Assignment 2

Student Name:	Grader Name:
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Reading Assignment: How to Program Java

- Chapter 4 – Control Statements: Part 1
- Chapter 5 – Control Statements: Part 2
- Chapter 6 – Methods: A Deeper Look
- Chapter 27 – Networking (Sections 27.4, 27.5, 27.6)

True or False:

1. Java is a strongly typed language.
2. Primitive types in Java are not guaranteed to be identical from computer to computer.

Short Questions:

1. Java has only three kinds of control structures: the sequence statement, selection statements (three types) and repetition statements (three types). Name the three types of repetition statements.
2. Explain the syntax of the conditional operator (?:).
3. The compound assignment operators abbreviate assignment expressions. If `c = 7;` is followed by `c += 3;`, what is the new value of `c`?
4. Assume `int a = 4, b = 5, c = 6, d = 15, e = 17`. Complete the following table with the proper integer value.

Expression	Explanation	Assignment
`a += 6`	`a = a + 6`	10 to `a`
`b -= 2`		
`c *= 3`		
`d /= 4`		
`e %= 5`		

5. What is wrong with the following `while` statement?

```
while ( x >= 0 )
  sum += x;
```

6. Suppose that the initialization expression in the `for` header declares the control variable (i.e., the control variable's type is specified before the variable name). What is the scope of this variable and where can it be employed?

7. Write a `for` header with control variable `index` such that it meets the following requirements.

   (a) Variable `index` varies from 1 to 10 in increments of 1.

   (b) Variable `index` varies from 10 to 1 in decrements of 1.

   (c) Variable `index` varies from 1 to 256 in powers of 2.

8. What is a *utility method* (or *helper method*)?

9. Describe the roles of the three expressions in the header of a `for` statement, i.e., `for ( expression1 ; expression 2 ; expression 3 )`.

10. What happens when a local variable or parameter in a method has the same name as a field?

11. What is *method overloading*?

Programming Challenge: Create a simple Java application that displays information about the computer it is executed on. In particular, print date and time. Use `System.getProperty` to display the following attributes: Java class path, JRE vendor name, JRE version number, Operating system architecture, Operating system name, Operating system version, User home directory, and User account name. Some of the attribute may return `null`.

1. Implement this task in Java.

2. Using IntelliJ IDEA, Git, and GitHub, commit your code as a project labeled `Java2` under `Students/<GitHubID>/`, where `<GitHubID>` should be replaced by your username on GitHub.