CSCI 161 Exam 1 Study Guide

This study guide is provided for your review. Please come prepared to the exam knowing the material and able to do the types of problems reviewed in this guide.

1) Know the following glossary of terms and what each means:

algorithm	declaration	method
argument	double	operator
assignment	evaluation	operator precedence
class	expression	parameter
compile	float	runtime error
console	global	scope
constant	identifier	statement
curly braces	int	syntax error
data type	logical error	variable

2) Know the syntax of a variable declaration, and a variable declaration with an assignment.

3) Be able to describe good coding style and conventions as they relate to commenting, indentation, curly-brace alignment, variable naming.

4) Be able to write a small program, like "Hello World" level of complexity, from memory, on paper (not via the Eclipse IDE).

5) Be able to describe each of the primitive data types and explain their usage as well as describe the main differences between a primitive data type and a class.

6) Display your understanding of operator precedence by being able to evaluate expressions like the following:

```
4 + 7 % 2 - 3
```

```
9 + 3 * (4 - 2) - (4 / 2)
```

```
(39 % 5 - 2) / 2
```

```
4 * 5 % 3
```

7) Given output statements that use ***print*** and ***println*** and that may include escape sequences, be able to write out exactly what the console output would look like with accurate line breaks and spacing, etc.

For example, what would the following print to the console:

```
System.out.print("Spaces are better than\t\"tabs\" ");
System.out.println("because...\n");
System.out.println("Forget that! Tabs rule!");
```

Also be able to determine the output from for and while loop examples too, for example :

```
System.out.print("Because you're ");
for (int x = 1; x <= 3; x++) {
     if (x==3) {
        System.out.print("three ");
     }
     if (x==2) {
        System.out.print("twice, ");
     }
     if (x==1) {
        System.out.print("once, ");
     }
}
System.out.println(" times a lady...");
```

Likewise, be able to state the output from several statements that may include variable declaration, assignment and expression evaluation:

```
int high;
int low = 5;
high = low * 2;
System.out.println(low);
System.out.println(high);
```

8) Be able to write your own ***while*** and ***for*** loops as described.

   For example:

   Question Sample: Write a **for** loop and additional statements within that print out all of the numbers that are even numbers from the number range of 20 to 48, inclusive, with each number printed on its own line.

9) Be able to write **nested for loops** and additional statements within that produce specific lines of output, for example:

   ```
   88888888
   7777777
   666666
   55555
   4444
   333
   22
   1
   ```

10) Be prepared to write a method that adheres to a stated set of parameters, performs a specified function, and returns a specified return value and type. Following is an example of the type of question you might get:

    Question Sample: Write a **method** that is passed in two integer parameters and performs a safe integer division and returns the integer result. Safe, in this method, means that a divide by zero (0) will be allowed and will return 0. Your method should have a meaningful name, its first integer parameter shall be the dividend and its second integer parameter shall be the divisor. Remember, in the case the divisor is 0 the operation is "allowed" and the returned result will be 0, otherwise the returned result will be the result of the dividend divided by the divisor.