



Unidade Curricular

“Padrões e Desenho de Software”

#13 –Behavioral Patterns (3)

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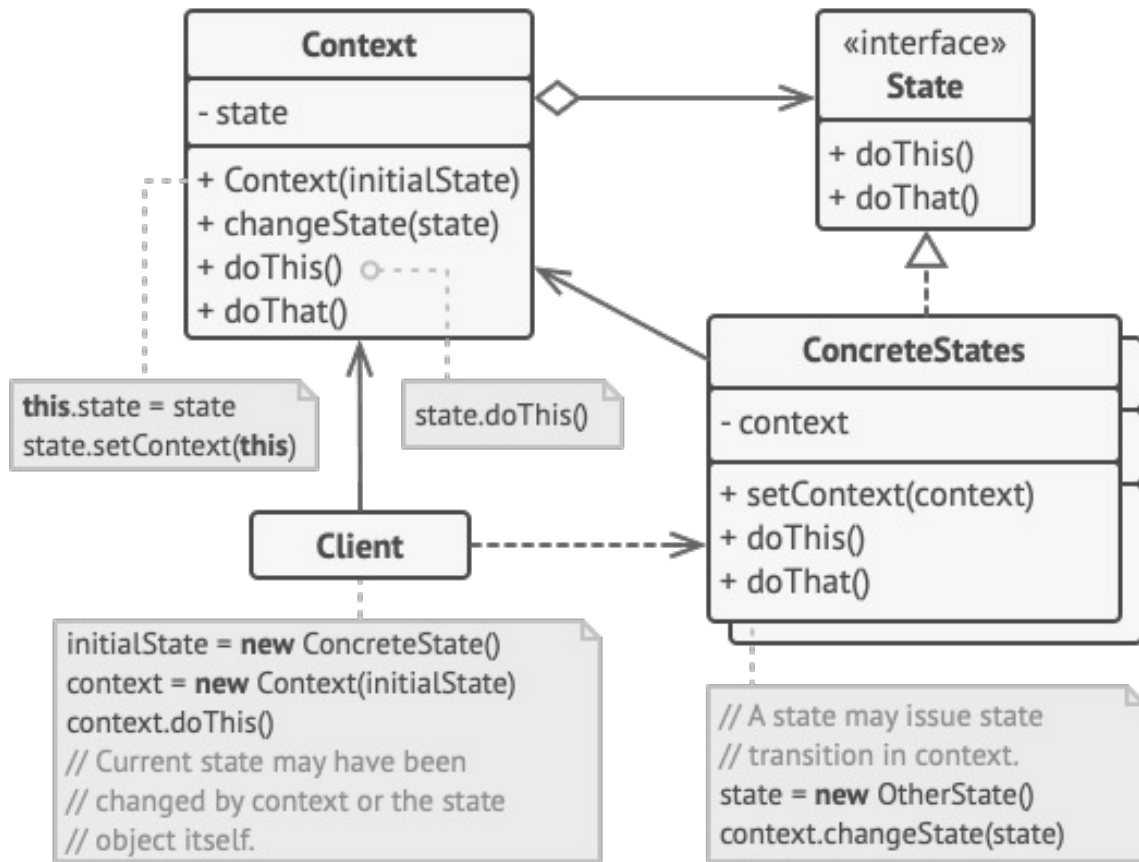
Outline

State Pattern

Strategy Pattern

Visitor Pattern

Presentations



State Design Pattern

- **20 minutes** to explore the following problem:

Implement a simple example in Java demonstrating the State design pattern for a CeilingFan with a pull chain.

Example of a main:

```

public static void main(String[] args) {
    CeilingFan fan = new CeilingFan();
    System.out.println("Current state: " + fan.getState());

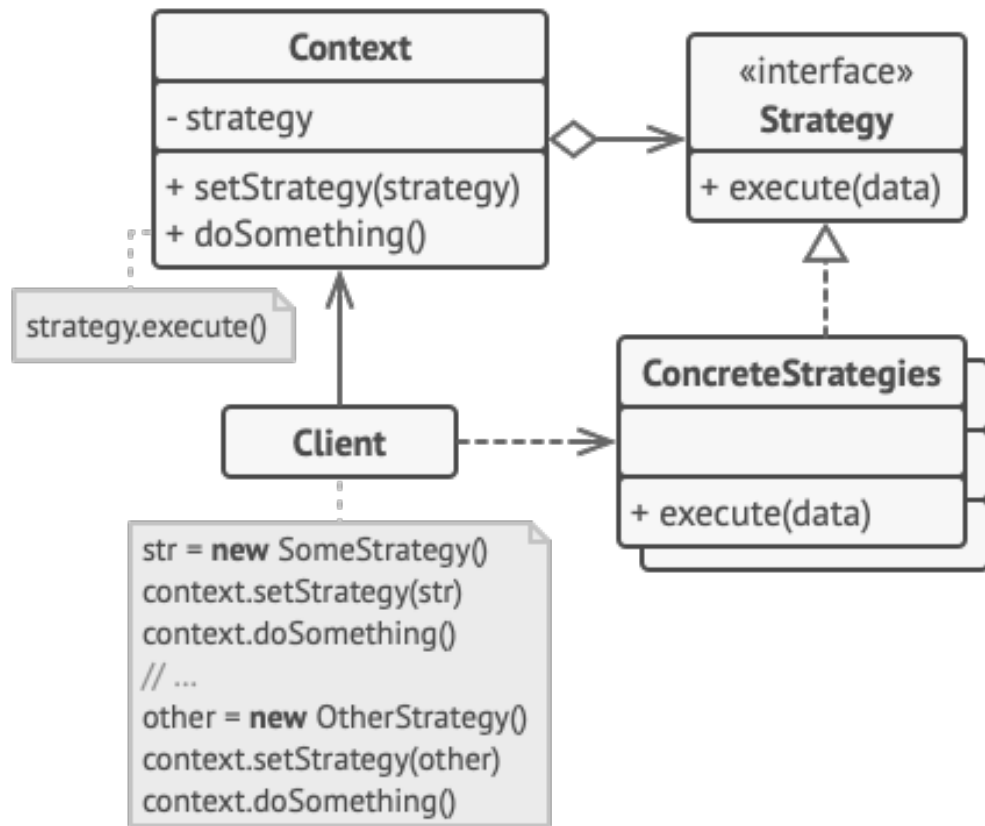
    fan.pull(); // Turn on low speed
    System.out.println("Current state: " + fan.getState());

    fan.pull(); // Switch to medium speed
    System.out.println("Current state: " + fan.getState());

    fan.pull(); // Switch to high speed
    System.out.println("Current state: " + fan.getState());

    fan.pull(); // Turn off the fan
    System.out.println("Current state: " + fan.getState());
}
  
