a screen shot of a run of your program.

Your program should be well-tested. You should make sure it executes properly on sets of inputs other than the single set used in the above example.

Make sure your program performs the processing. Do not submit a program that simply prints the values you see in the sample output above. Such a program is worthless. Such a submission is worth 20 points at most.

Programs that do not compile are worth at most 50 points.

The program requires a header of the form

/*****************************/
*   Project 1      *
* Author: your name *
* Date: date of submission *
/*****************************/
//Description of what the program does
//This could be any number of lines

The program should have ample documentation (i.e., comments), which includes using variables with meaningful names. This aspect constitutes twenty per cent of your grade - see syllabus.

Submit your program via email, with a subject line of project 1.

All work is to be your own. Working together, sharing code, etc. is strictly not acceptable. Any indication that your work is not your own will result in a zero.

Grading will be based on the correctness of your solution, having appropriate and sufficient comments, and having the output formatted as indicated above.

Also include a HIPO chart that shows the structure of your program.