Parameters

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Before We Begin

- Make sure you have Java & Java JDK downloaded on your computer
  - can run **`java -version`** in terminal to check
- Make sure you have IntelliJ downloaded on your computer

Vocab Alert!

caller: the method calling a method

parameter: a value passed to a method by its caller

Purpose of Parameters

Parameters, like methods, are used to reduce redundancy in code. They are a way to customize what is being done inside a method so you don’t have to write a new method for every version of the code.

Creating Method with a Parameter

can be any type

```
public static void methodName(type parameterName) {
    // do stuff with the parameter
    // example print it out
    System.out.println("The parameter was: " + parameterName);
}
```

have to match exactly

Calling a Method with a Parameter

```
public static void main(String[] args) {
    // calling with with variable for parameter
    type x = value;
    methodName(x);

    // calling with explicit value
    methodName(value);
}
```

doesn’t have to match parameter name

Multiple Parameters

Methods can have multiple parameters of different (or the same) types, just put them in separated by commas.

Example:

```
public static void methodName(type1 p1, type2 p2, type3 p3) {
    // do stuff with parameters
}
```

Scope

scope: the context within which a variable can be accessed

Variables can only be accessed within the pair of braces that they are defined in. So, variables defined in the main can only be accessed within methods if they are passed as parameters. Any variables defined within methods can only be used within those methods.

Common Errors

Calling a method that needs parameters without them

Calling a method with the wrong parameter type

Primitive Types as Parameters

value semantics: When primitive variables are passed as parameters, their values are copied.

- Modifying the parameter will not affect the variable passed in.

Method Overloading

method overloading: when 2 (or more) methods have the same name but different parameter lists.

- Either a different number of parameters or parameters of different types

Example:

```
public static void methodName(type parameterName) {
    // do stuff with the parameter
}

public static void methodName(type1 p1, type2 p2, type3 p3) {
    // do stuff with parameters
}
```

Parameter Practice

Write the following methods:

- Print out your age based on a given parameter
- Print the average of 2 numbers
- Print the average of 3 numbers (should overload the previous method)

Note: Try to use descriptive method and parameter names following the same convention for naming as variables (start with lowercase and camel case after that)

The End