

# 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.

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### Warm Up

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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 take in the radius of a circle and print the circumference and area.
  - The second method should take in some amount of Japanese yen and print the equivalent amount of US dollars and cents.
  - The third method should take in a person's weight and a gravitational factor and return the person's new weight.

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.

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## Writing Your Own Methods

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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.

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## Submitting your lab assignment

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

`lab3_John_Doe_Jane_Doe`

Please rename your folder *before* you zip it.