Code-Writing Quiz 1

The goal of code-writing quizzes is to help students gain fluency and confidence in their code-writing.

During the quiz students will be given 1 – 3 very short problems and about 15 min. to implement the solution with a pencil/pen on a piece of paper. Then each student will be randomly paired with a peer and the peers will assess each-other's work. All the errors must be marked with a red pen and the will be graded according to a simple rubric. The rubric will be provided. Instructor will collect all the quizzes to quickly check on the works and to post grades in the gradebook.

Students are expected to write syntactically and logically correct Java code. Import statements and main() method heading will not be needed though.

The quiz is closed-book, no-computer-access type of exercise. Students are encouraged to prepare notes on a 3x5 inch index card using both sides. That card is the only reference students can use during the quiz and eventually during the midterm and final exams. It is necessary to spend time practicing for the quiz. It's close to impossible to do well on quiz without prior practice. Problems provided below are very similar to the one(s) that will be appearing on the quiz.

Topics to review

- Input using Scanner object to input integers, doubles, and lines from keyboard
- Output using .println() method
- Calculation of any sort
- Use Java formatting to format output and use printf() method to manipulate the output appearance and formatting.
- Using if, if/else, is/else if, switch and nested if statements
- Logical operators and Boolean logic
- Using simple "while" and "for" loops for repetition.

Sample Problems

1. Get two values from the user input, width and length of the rectangle, and calculate the rectangle area using formula area = width*length. Output the resulting value showing two digits after the decimal point.
2. Input three numbers from the user. Use nested "if" statements to print them out in order from the smallest to the largest.
3. Write a loop that prints "Hello WORLD!" 10 times.
4. Use a loop to ask user to input 20 integers, one at a time. Analyze the input as it comes and print out the number only if it is even.
5. Use loop to output numbers 1 – 100 and their squares. Use Java formatting and printf() to organize output in two columns: Number and Square.
6. Use "for" loop to output a table of Celsius temperatures and their Fahrenheit equivalents. Make Celsius temperatures change from -10 to 40 degrees with a step of 5. For conversion use the following formula. Beware of integer division!

$$T_{(°F)} = T_{(°C)} \times 9/5 + 32$$

7. Use Java formatting and printf() to output number double k = 345.6789 in a field that is 10 spaces wide and rounded to 2 decimal places.