CSE 002: Fundamentals of Programming

Fall 2014

Homework Assignment 2:

Objectives. This homework has the objective of giving you practice manipulating data stored in variables, in running simple calculations, and in printing the numerical output that you generated.

Task: You go shopping at Walmart's and want to compute the cost of the items you bought, including the PA sales tax of 6%. Begin by setting up a class called "Arithmetic" with a main method, as you did in your first homework.

Assumptions (input variables)

```
//Number of pairs of socks
int nSocks=3;
//Cost per pair of socks
//('$' is part of the variable name)
double sockCost$=2.58;

//Number of drinking glasses
int nGlasses=6;
//Cost per glass
double glassCost$=2.29;

//Number of boxes of envelopes
int nEnvelopes=1;
//cost per box of envelopes
double envelopeCost$=3.25;
double taxPercent=0.06;
```

Things you need to calculate:

- Total cost of each kind of item; sales tax for that total cost
- Total cost of purchases (before tax)
- Total actually paid for this transaction, including sales tax.

You need to declare (create) variables for each of these values, e.g.

```
double totalSockCost$;   //total cost of socks
```

Use the input variables to print out, on separate lines, the item being bought, how many of the given item is being bought, and the cost per item. Then compute and display the cost of each of item and the sales tax for that item. Then compute and display the total cost of the purchases (before tax), the total sales tax, and the total cost of the purchases (including sales tax).

Hints: Work out the problem by hand before writing the code, but make sure your program actually calculates the cost of each of the three kinds of items, the tax on the purchase of each kind of item, the total cost, the total sales tax, and the total cost of the transaction. Make sure the answer that the computer generates make sense. You should eliminate extra digits appearing to the right of the decimal point in your results, e.g., output like "$2.34864242". It looks a lot nicer (if slightly inaccurate) as $2.34. A good but imperfect (why imperfect?) way to have at most two digits appearing to the right of the decimal point involves taking your answer, converting to an int, multiplying it by 100, and dividing the result by 100.0.

Homework Submission. The program should be created in the class Arithmetic (and stored in the file Arithmetic.java). This homework is due at **Tuesday at 11pm exactly.** If you have placed your homework in the right place (**in github folder hw02**) and you have given it the correct name (Arithmetic.java), it will be collected automatically at the time it is due, and you should receive an email notifying you whether the program was successfully collected. **If the filename or folder name are wrong, or if you did not put them there before 23:00:00 on Tuesday, then your homework will not be collected. Making exceptions to this policy would be unfair to your peers. Hence, we never, repeat never, make exceptions.** Waiting until the last minute to commit/push your program is a recipe for disaster. You might be a few seconds late. Your clock might not have the same time as the system clock. If you miss that collection time, we will attempt to collect it again on Wednesday and Thursday at the same time (with 10% late penalties for each day). Homework later than 48 hours will not be collected.