

Thinking in objects

An intro to Object Oriented Programming (OOP)

Laila Barakat

The light

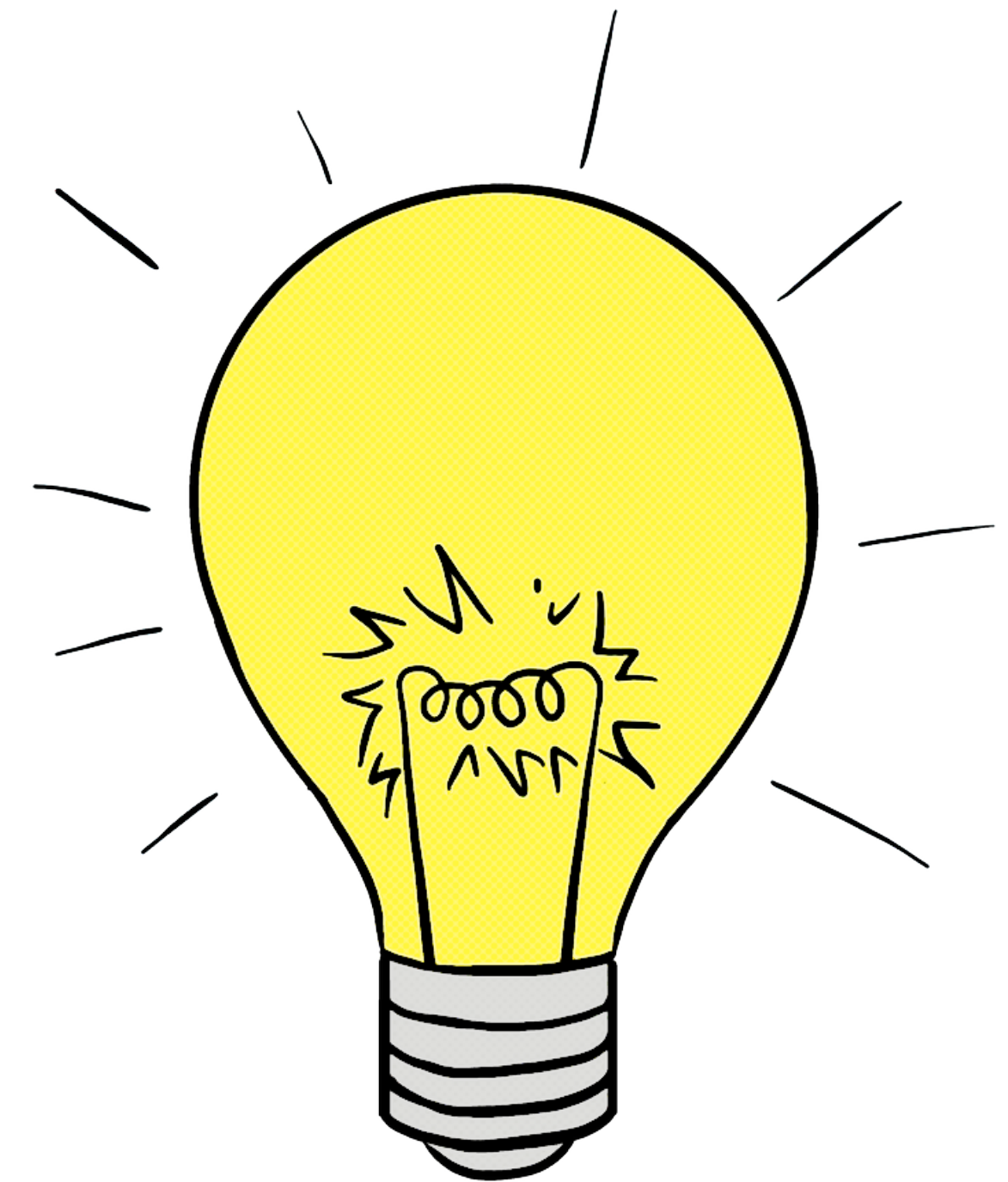
Properties & Actions

- **Properties of the light:**

- Brand name
- Lumen
- State (on/off)

