

CS 130: Software Engineering

Lab 1C: Week 2 Discussion

Agenda

- Group Project: Part A
- Group Meeting: Status Update
- Quiz 1
- Strategy Pattern
- Break
- Observer Pattern
- Mediator Pattern

Group Project: Part A



Group Project: Part A

- Any questions?
- Everyone should have a team by now
- Grading
 - 6% of your entire course grade!
 - Report
 - Presentation
 - Peer Evaluation
 - Please grade your own teammates based on their contribution for Part A
 - 3 things you like about other team's idea
 - Suggest 3 features that other team should implement

Group Project: Part A

- My Github username: djkim02
- Setup Trello
- Setup a mandatory weekly meeting with your teammates
- Setup Messenger

Quiz 1

- Any questions?
- Problem 2: Return types of `request()` and `specificRequest()` doesn't matter
- Difficulty: Easy, Medium, Hard?
- Were the lectures helpful for the quiz?
- Was the lab section helpful for the quiz?
- Any concerns, comments?

Why Use Design Patterns?

- Easy to recognize and identify
- Solutions for recurring problems



Design Pattern Cheat Sheet

- 4 Steps of Mastering Design Patterns
 - Key terms
 - Real-life analogy
 - Class diagram
 - Code examples

Strategy Pattern: Key Terms

- Family of **Algorithms**
- **Interchangeable**
- **Dynamic**
- **Client**
- **Strategy**

Strategy Pattern: “Real Life” Analogy



I can jump and
jump attack!



I can spin jump
and jump attack!

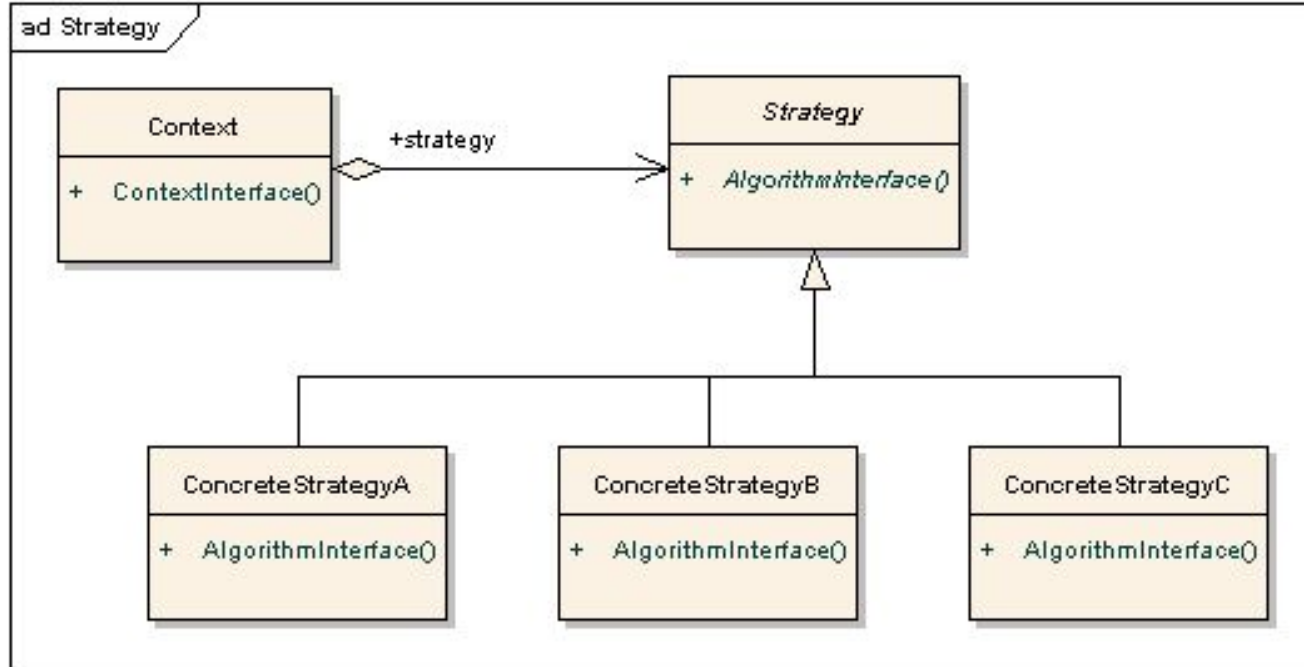


I can spin jump
and fire attack!



