CS 249: Assignment 1

Intro to Java and Elementary Programming

Theory Questions (12%)

1. (2%) What is true about **bytecode**?
   (a) It is architecture-specific.
   (b) It is largely interpreted by the Java Virtual Machine.
   (c) It is the same thing as machine code and can be run directly by the processor.
2. (2%) Which defines the **syntax** of the Java language?
   (a) Java API
   (b) Java language specification
3. (2%) Write the code for an empty main() method in Java.

4. (2%) Given the following code, what kind of (implicit) **type casting** is this an example of?
   (a) Widening a type
   (b) Narrowing a type

   ```
   double x = 5.0;
   int y = x;
   ```

5. (2%) Will the above code give you an error? If so, write the correct version of the code.

6. (2%) In Java, write a constant of type int, with the name “SECRET_CODE” and value “1234”.

Programming Assignments (88%)

Where appropriate, use the Pseudocode Programming Process to implement!

For this assignment, you can use the same class (i.e., the same Java file) for all requirements.

You can use the checkboxes to track whether you've met each requirement.

#	*Questions*	
1	**Print a simple message of your own choice to the console window.**	
	Do NOT print an empty string!	
	Do NOT use profanity (unless you censor it with asterisks).	
	Offensive, vile, inflammatory, and/or insulting language/statements are prohibited.	
2	**(Based on problem 1.13 in the book) Cramer's rule can be used to solve a 2x2 system of linear equations:** $ax + by = e$ $cx + dy = f$ $x = \frac{ed-bf}{ad-bc}$ $\quad$ $y = \frac{af-ec}{ad-bc}$ **Write a program that:**	
	Reads 6 doubles off the console (use the Scanner class) and puts them in variables "a", "b", "c", "d", "e", and "f" (in that order).	
	Solves the equations and prints the value for x and y.	
	For example: 6.7 30.2 2.1 0.33 77.5 4.6 ...should give the following answers for x and y: x = 1.8517701645182894 y = 2.155401983368459	

Submission

You will submit the following items as a *.tar or *.zip file:

- A plaintext, Word doc, or PDF with your answers to any theory questions
- Your .java file(s)

Submit this tar/zip file on Blackboard under the appropriate assignment.

Do NOT submit:

- Your .class file(s)
- Your project files

Grading

Below is a list of SOME of the grading penalties:

- Sloppy or poor coding style
- Bad coding design principles
- Code that does not compile
- Code that crashes, does not run, or takes a VERY long time to complete
- Using code from ANY source other than the course materials
- Collaboration on code of ANY kind; this is an INDIVIDUAL PROJECT
- Sharing code with other people in this class or using code from this or any other related class
- Output that is incorrect
- Algorithms/implementations that are incorrect
- Submitting improper files
- Failing to submit ALL required files