- **Actions on the light:**

- Turn on
- Turn off



The light

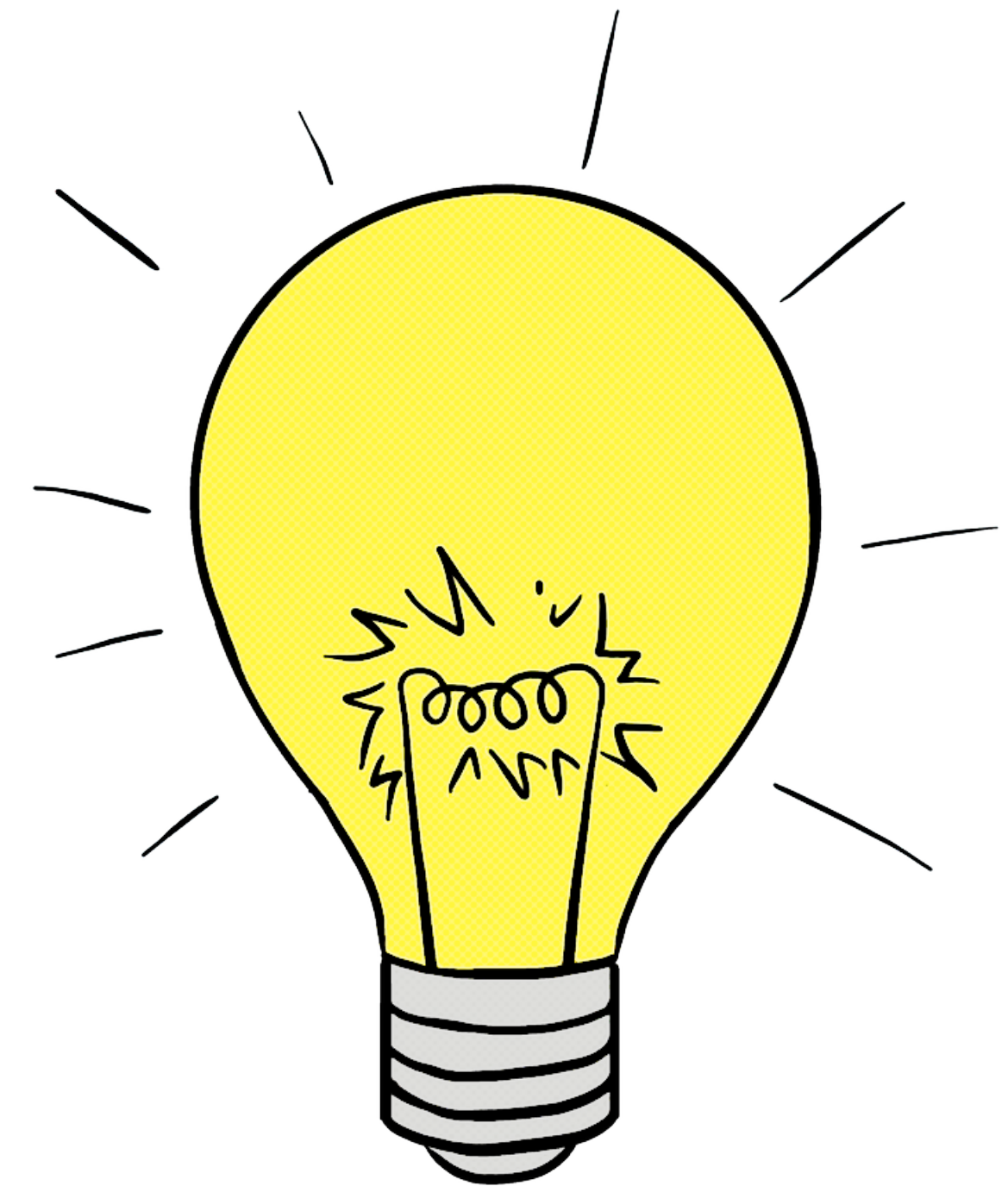
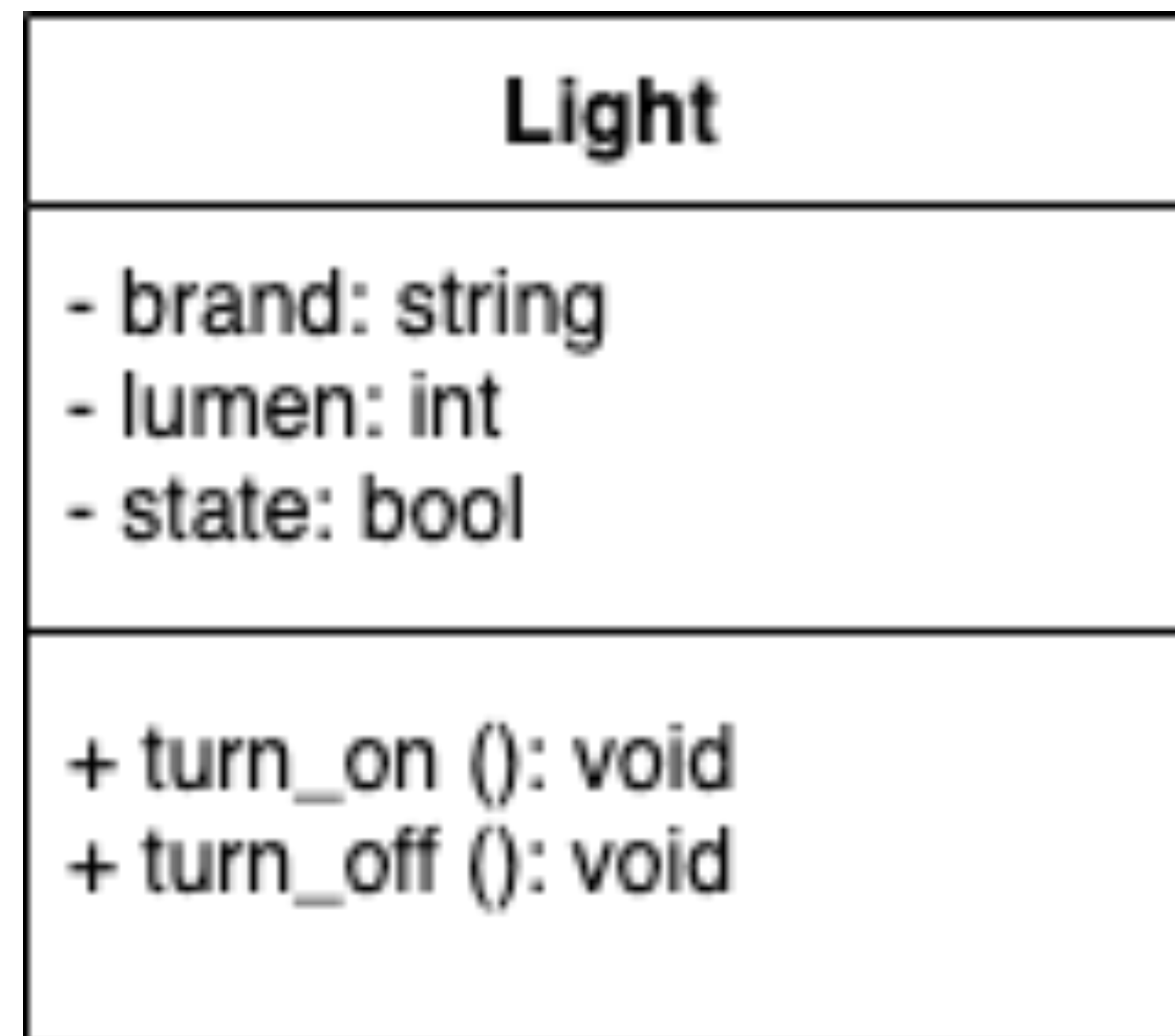
In class diagram

