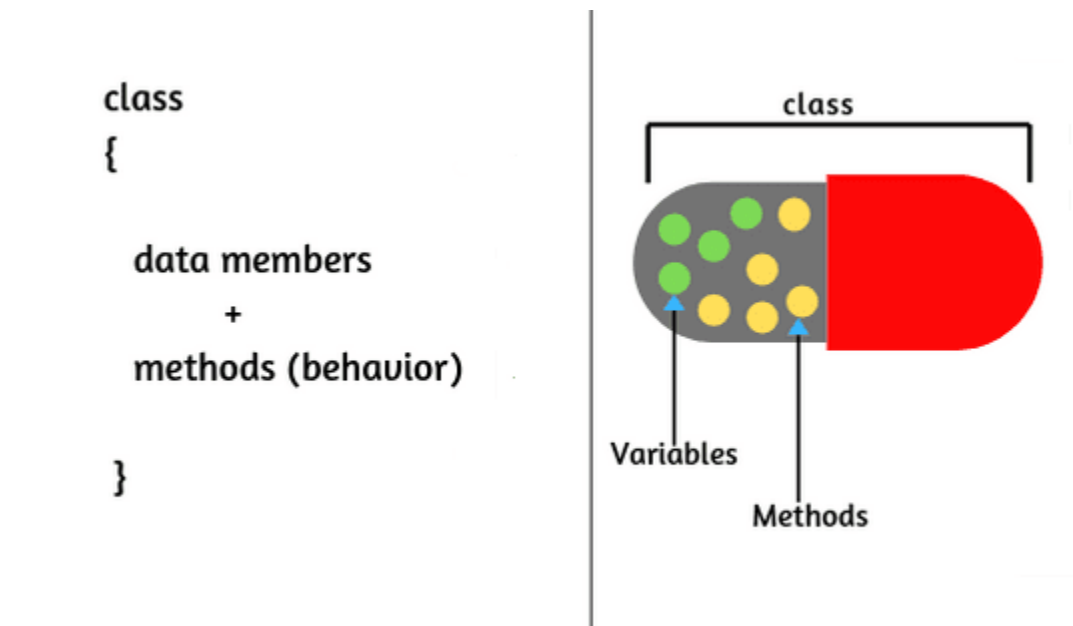


Java Encapsulation

The meaning of Encapsulation, is to make sure that "sensitive" data is hidden from users. To achieve this, you must:

- declare class variables/attributes as `private`
- provide public get and set methods to access and update the value of a `private` variable



Get and Set

You learned from the previous chapter that `private` variables can only be accessed within the same class (an outside class has no access to it). However, it is possible to access them if we provide public get and set methods.

The `get` method returns the variable value, and the `set` method sets the value.

Syntax for both is that they start with either `get` or `set`, followed by the name of the variable, with the first letter in upper case:

Example

```
public class Person {  
    private String name; // private = restricted access  
  
    // Getter  
    public String getName() {  
        return name;  
    }  
  
    // Setter  
    public void setName(String newName) {  
        this.name = newName;  
    }  
}
```

Example explained

The `get` method returns the value of the variable `name`.

The `set` method takes a parameter (`newName`) and assigns it to the `name` variable. The `this` keyword is used to refer to the current object.

However, as the `name` variable is declared as `private`, we cannot access it from outside this class:

Example explained

The `get` method returns the value of the variable `name`.

The `set` method takes a parameter (`newName`) and assigns it to the `name` variable. The `this` keyword is used to refer to the current object.

However, as the `name` variable is declared as `private`, we cannot access it from outside this class:

Example

```
public class Main {  
  
    public static void main(String[] args) {  
  
        Person myObj = new Person();  
  
        myObj.name = "John"; // error  
  
        System.out.println(myObj.name); // error    }  
}
```

Instead, we use the `getName()` and `setName()` methods to access and update the variable:

Example

```
public class Main {  
  
    public static void main(String[] args) {  
  
        Person myObj = new Person();  
  
        myObj.setName("John"); // Set the value of the name variable to  
        "John"  
  
        System.out.println(myObj.getName());  
  
    }  
  
}
```