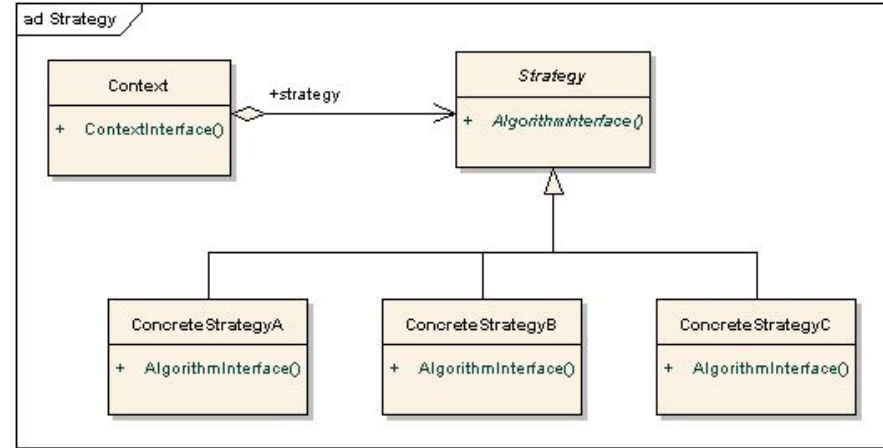
I can cape jump
and cape attack!

Strategy Pattern: Class Diagram



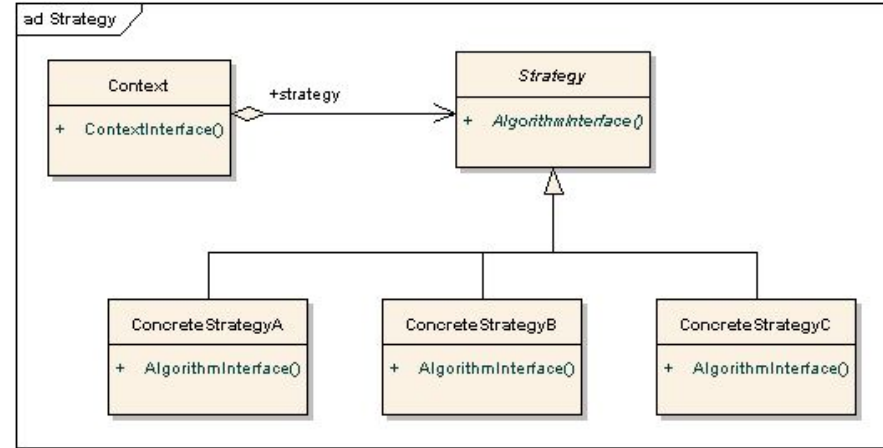
Strategy Pattern: Class Diagram

- What is the **Context**?