- **Properties of the light:**

- Brand name
- Lumen
- State (on/off)

- **Actions on the light:**

- Turn on
- Turn off



The radio

Properties & Actions

- Properties of the radio:



- Actions on the radio:



The radio

Properties & Actions

- **Properties of the radio:**

- Brand name
- Volume
- State (on/off)
- Current frequency

- **Actions on the radio:**

- Turn on
- Turn off
- Set volume
- Set frequency



The radio

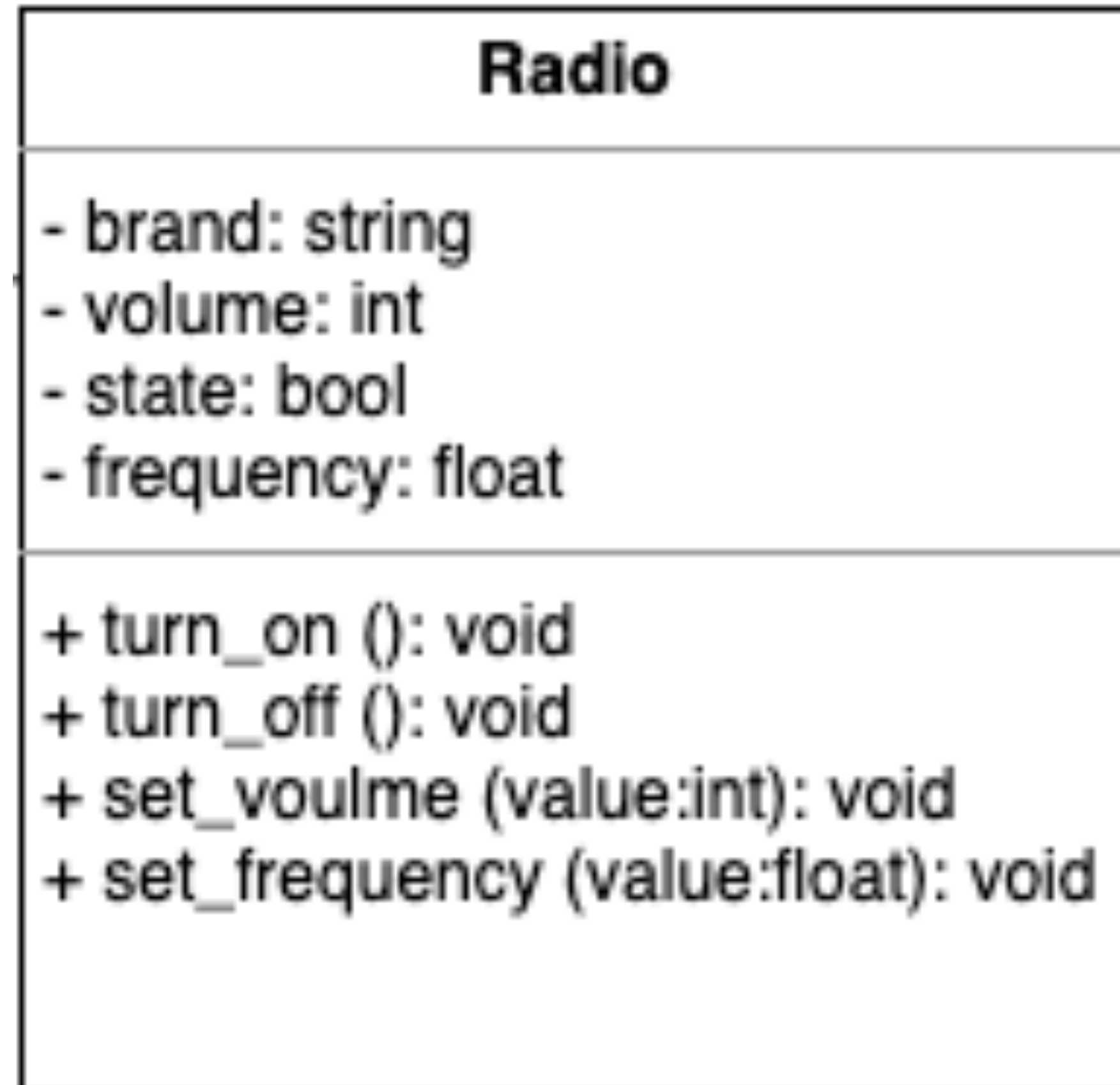
In class diagram

- **Properties of the radio:**

- Brand name
- Volume
- State (on/off)
- Current frequency

- **Actions on the radio:**

- Turn on
- Turn off
- Set volume
- Set frequency



The car

Properties & Actions

- **Properties of the car:**

- Brand name
- 4 lights
- Radio
-

- **Actions on the car:**

- Lock
- Unlock
-



The car

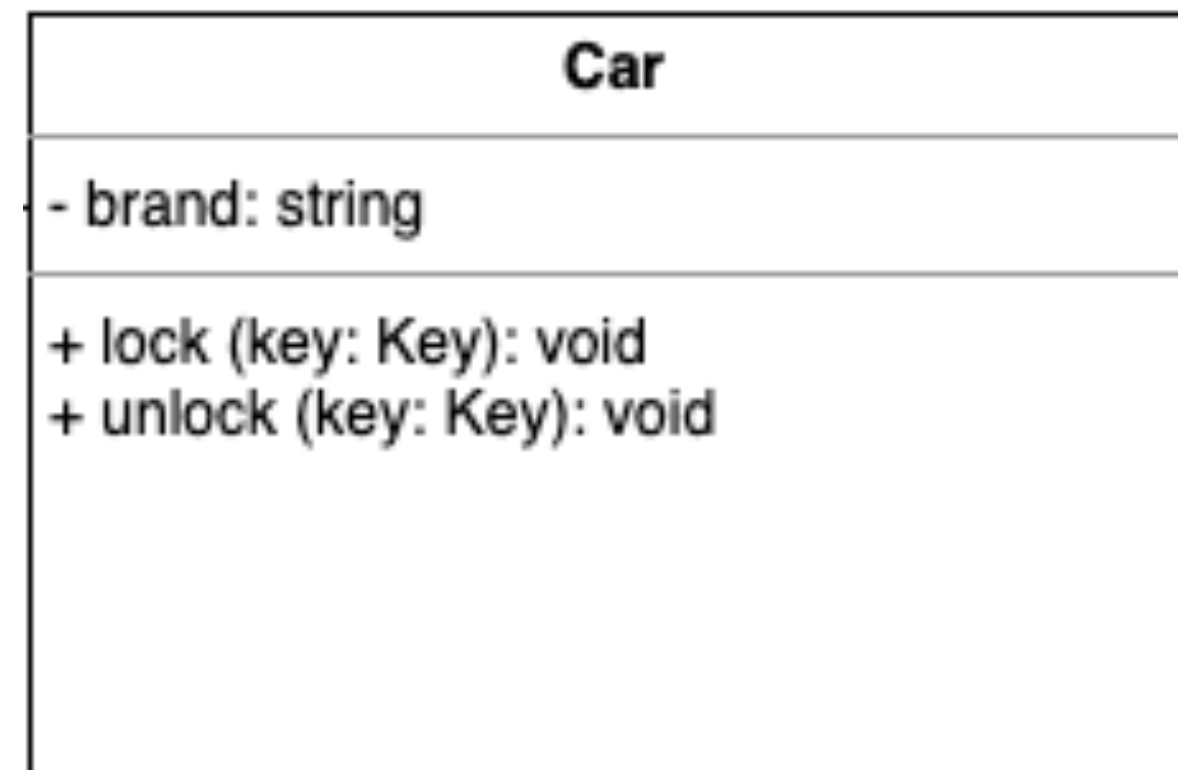
