**JAVA READINGS CHAPTER 3**

**SUMMARY OF MAJOR TOPICS**

The chapter as its name suggests “**Introduction to Classes, Objects, Methods, and Strings**”, was talking about how to declare and use classes to create objects, to use objects for accessing the properties and behaviors of the class, and object methods for performing different tasks and the String class that is used to manipulate various strings and characters.

To start, to declare a class we use the keyword “class” followed by the class name and then enclose its body with a pair of braces. The name of the class starts with a capital letter. The class has properties or instance variables and behaviors that are called methods and their name starts with a small letter. An instance variable is declared by specifying its data type followed by its name, inside a class but outside methods of the class. In addition, methods are declared inside the class with their return type, method name, and list of arguments inside parenthesis followed by curly braces. Moreover, we can use the class to create its instance or the object by writing the class name followed by the object name equal sign followed by the new keyword and class name with parenthesis. The object helps to access the instance variables and methods of the class to perform tasks. Methods must be called with their arguments first to perform their tasks by using the class’s name, object name followed by a dot separator (.), or the new keyword if it is the constructor to make them perform their tasks. The constructor has the same name as the class and is called when you need to initialize the object’s variables to their defaults. Class instance variables have different data types including integers, floats, strings, and so on. They also have default initial values provided by Java if not specified for example default for strings is null. Moreover, numbers with a decimal point are stored as floats or double types. Java variables belong to two categories namely primitive types including Boolean, byte, char, short, int, long, float, and double, and reference types which include class objects.

**QUESTIONS & PAGE NUMBER**

1. System.out.printf and formatting (P.526)

**5 TIPS FOR WRITING JAVA PROGRAMS**

1. Prefer to list a class’s instance variables first in the class’s body, so that you see the names and types of the variables before they’re used in the class’s methods.
2. When your method has a local variable with the same name as an instance variable that method’s body must refer to the local variable instead of the instance variable. This is called shadowing because this local variable is hiding the instance variable in the method’s body. To refer to this shadowed instance variable explicitly we can use the keyword this.
3. Always replace duplicated code with calls to a method that contains one copy of that code to reduce the size of your program and make it easy to debug.
4. It’s a good practice to provide a custom constructor to initialize your instance variables with proper default values when a new object of your class is created.
5. Remember to compile the program before running it. You can compile multiple java programs at once using javac \*.java to compile all files with names ending in .java.