Java Class Attributes

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Java Class Attributes

In the previous chapter, we used the term "variable" for `x` in the example (as shown below). It is actually an **attribute** of the class. Or you could say that class attributes are variables within a class:

Example

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Create a class called "`Main`" with two attributes: `x` and `y`:

```
public class Main {
  int x = 5;
  int y = 3;
}
```

Another term for class attributes is **fields**.

Accessing Attributes

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We use the `x` attribute on the object to print its value:

Example

Create an object called "`myObj`" and print the value of `x`:

```
public class Main {
  int x = 5;

  public static void main(String[] args) {


  }
}
```

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Modify Attributes

You can also modify attribute values:

Example

Set the value of `x` to 40:

```
public class Main {
  int x;

  public static void main(String[] args) {
    Main myObj = new Main();

    System.out.println(myObj.x);
```

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Or override existing values:

Example

Change the value of `x` to 25:

```
public class Main {
  int x = 10;

  public static void main(String[] args) {
    Main myObj = new Main();

    System.out.println(myObj.x);
  }
}
```

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If you don't want the ability to override existing values, declare the attribute as `final` :

Example

```
public class Main {
  final int x = 10;

  public static void main(String[] args) {
    Main myObj = new Main();
    myObj.x = 25; // will generate an error: cannot assign a value to a final va
    System.out.println(myObj.x);
```

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The `final` keyword is useful when you want a variable to always store the same value, like PI (3.14159...).

The `final` keyword is called a "modifier". You will learn more about these in the Java Modifiers Chapter.

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Multiple Objects

If you create multiple objects of one class, you can change the attribute values in one object, without affecting the attribute values in the other:

Example

Change the value of `x` to 25 in `myObj2`, and leave `x` in `myObj1` unchanged:

```
public class Main {
  int x = 5;

  public static void main(String[] args) {
    Main myObj1 = new Main();  // Object 1
    Main myObj2 = new Main();  // Object 2
    myObj2.x = 25;
    System.out.println(myObj1.x);  // Outputs 5
    System.out.println(myObj2.x);  // Outputs 25
```

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Multiple Attributes

You can specify as many attributes as you want:

Example

```
public class Main {
  String fname = "John";
  String lname = "Doe";
  int age = 24;

  public static void main(String[] args) {
    Main myObj = new Main();
    System.out.println("Name: " + myObj.fname + " " + myObj.lname);
    System.out.println("Age: " + myObj.age);
  }
}
```

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The next chapter will teach you how to create class methods and how to access them with objects.

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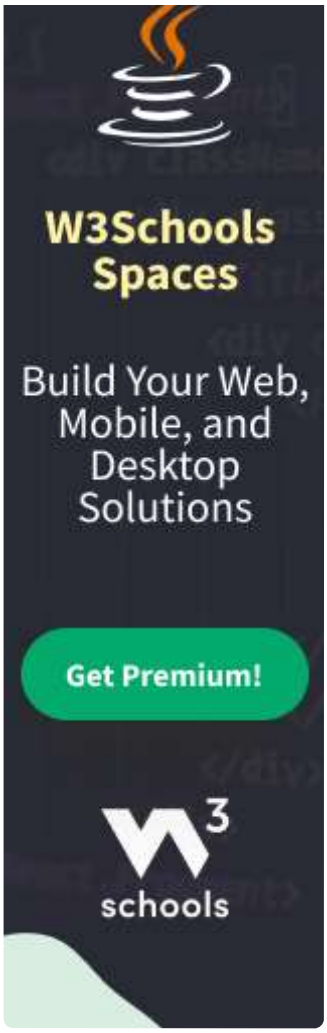

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