In class diagram - combining objects

- **Properties of the car:**

- Brand name
- 4 lights
- Radio
-

- **Actions on the car:**

- Lock
- Unlock
-



The car

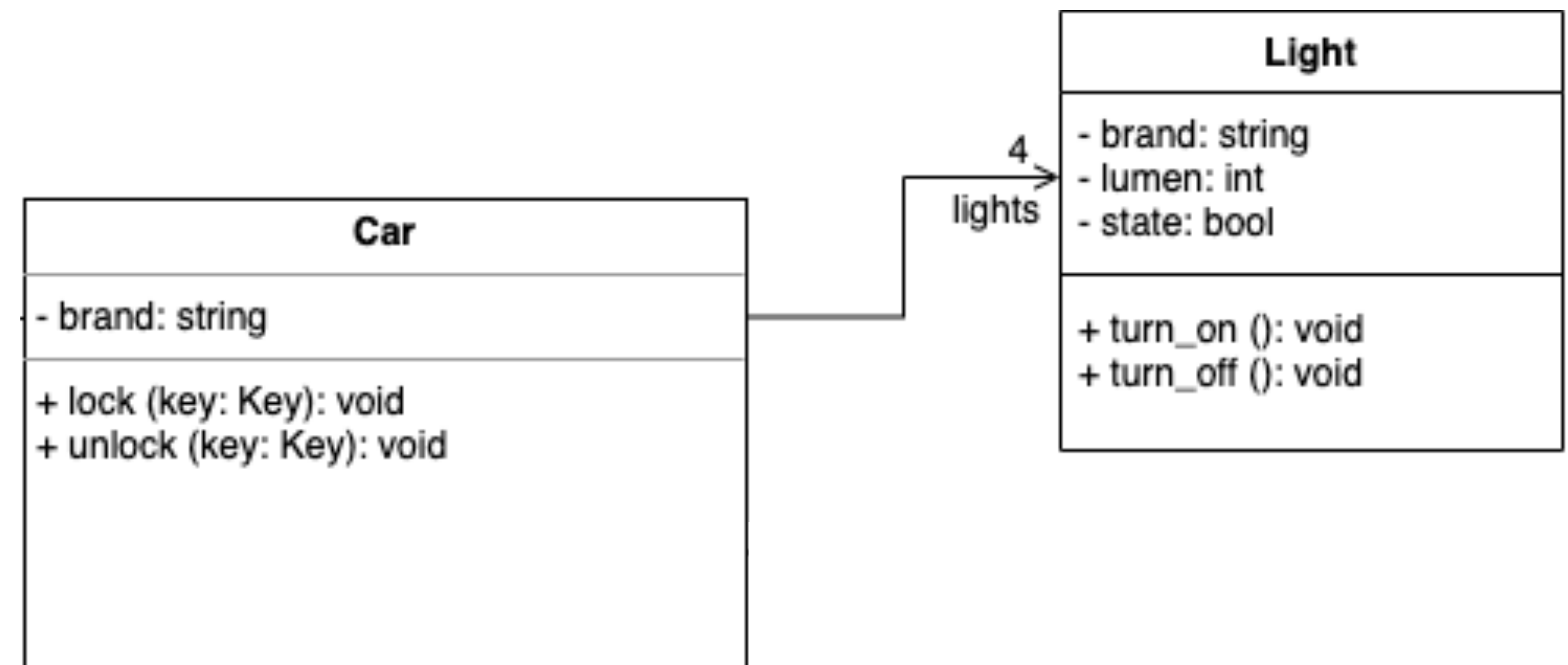
In class diagram - combining objects

- **Properties of the car:**

- Brand name
- 4 lights
- Radio
-

- **Actions on the car:**

- Lock
- Unlock
-



The car

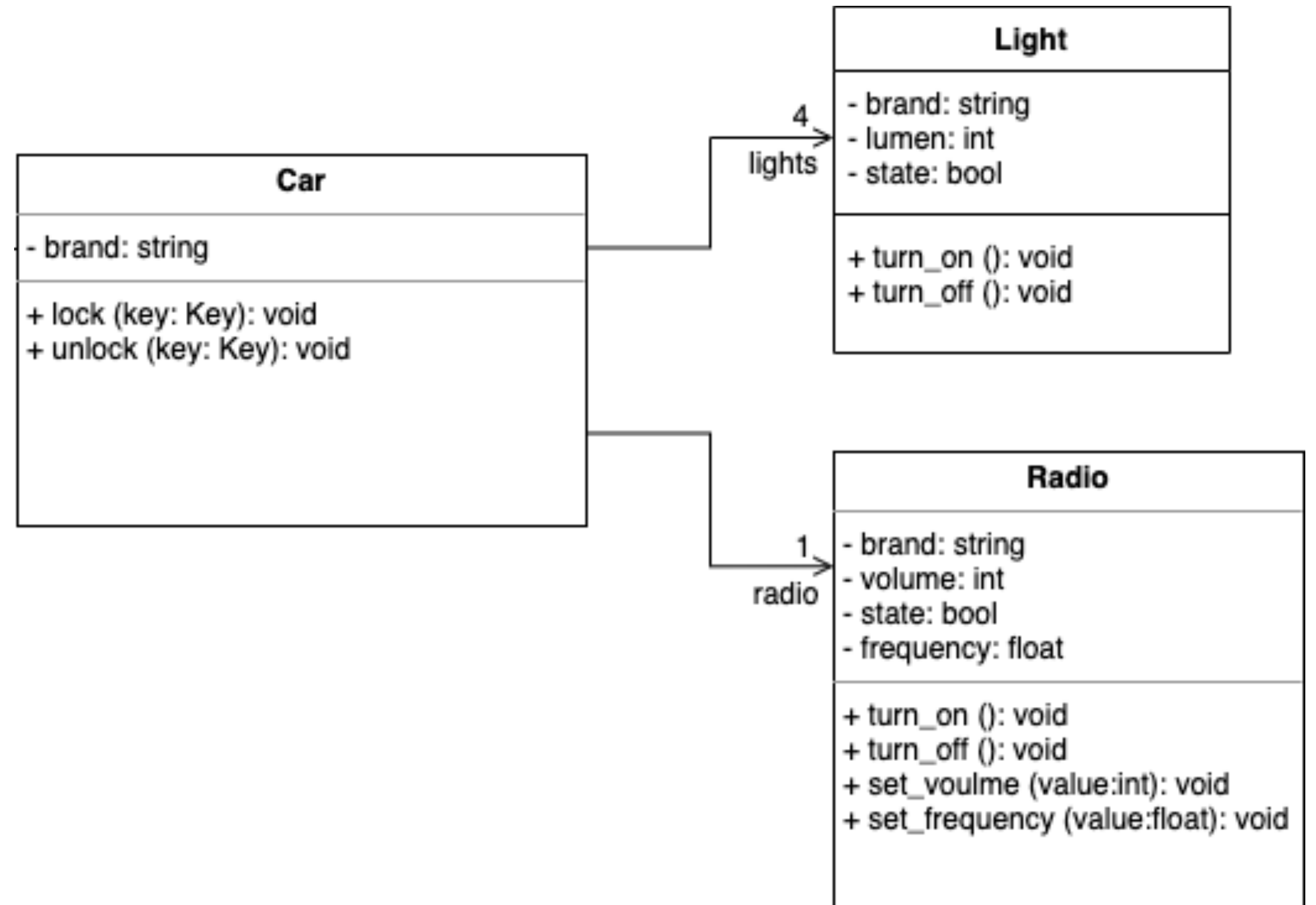
In class diagram - combining objects

