LOGAN MAY 30TH, 2022

CODING 101: JAVA

Coding is fun!

WHAT WE WILL COVER (NOT ALL TODAY)

- Variables
  - Types
    - Basic Types: int, string, boolean, etc.
  - Operations
- Data Structures
  - Arrays
  - Lists
  - Trees
  - Dictionaries (Hashset in java)
  - Stacks and Queues
- Classes
- Inheritence
  - Interfaces
  - Abstract classes

- Logical Operators
- Control Structures
  - If/Else Statements
  - Loops (for loops and while loops)
  - Switch Statements
- IO Operations
  - User Input using Java Scanner
  - Ouput using System Output
  - Reading/Writing Files
- Unit Testing
  - Asserts
  - Setup and Teardown
  - UI Testing

VARIABLES: TYPES

In Java you can create a variable and assign it a value that you can reuse later. Each variable has a type, which means exactly what you might think. A Type in programming is just what type of data does the variable store.

Basic Types:

- int: stores integer numbers (max value of 2,147,483,647), examples: 1, -4, 3, -6, 24

- long: used to store numbers larger than 2147483647 up to 9,223,372,036,854,775,807

- double: stores decimal numbers, examples: 1.0, 0.0. -2.3, 21.045

- string: stores text, examples: "Coding is Fun!", "123456789"

- boolean: stores true and false values

Operations:

- Numeric operations for int, long, and double types

  - + , - , * , / , %
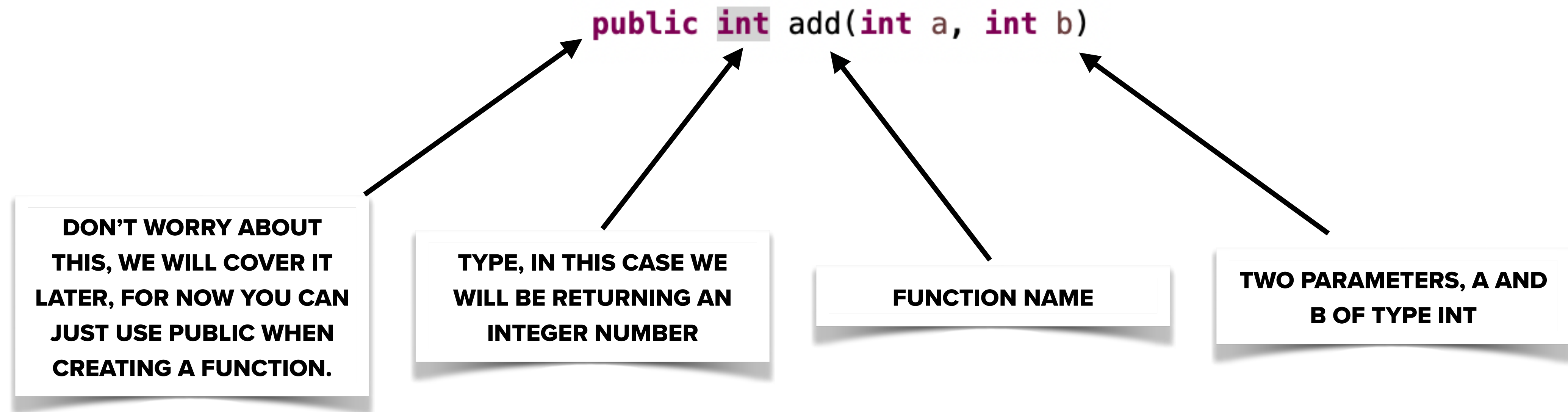
LETS CREATE SOME VARIABLES

```java
1
2  public class Day1 {
3
4      public static void main(String[] args) {
5
6          /*
7           * Notice the semicolon at the end of each line,
8           * this is required in java.
9           */
10         int ageInt = 22;
11         double ageDouble = 22.0;
12         String name = "Logan Hylton";
13
14     }
15 }
16
```

NOTICE THE QUOTATION MARKS. THESE ARE REQUIRED WHEN CREATING A STRING VARIABLE

FUNCTIONS

A function takes in some number of parameters (variables) and returns something back. So, when creating a function, we must specify what type will be returned and we must specify the parameters along with their types.

```
public int add(int a, int b)
```

DON'T WORRY ABOUT THIS, WE WILL COVER IT LATER, FOR NOW YOU CAN JUST USE PUBLIC WHEN CREATING A FUNCTION.

TYPE, IN THIS CASE WE WILL BE RETURNING AN INTEGER NUMBER

FUNCTION NAME

TWO PARAMETERS, A AND B OF TYPE INT

Let's try writing this function together.