Unidade Curricular

“Padrões e Desenho de Software”

#12 –Behavioral Patterns (2)

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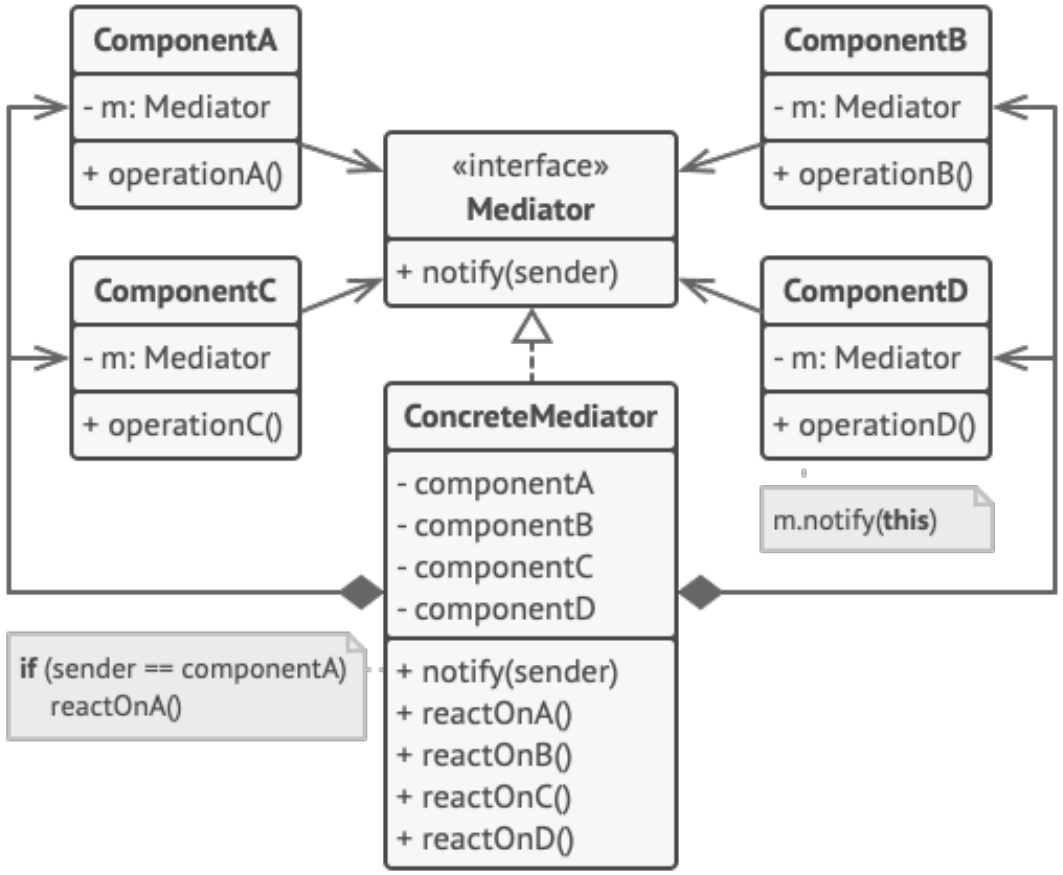
Outline

- Quiz
- Practical Exam
- Mediator Pattern
- Observer Pattern
- Presentations

Practical Exam

- 5 junho 15h30 – 18h30 (duração 1h30 – 2h00, 2 sessões)
- Salas 11.2.7, 11.2.8 e 11.2.22 (+/- 60 computadores)
- Ferramentas:
  - Corpo e mente
  - Documentação da UC existente na pasta e-learning (partilhada)
  - Documentação JAVA
  - Papel & caneta
  - Computator com SO Linux, editor de texto (qualquer) e SDK Java



