

Objective

Practice writing methods with parameters and return types. Also use the Scanner class to create interactive programs.

Problem

Write a program to calculate the profit gained from buying and selling stocks. when buying stock, you have to pay commission with the certain percentage. When you sell your stock, you need to pay commission as well. to calculate the profit examine the following example.

Let say that Alex buys stock with the following information and we want to calculate the profit he made. Assume that the price of the stock goes up. Here is the process to calculate the profit

Buying the stock

buying price of the stock: 67

number of the stocks bought: 23

total money when buying = $67 * 23 = 1541$ **← need a method to do this subtask #1**

assume that the commission paid when buying is 2 percent = $1541 * 2.0/100 = 30.82$ //purchase commission **← need a method to do this subtask #2**

Selling the stock

selling price per stock = 99

total money when selling = $99 * 23 = 2277$

total commission paid when selling is 2 percent = $2277 * 2.0/100 = 45.54$ // sell commission

Profit

profit = (total money when selling) - (total money when buying) – (buying commission) – (selling commission) = $2277 - 1541 - 30.82 - 45.54 = 659.64$ **← need a method to do this subtask #3**

Sample output

```
Welcome to stock calculator
This app calculates the amount of the profit that you can make when buying and selling some stocks
when you buy or sell stock you need to pay commission
Answer a few questions then you will see the profit you made
*****
Enter the number of the customers using this app--> 2
Enter the name of the stock-->Intel
Enter the number of the stocks purchased-->45
Enter the purchase price per stock-->99
Enter the current price of the stock-->123
Enter the commission rate-->4
*****
Here is the information about your transaction
```

```

Stock: Intel
Number of the stocks bought: 45
Purchase price per stock: 99.0
Total commission paid when buying the stock : 178.2
Selling price of the stock: 123.0
Total commission paid when selling the stock: 221.4
The profit you made buying and then selling this stock: 680.4000000000003
*****

Enter the name of the stock-->Game Stop
Enter the number of the stocks purchased-->12
Enter the purchase price per stock-->150
Enter the current price of the stock-->188
Enter the commission rate-->5
*****

Here is the information about your transaction
Stock: Game Stop
Number of the stocks bought: 12
Purchase price per stock: 150.0
Total commission paid when buying the stock: 90.0
Selling price of the stock: 188.0
Total commission paid when selling the stock: 112.8
The profit you made buying and then selling this stock: 253.19999999999982
*****

Come back soon

```

Requirements

- solutions with no methods will get a very low point.
- must satisfy all the criteria in the rubrics
- must be an interactive program
- must provide all the required methods
- feel free to add more features into this program
- must use the given main method

Methods

public static double profit (double purchaseAmount, double sellAmount, double buyComission, double sellComission): this method accepts 4 parameters: total money spend when buying the stock, total money when selling the stock, commission paid when selling, commission paid when buying. calculates the profit and returns the result. Profit can be calculated as $\text{sellAmount} - \text{purchaseAmount} - \text{sellComission} - \text{buyComission}$. (subtask #3)

public static double getComission(double price, double rate): this method accepts **total money** the person spend buying the stock and the commission rate. then

returns the amount of the commission. the amount of the commission can be calculated as price * rate/100 (**subtask #2**)

public static double getTotal(double price, double count) : this method accepts the number of the stocks and **price per stock** and returns the total amount which is price * count (**subtask #1**)

public static void stars () : this method uses a for loop to print stars, so that we can separate different part of the output. refer to the sample output

public static void description () : this method displays the description of the app(refer to the sample output.

public static void run (Scanner kb) : This method calls all the other methods. this method should do the following

- ask the user the number of the times this app will be used
- create a for loop
 - prompt the user to enter the name of the stock
 - prompt the user to enter the number of the stock purchased
 - prompt the user to enter the price per stock purchased
 - prompt the user to enter the selling price of the stock
 - prompt the user to enter the commission rate
 - call the method getTotal to find out the total money spend buying the stock
 - call the method getTotal to find out the total money selling the stock
 - call the method getCommission to find out the amount of the commission when buying the stock
 - call the method getComission to find out the amount of the commission when selling the stock
 - call the method profit to get the profit made.
 - display the info on the screen. (refer to the sample output)
- Display a good-bye message

```
public static void main(String[] args)
{
    Scanner kb = new Scanner(System.in);
    description();
    run(kb);
}
```

