

CS161: Introduction to Computer Science

Lab Assignment 3

The goal of today's lab is to familiarize you with **writing and executing methods**.

You should begin by creating a BlueJ project called `lab3`. Make sure you create this new project inside of your `cs161` directory.

Warm Up

1. Read through the code below. In the README file, write down what is printed to the console when the `main()` method is executed.

```
public class MethodExecution{

    public static void method(String name, int age){
        System.out.println("The formal parameters have value: " + name + " and " + age);
        name = "XXX";
        age = -1;
        System.out.println("The formal parameters have value: " + name + " and " + age);
    }

    public static void main(String[] args){
        // Call the method passing in literal values
        method("Sarah", 20);

        // Call the method passing in variables
        String name = "Anne";
        int age = 19;
        System.out.println("The actual inputs have value: " + name + " and " + age);
        method(name, age);
        System.out.println("The actual inputs have value: " + name + " and " + age);
    }
}
```

Now check that your answer is correct by creating a new Java class and copying the code over. Run the `main()` method to see what prints to the console.

2. Create a new Java class called `ArithmeticUpdated`. Inside, rewrite the code from lab 2 using methods this time. That is, put each of the 3 exercises into its own method instead of having all of your code inside of the `main()` method.
 - The first method should have a single formal parameter for the radius of the circle and should print the circumference and area to the console.
 - The second method should have a single formal parameter for the amount of Japanese yen and should print the equivalent amount of US dollars and cents to the console.
 - The third method should have two formal parameters (the person's weight and gravitational factor) and should print the person's new weight to the screen.

In the `main()` method, call each of the methods. You should add print statements so that when I run your code it is clear what method is being called, what input arguments (if any) are being passed in, and what value (if any) was returned.

Writing Your Own Methods

Create a new Java class named `Methods`. Inside, complete the following exercises:

1. Write a method that takes in no input arguments and returns no value
2. Write a method that takes in one or more input arguments but returns no value
3. Write a method that takes in no input arguments but returns a value
4. Write a method that takes in one or more input arguments and returns a value

Your methods should be sensible and have a purpose. In the `main()` method, call each of the methods. You should add print statements so that when I run your code it is clear what method is being called, what input arguments (if any) are being passed in, and what value (if any) was returned.

Submitting your lab assignment

Rename your `lab3` folder using both people's first and last names. For example,

`lab3_Sarah_Lee_Jane_Doe`

Please rename your folder *before* you zip it.