```

Submit the implementation on the e-learning.



Strategy Design Pattern

- **20 minutes** to explore the following problem:

Implement a simple Java program that demonstrates the Strategy design pattern for performing different operations on a pair of numbers.

Example of a main:

```

public static void main(String[] args) {
    NumberProcessor processor = new NumberProcessor(new AddOperation());
    int result = processor.performOperation(5, 3);
    System.out.println("5 + 3 = " + result);

    processor.setOperation(new SubtractOperation());
    result = processor.performOperation(10, 4);
    System.out.println("10 - 4 = " + result);

    processor.setOperation(new MultiplyOperation());
    result = processor.performOperation(5, 3);
    System.out.println("5 x 3 = " + result);

    processor.setOperation(new DivideOperation());
    result = processor.performOperation(10, 2);
    System.out.println("10 / 2 = " + result);
}
  
```

Submit the implementation on the e-learning.

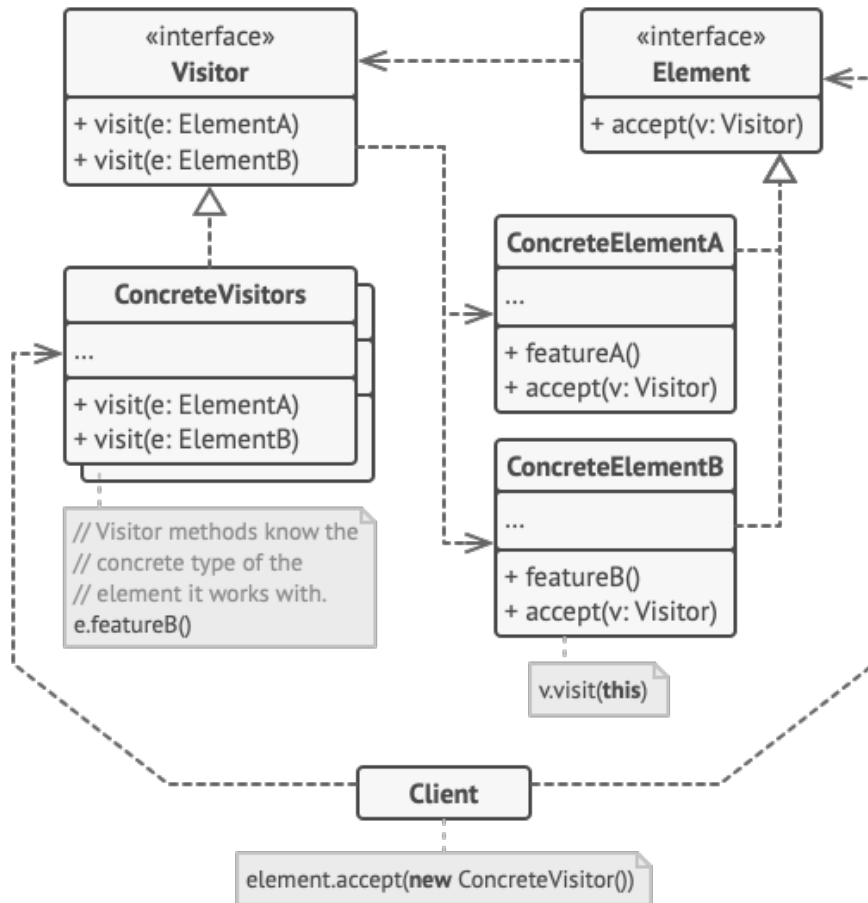
Let's take a short break
10 Minutes

You are free to go grab
a coffee, water, etc.

But... 10 minutes **is 10 minutes** (600 seconds, **not 601 seconds!**)



10 minutes



Visitor Design Pattern

- **20 minutes** to explore the following problem:

Implement a simple Java program that demonstrates the Visitor design pattern for printing information about geometric figures.

Example of a main:

```

public static void main(String[] args) {
    Circle circle = new Circle(5);
    Rectangle rectangle = new Rectangle(3, 4);

    InfoVisitor visitor = new InfoVisitor();

    circle.accept(visitor);
    rectangle.accept(visitor);
}
  
```

Submit the implementation on the e-learning.

Time for the
colleagues 😊