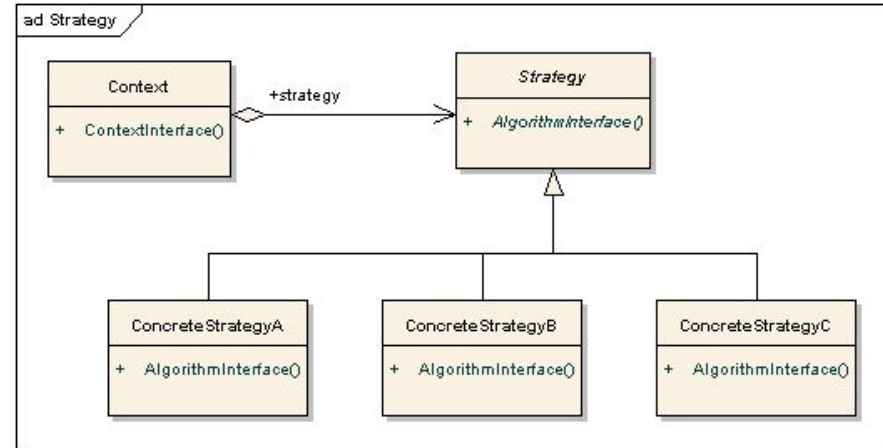
Strategy Pattern: Class Diagram

- What is the **Context**?
 - Mario



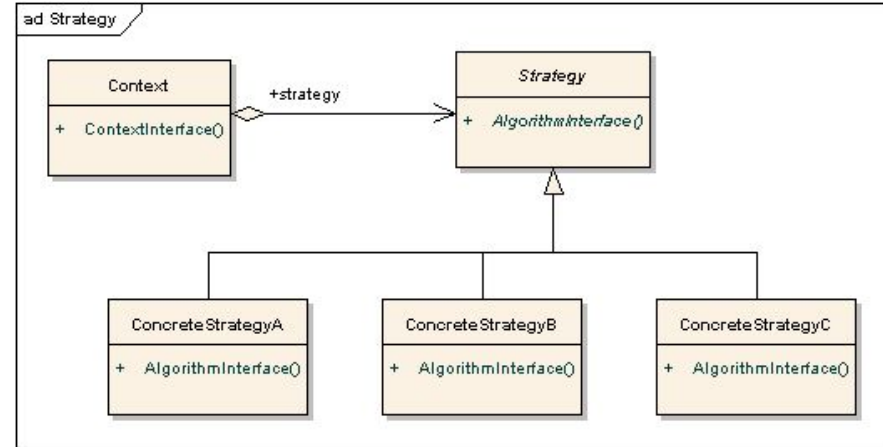
Strategy Pattern: Class Diagram

- What is the **Context**?
 - Mario
- What are the **Strategies**?



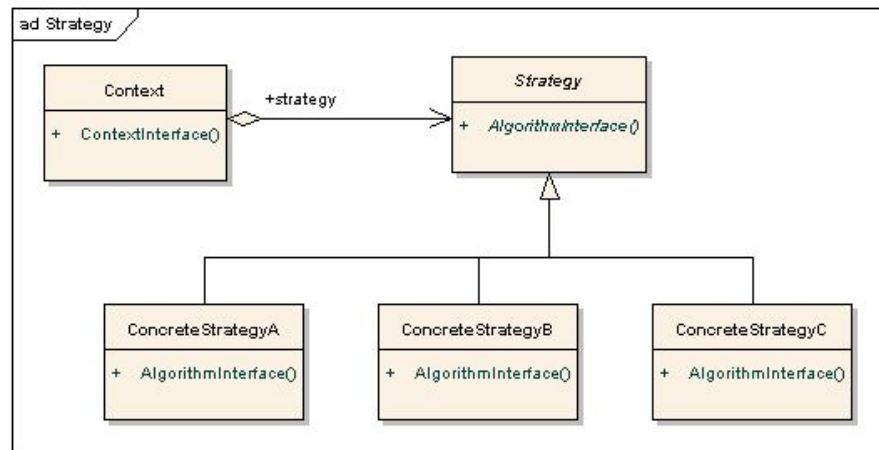
Strategy Pattern: Class Diagram

- What is the **Context**?
 - Mario
- What are the **Strategies**?
 - Attack
 - Jump



