Java Lab 01:

Types, Variables, Operators

Goal

Learn enough Java to do something useful

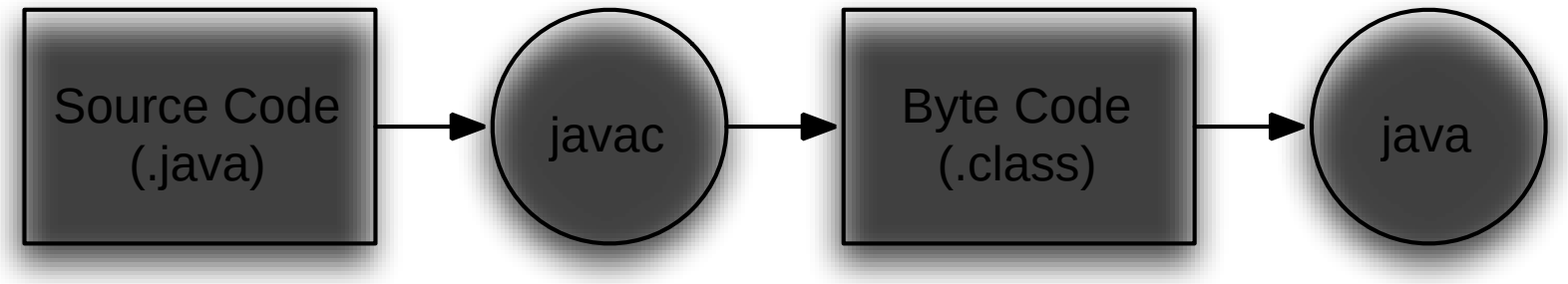
The Computer Programming Languages

- Easier to understand than CPU instructions
- Needs to be translated for the CPU to understand it

Java

- “Most popular” language
- Runs on a “virtual machine” (JVM)
- More complex than some (eg. Python)
- Simpler than others (eg. C++)

Compiling Java



First Program

```
class Hello {  public static void main(String[]
    arguments) {
        // Program execution begins here
        System.out.println("Hello world.");
    }
}
```

Program Structure

```
class CLASSNAME {  public static void
    main(String[] arguments) {
        STATEMENTS
    }
}
```

Output

System.out.println(*some String*) outputs to the console

Example:

```
System.out.println(“output”);
```

Second Program

```
class Hello2 {  public static void main(String[]
    arguments) {
        System.out.println("Hello world."); // Print once
       System.out.println("Line number 2"); // Again!
    }
}
```

Types

Kinds of values that can be stored and manipulated.

boolean: Truth value (**true** or **false**). **int**: Integer (0, 1, -47).

double: Real number (3.14, 1.0, -2.1).

String: Text (“hello”, “example”).

Variables

Named location that stores a value of one particular type.

Form:

TYPE NAME;

Example:

String foo;

Assignment

Use = to give variables a value.

Example:

```
String foo;
foo = “IAP 6.092”;
```

Assignment

Can be combined with a variable declaration.

Example:

```
double badPi = 3.14;
boolean isJanuary = true;
```

```
class Hello3 {  public static void main(String[]
    arguments) {
        String foo = "IAP 6.092";
        System.out.println(foo);  foo
        = "Something else";
        System.out.println(foo);
    }
}
```