- **Properties of the car:**

- Brand name
- 4 lights
- Radio
-

- **Actions on the car:**

- Lock
- Unlock
-



The car

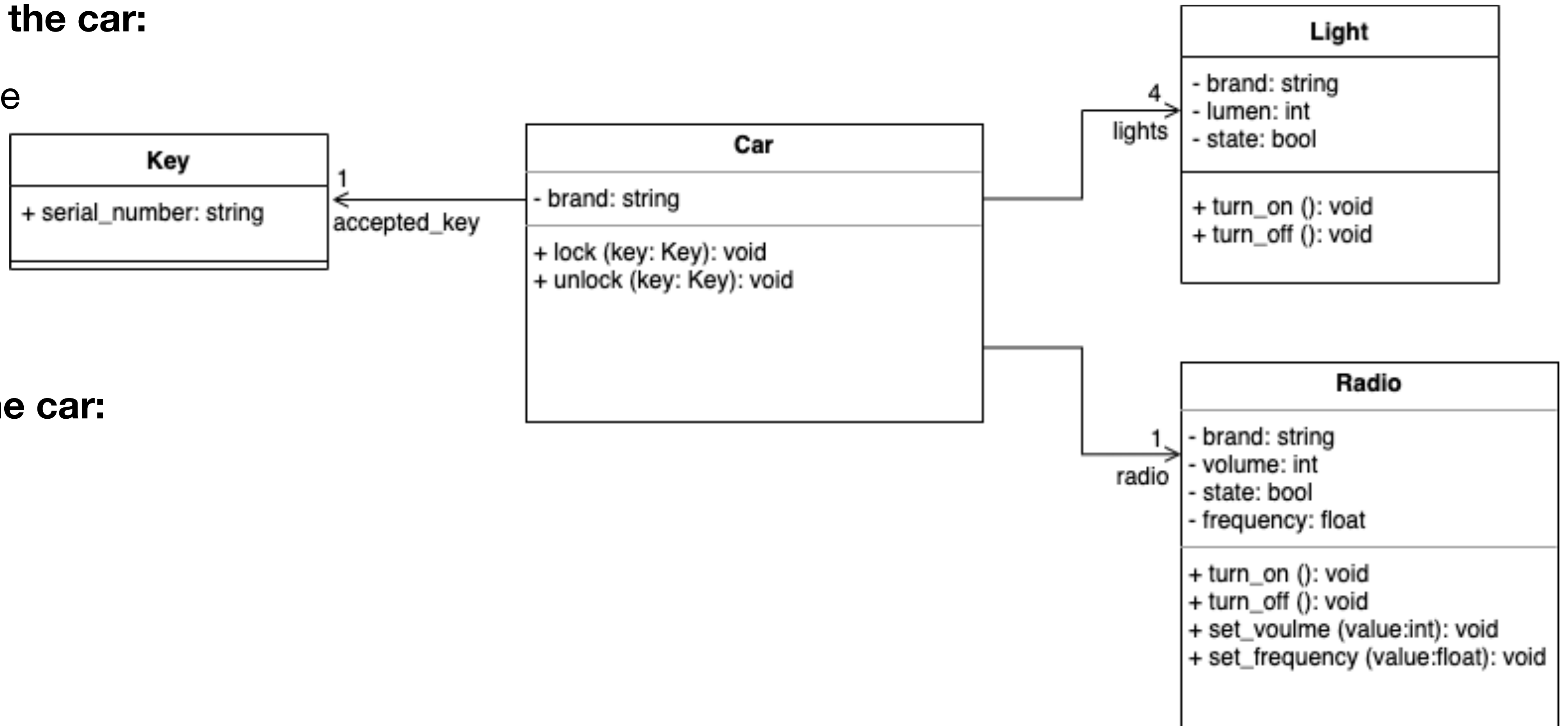
In class diagram - combining objects

- **Properties of the car:**

- Brand name
- 4 lights
- Radio
-

- **Actions on the car:**

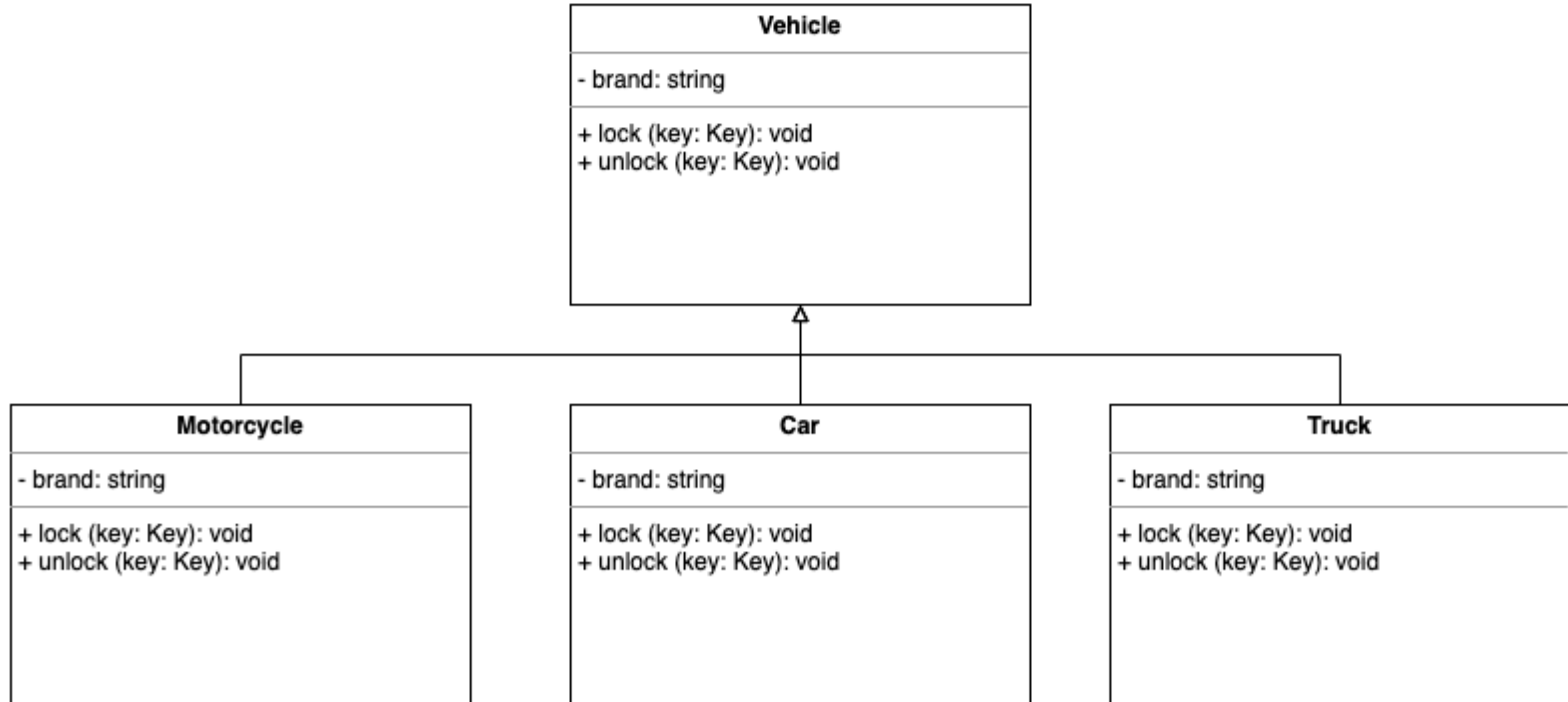
- Lock
- Unlock
-



What other objects you can think of have a brand, a key, lights, and a radio?

