Basic Java Functions and Data Types

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Java Functions

- There are **five** distinct aspects of a Java function.
- For now, we don't need to worry about the first two (`public` and `static`)
- We'll instead focus on **function names**, **parameters**, and **return types**
- First, let's go over the data types we know

Data Types

- Last class, we learned about three kinds of data types: `int`, `double`, and `String`
- `int`: Any **whole number** (like -1, 0, 10, -87)
- `double`: Any **decimal** (like 1.0, 0.0, -2.5, 3.14159)
- `String`: Anything between **double quotes** (like `"Hello"` or `"Pi is approximately 3.14"`)

Function Names

```java
public static int add(int number1, int number2)
```

- The function name is a short indication of what it does
- In this case, add tells me that the function adds whatever I pass into it as parameters (i.e. number1 and number2)
- If our function name is longer than one word, we use camelCase. The first letter of the function is lowercase, and the start of every other word is uppercase.
- Spaces are **not** allowed in function names
- So, if we want a "make jelly sandwich" function, the function name becomes makeJellySandwich

Parameters

```
public static int add(int number1, int number2)
```

▶ A parameter is **a piece of information we give a function**

▶ Parameters come between the parentheses after a function name and are separated by commas

▶ Parameters can be any data type we want, and a function can require as many parameters we want

▶ For something like the above function, add, we need two numbers. Therefore, we need two `int` parameters, `number1` and `number2`.

Return Types

```
public static int add(int number1, int number2)
```

- The return type is the **third** word in a Java function's declaration.
- They tell me what I should expect from a function
- In this case, the return type is `int`. This tells me that if I give the add function two numbers (`number1` and `number2`), I should expect to get an `int` back.