

Lecture 19. Introduction to Variables in Java

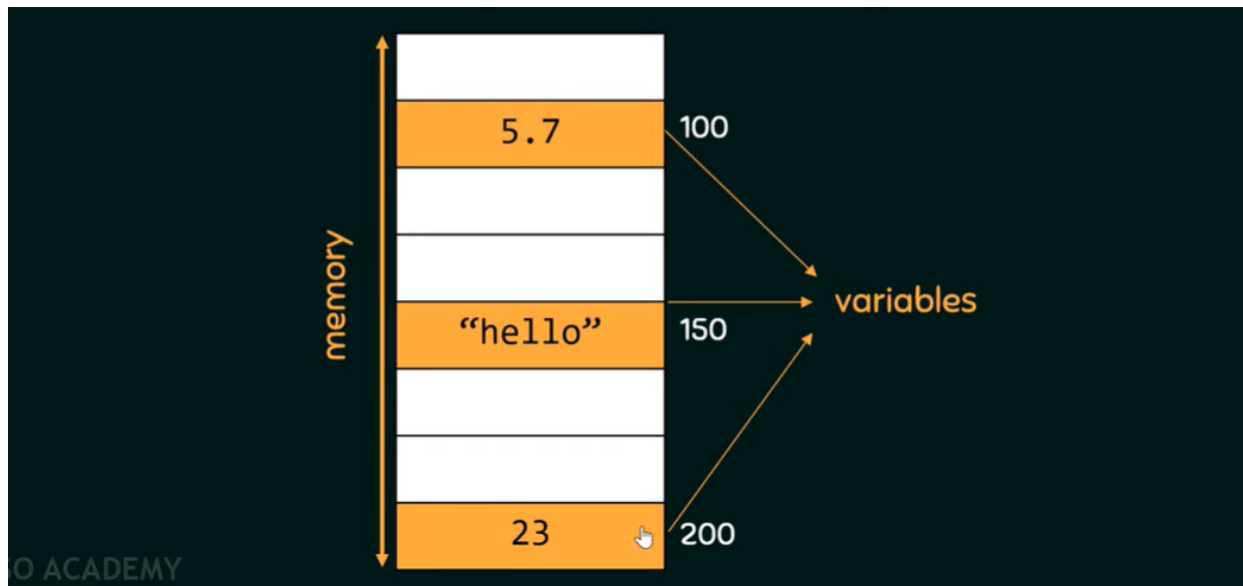
Variables

Used to store values in our computer's memory

Memory

A variable is like a box in the computer's memory

每个变量在内存中都有一个唯一的地址，这个地址指定了这个变量所在的位置



Declaration

Allocating space inside our memory (分配内存中的空间)

- To allocate space in our memory we declare a variable
→ `TYPE NAME;`
- The type of the variable should be compatible with the data inside it
→ to store a String inside a variable, the variable's type should be String
- `String myName;`
→ Declared a variable called `myName` and can store a `String`

- To declare multiple variables of the same type:
`TYPE NAME1, NAME2;`
- `String myName, myJob;`
→ `myName` & `myJob` are two variables that can store a `String`.

A variable must be declared before it can be used.

Assignment (赋值)

Used to store/put a value inside a variable

We can assign a value to a variable by using the **assignment operator (=)**

- `variableName = expression`
→ `myJob = "Programmer";`
→ "Programmer" will be stored inside `myJob`.

expression (表达式): An expression is anything that produces/gives a value.

Initialization

Assigning a value to a variable when declaring it

Examples:

```
String myJob = "Programmer";
```

This is equivalent to:

```
String myJob;  
myJob = "Programmer";
```

Be careful

Do not re-define variables

```
public static void main(String[] args) {  
    String myName;           //ok  
    String myName;           //Not ok  
    String myName = "YuCaiH"; //Not ok  
}
```

Each variable has a unique name

Printing the value of a variable

```
public class Main {  
    public static void main(String[] args) {  
        String myName = "YuCaiH";  
        System.out.println(myName);  
    }  
}
```

```
PS E:\02_大二\Java_Programming\code\lesson_19_code_1> javac Main.java  
PS E:\02_大二\Java_Programming\code\lesson_19_code_1> java Main  
YuCaiH
```