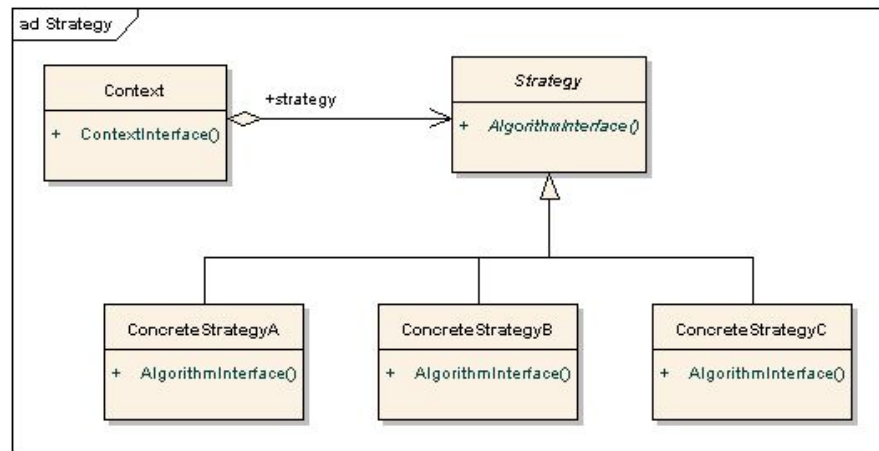
Strategy Pattern: Class Diagram

- What is the **Context**?
 - Mario
- What are the **Strategies**?
 - Attack
 - Jump
- What are the **ConcreteStrategies**?



Strategy Pattern: Class Diagram

- What is the **Context**?
 - Mario
- What are the **Strategies**?
 - Attack
 - Jump
- What are the **ConcreteStrategies**?
 - JumpAttack, FireAttack, CapeAttack
 - Jump, SpinJump, FlyJump



Strategy Pattern: Implementation

- Let's try implementing the scenario together
- StrategyExample.java


Break

- Mario will be back for State Pattern!
 - Will be covered next week
- After the break, we will go over Observer and Mediator pattern

Observer Pattern: Key Terms

- **One-to-Many**
- **Register**
- **Notify**
- **Subject**
- **Observer**

Observer Pattern: Real Life Analogy

**Ricky Yingjia Lee**
October 2 at 11:20pm · Los Angeles

AND ITS WEEK TWO! almost time to actually open those books... we have another amazing week of events coming up for computer science students (and a few events for their bellies)~~~

MON OCT 3RD
LIFERAY TECHTALK (UPE) || 6PM || Penthouse (BH8500)
come eat FREE PIZZA and learn about liferay's wedeploy project!
<https://www.facebook.com/events/311573405874316/>

TUES OCT 4TH
ACM FALL GENERAL MEETING || 6PM || CNSI
come learn all about ACM, the biggest cs club at UCLA!
<https://www.facebook.com/events/681002458725148/>
VIASAT INFOSESSION (UPE) || 6PM || Young CS50
enjoy a TACOBAR for dinner and learn about an INTERNSHIP/FULLTIME at ViaSat!
<https://www.facebook.com/events/337808999894160/>

WED OCT 5TH
ACM AI GENERAL MEETING || 6PM || Clubhouse (BH2763)
come to ACM AI's first event of the quarter!
<https://www.facebook.com/events/210933215991627/>
HACK SCHOOL (ACM) || 7PM || BH2760
come learn this 7 week course with acm hack!
<https://www.facebook.com/events/883136111831398/>

THURS OCT 6TH
RESUME WORKSHOP (UPE) || 6PM || Clubhouse (BH2763)
come and get resume critique for the upcoming career fairs!
VR/CG Workshop (ACM) || 6PM || Clubhouse (BH2763)
come to ACM VR/CG's first meeting to learn about vrcg!
<https://www.facebook.com/events/555241198015921/>

FRI OCT 7TH
ACM-W GENERAL MEETING || 6PM || Penthouse (BH8500)
meet the acm-w officers and find out about the mentorship program!