Mediator Design Pattern

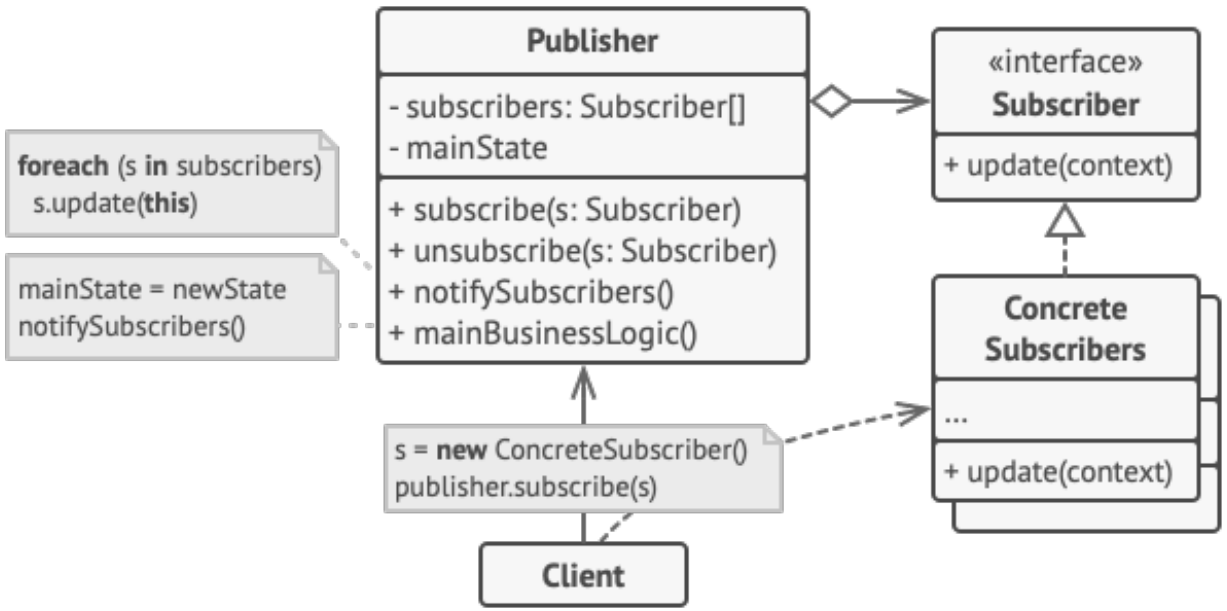
- **30 minutes** to explore the following problem:

Imagine you are designing a system to manage the communication between entities (e.g. students). Implement a simple example in Java demonstrating the Mediator design pattern. Assume that each message sent by a student should be broadcasted to all the students.

Example of a main:

```
public static void main(String[] args) {
      ChatMediator mediator = new ChatMediator();
      Colleague c1 = new Colleague(mediator);
      Colleague c2 = new Colleague(mediator);
      mediator.addColleague(c1);
      mediator.addColleague(c2);
      c1.sendMessage();
      c2.sendMessage();
      c1.sendMessage();
      c2.sendMessage();
}
```

Submit the implementation on the e-learning.



Observer Design Pattern

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

The Observer Design Pattern is a behavioral pattern where an object, known as the subject, maintains a list of its dependents, called observers, and notifies them of any state changes. This pattern is commonly used in scenarios where changes in one object need to be communicated to a set of other objects.

Implement a simple Java program that demonstrates the Observer Design Pattern with a weather monitoring application. The program simulates weather measurements (temperature and humidity) and displays these measurements using observers.

Example of a main:

```
public static void main(String[] args) {
    WeatherData weatherData = new WeatherData();

    CurrentConditionsDisplay currentDisplay = new
    CurrentConditionsDisplay();
    StatisticsDisplay statisticsDisplay = new
    StatisticsDisplay();

    weatherData.registerObserver(currentDisplay);
    weatherData.registerObserver(statisticsDisplay);

    weatherData.setMeasurements(28, 65);
    weatherData.setMeasurements(22, 70);
    weatherData.setMeasurements(26, 90);
    }
```

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

Time for the colleagues ☺