

METRO STATE UNIVERSITY

ICS 141 - 2: Problem solving with programming Spring 2023

Lab 5: Class, Objects, Methods in Java

Wednesday, February, 15th, 2023 @ 11:59 pm

Total points: 20

NOTE: To receive credit for this lab assignment, demonstrate your solution to your lab instructor before you leave. Work is to be completed during the face-to-face lab session; however, if time runs out and the student has demonstrated significant progress, they can continue to finish the lab and submit it via D2L on Sunday, February, 19th, 2023 @ 11:59 pm.

Goals: Implement and invoke methods

The goal of 'Lab5' is to help reinforce **Class(es)**, **Objects** and **Methods**.

Part 1: Describing a class

1. Find an object in the real-world; your object **cannot** be a Car, an Animal a Book or any of the objects covered in class or any of the recordings.
2. Create a Class with the name of your object.
3. Describe the class by adding 3 instance variables.
4. Add a parameterized Constructor that takes in 3 inputs to initialize the instance variables.
5. Add Getters and Setters for all the variables.
6. Add a toString() method to print the details of your object.

Part 2: Programmer Design methods

1. Considering the real-world object you selected in Part1, create 4 additional methods.
 - a. One method of type void.
 - b. One method of type int.
 - c. One of type String.
 - d. One Static method to be call on the class.

Part 3: Creating objects

1. Create a **ThingDriver** class. (*the driver class is the name of your object + the word Driver)
2. Instantiate 2 objects using the parameterized constructor.
3. Print the details of both objects.

Part 4: Respond to these questions in your code using comments

1. What are the similarities between a Class, Object and Method?
2. What are the differences between a Class, Object and Method?
3. What is the importance of using a UML?
4. What happens when we add static to a method?
5. Can we instantiate an object if our class doesn't have a constructor? What does adding a constructor to a class do?
6. How is a constructor different from a class?

Part 4: Respond to the questions in your code – do some research

1. Right click on the **src** folder and export your code. Create a zip with your name i.e. DillonLab5 and upload it to D2L Lab5 drop box.