



COMP 1030

Lab #3

Setters, Getters, Constructors, String class

Introduction

The purpose of this lab is to build two classes to demonstrate the concepts of instance variables, constructors, setters, getters, support methods and pure blueprint classes. During this lab you will build two java classes. The first class will contain the required state and behaviour for the object **but NO main method**. The second class will contain simply the main method to give the JRE an entry point into the program, a line to instantiate a new object based upon the first class and a few lines to invoke the methods (behaviour) within the object to demonstrate their behaviour.

When writing your code, keep these guidelines in mind:

- Start each class with the proper javadoc comment header. The first line of that comment should be the purpose of the class not just its name.
- Provide a comment for section of code.
 - Follow the layout for your class as illustrated below,

Javadoc comment header

Import statements (if required)

Class declaration

State (instance variables/data)

Constructor(s) (if required)

Behaviour(s) (method(s))

Close class declaration

- Use whitespace and indentations to make your code more readable and easy to debug.
 - Use notepad and the command prompt to do your work.
 - Be sure to clearly understand your work – do not simply copy code from someone else.
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Challenge 1

Step 1 Using the terminal window create a directory called lab3, below the COMP1030 directory to save your work.

Step 2 Create a class called ChequingAccount , following the layout above. The specifications of the class are:

- Four instance variables (state):
 - First Name
 - Last Name
 - Balance
 - Account Number
- One constructor that takes four arguments
- A setter and getter for each state

Challenge 2

Step 1 Create a second class (as a separate file) called ChequingAccountTestHarness, following the layout above.

Step 2 Write a main method within this class.

Step 3 Within the main method test the class in the following way:

- Instantiate a ChequingAccount object and pass in four appropriate arguments.
- Print out the state of the object on separate lines (with an appropriate message for each state element) by invoking the appropriate getters inside the println() method.

Challenge 3

Step 1 Within the main method of the test harness, add code to test the class in this way:

- Use the appropriate setter methods to change the first and last name.
- Again, print out the state of the object on separate lines (with an appropriate message for each state element) by invoking the appropriate getters inside the println() method.

Challenge 4

Step 1 Within the ChequingAccount class write a new method which will concatenate all object state into a single string in the following order: Account Number, First Name, Last Name, Balance. The method will then search the concatenated string and return to the caller the index of the first occurrence of the pattern 78364 along with the concatenated string with a blank between the index and the concatenated string.

Step 2 Within the main method of the test harness, add code to test the method written in step 1, be sure to add appropriate messaging to any raw data printed to the screen so the user knows what the information means.

