

CIS 2168: Assignment #1

Due on Tuesday, September 2, 2014

11:59pm

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Introduction

Welcome to CIS2168: Data Structures, and welcome to your very first assignment for the course! No worries, this assignment is extremely straightforward. There are two things to do: You'll register for Piazza, you'll install the development environment for the course, and you'll use Java to create a math quiz for the first grader.

Problem 1

Piazza (10%) Go to the Piazza website for the course and register/enroll as a student. Post a note introducing yourself to the rest of the class: include your name, school, year, (intended) major, programming background (if any) and why you are taking this course. Include a selfie if you'd like. In your assignment 1 submission document, clearly state when (date/time) you registered/enrolled in the course on Piazza and when you posted your introduction.

Problem 2

NetBeans Environment (10%) Install latest versions of Java and NetBeans, and setup your NetBeans environment on the laptop you'll use for the course. In your submission document, discuss how the installation process went for you, what problems you encountered and how you solved them. Don't write a long essay, keep your comments short and to the point.

Problem 3

Math Quiz (80%) Write a Java program to generate a math practice test for a first grader.

1. Generate 100 questions
2. Questions include multiplication, addition, subtraction, and division.
3. First grade math does not teach negative numbers. For subtraction, minuend must be greater than or equal to subtrahend. For division problems, quotient must be an integer.
4. Operands of addition and subtraction are in the range of [1-200]. Operands of multiplication and division are in the range of [1-99].
5. There is a Question superclass. Multiplication, Addition, Subtraction, and Division inherit Question.
6. No repeated questions.
7. Answers are printed separately.
8. Questions are randomly generated.

Sample output: Questions:

```
1      4  +  13 =
2      4  *  3  =
3      6  -  3  =
4      5  +  14 =
5      10 -  8  =
6      12 -  8  =
7      12 +  3  =
```

```
8      10 - 6 =
9      16 / 8 =
10     7 * 2 =
. . .
Answer:
15     4 + 13 = 17
16     4 * 3 = 12
17     6 - 3 = 3
18     5 + 14 = 19
19     10 - 8 = 2
20     12 - 8 = 4
21     12 + 3 = 15
22     10 - 6 = 4
23     16 / 8 = 2
24     7 * 2 = 14
25     . . .
```

Grading

Homework is 100 points. 80 will reflect functionality and correctness. 20 points on your program will reflect your programming style, documentation. If you code does not compile, you will not receive any credit.

Commenting and Documenting Code

Code must be properly commented. The main idea is that the grader should be able to understand your code easily, not have to tear his or her hair out wondering what some statement is doing. The first time you have to deal with poorly commented code (if you haven't already), you will understand how annoying it is. In particular, the top of each code file should contain your name, the course and assignment numbers, and a brief summary of what's in the file. Line-by-line comments should be included as necessary to make the code easy to read. A clear coding style, together with informative variable and function names, will reduce the number of comments required. Obscure code or cryptic function names will cause loss of points (for bad style) and also require more extensive comments.

What to submit

A single zip file called Assignment1_firstname_lastname.zip, where firstname is your first name, and lastname is your last name. In this zip file, put:

1. Java source
2. A README file with:
 - Instructions to compile and run of your code (include a description of command line options).
 - If your solution is not perfect, explain what parts you did and what part you did not do.
 - List of files submitted
 - All your data and results (in plain text files).
 - Anything else you want TA know

3. Submit this zip file to Blackboard