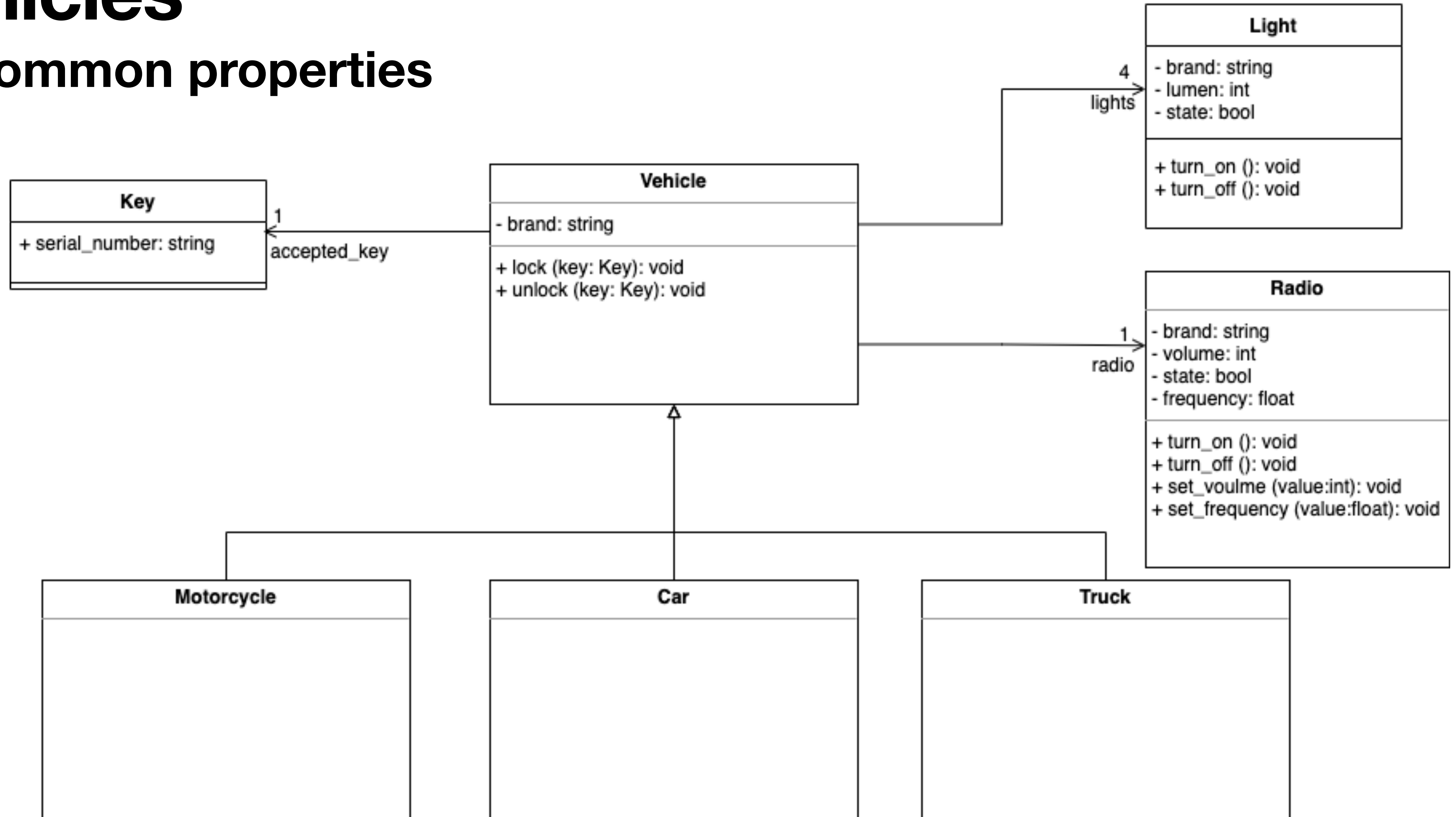
Vehicles

All common properties



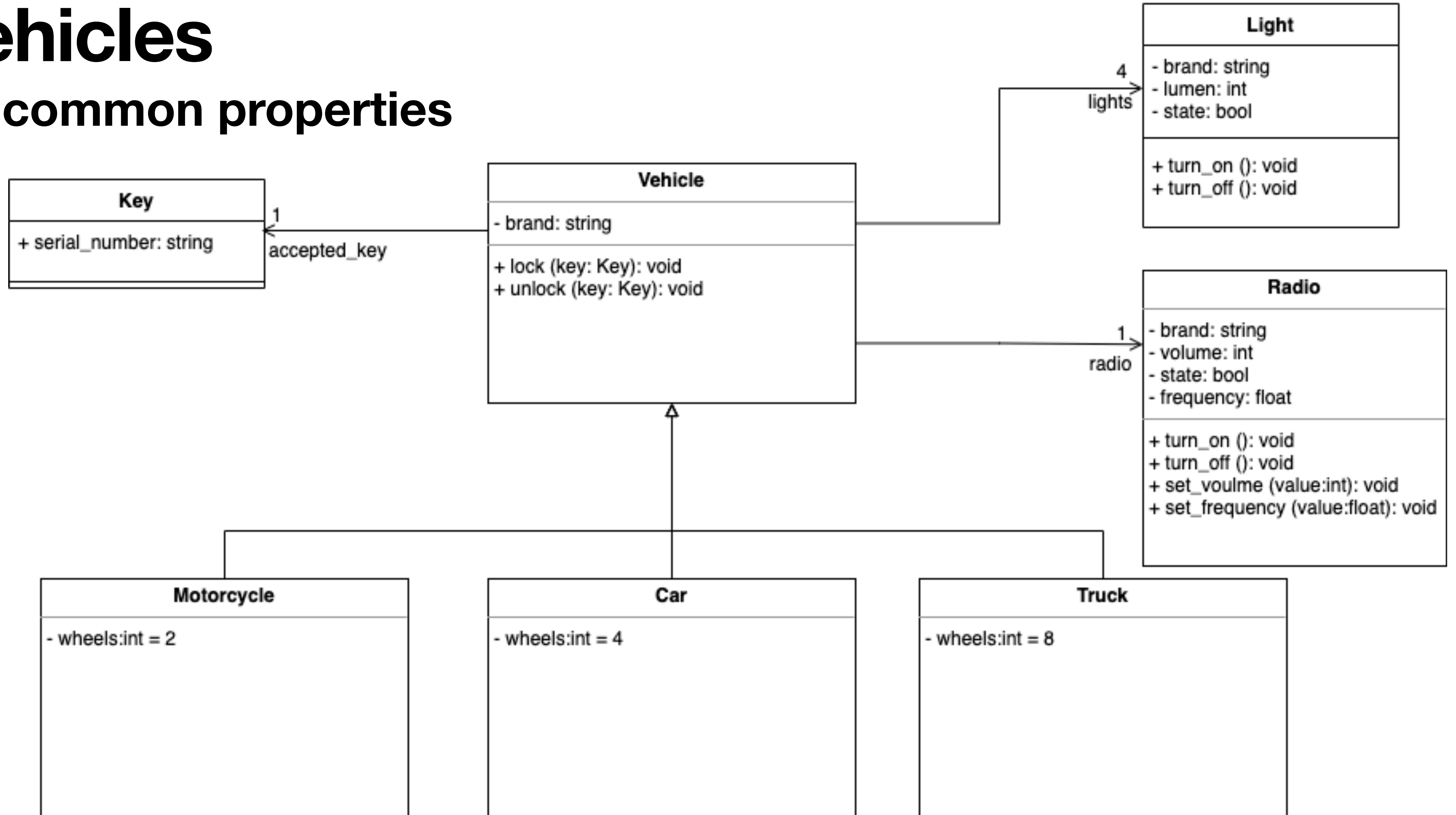
Vehicles

All common properties



Vehicles

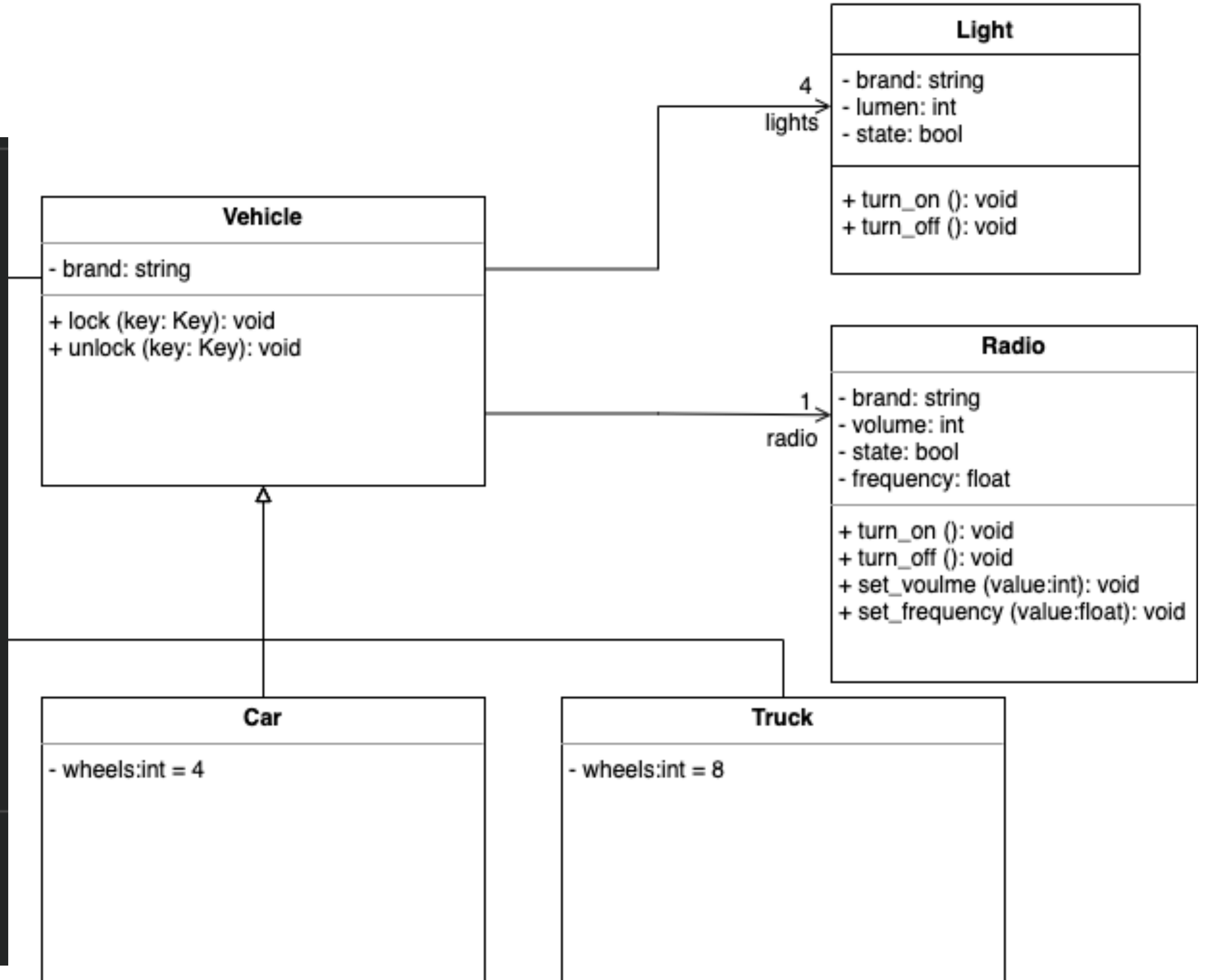
All common properties



Vehicles

In Code

```
class Vehicle {  
    private string $brand;  
    private array $lights;  
    private Radio $radio;  
    private Key $accepted_key;  
  
    public function unlock(Key $key){  
  
    }  
  
    public function lock(Key $key) {  
  
    }  
}  
  
class Car extends Vehicle {  
    private $wheels = 4;  
}
```



Class VS Object??

Q&A