

## Smart Home Lighting System

// Class representing a smart lamp in a smart home system

```
class SmartLamp {  
  
    boolean isOn;  
  
    SmartLamp() {  
        this.isOn = false; // Lamp is off by default  
    }  
  
    void turnOn() {  
        isOn = true;  
        System.out.println("The smart lamp is now ON.");  
    }  
  
    void turnOff() {  
        isOn = false;  
        System.out.println("The smart lamp is now OFF.");  
    }  
  
    void displayState() {  
        if (isOn) {  
            System.out.println("The smart lamp is currently ON.");  
        } else {  
            System.out.println("The smart lamp is currently OFF.");  
        }  
    }  
}
```

```
}  
  
}  
  
// Main class to demonstrate the smart home lighting system  
public class SmartHomeDemo {  
    public static void main(String[] args) {  
        // Create a new SmartLamp object for the living room  
        SmartLamp livingRoomLamp = new SmartLamp();  
  
        // Display initial state  
        livingRoomLamp.displayState();  
  
        // Turn on the lamp as part of the morning routine  
        livingRoomLamp.turnOn();  
  
        // Display the current state  
        livingRoomLamp.displayState();  
  
        // Turn off the lamp as part of the evening security routine  
        livingRoomLamp.turnOff();  
  
        // Display the final state  
        livingRoomLamp.displayState();  
    }  
}
```