Computer Science
Open Group within UCLA


Discussion | Members | Events | Videos | Photos | Files

Write Post | Add Photo / Video | Create Poll | More



Write something...

PINNED POST

**Ricky Yingjia Lee**
October 2 at 11:20pm · Los Angeles

AND ITS WEEK TWO! almost time to act another amazing week of events coming (and a few events for their bellies)~~~

MON OCT 3RD
LIFERAY TECHTALK (UPE) || 6PM || Pen
come eat FREE PIZZA and learn about li
[See More](#)

   You, Jayendra Jog, Andrew Wong and

Like | Comment | Share

Save post

Turn on notifications for this post

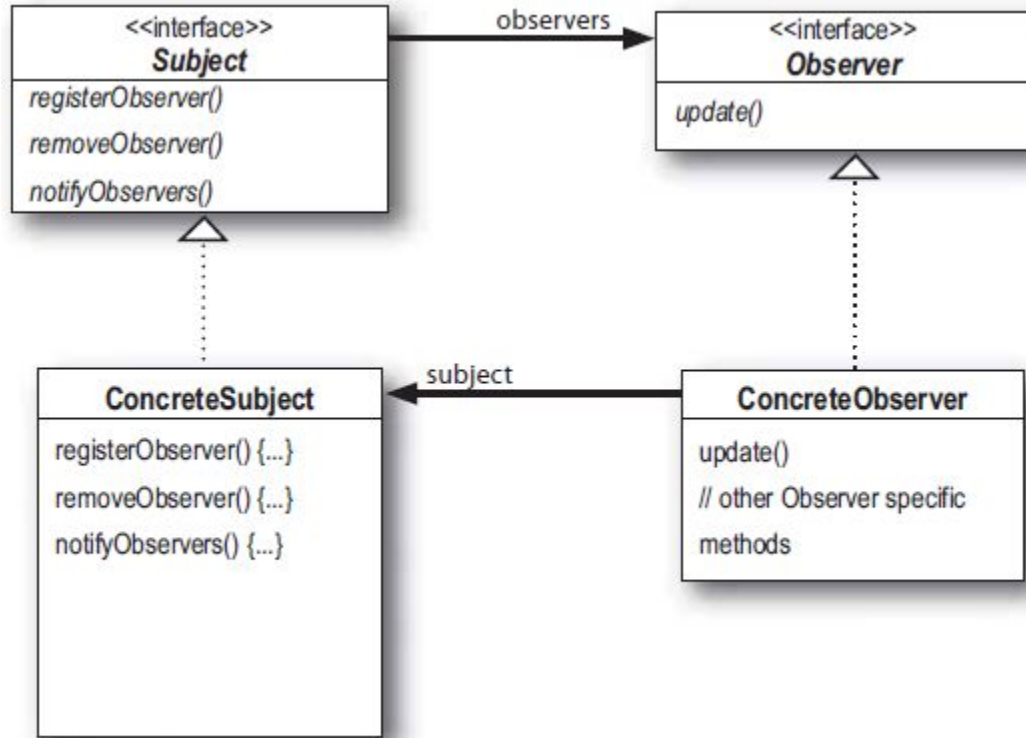
View edit history

Start group chat

Report to Admin

Report post

Observer Pattern: Class Diagram



Observer Pattern: Class Diagram

- What is the **Subject**?

Observer Pattern: Class Diagram

- What is the **Subject**?
 - Facebook post

Observer Pattern: Class Diagram

- What is the **Subject**?
 - Facebook post
- What is the **ConcreteSubject**?

Observer Pattern: Class Diagram

- What is the **Subject**?
 - Facebook post
- What is the **ConcreteSubject**?
 - Facebook Group post

Observer Pattern: Class Diagram

- What is the **Subject**?
 - Facebook post
- What is the **ConcreteSubject**?
 - Facebook Group post
- What is the **Observer**?

Observer Pattern: Class Diagram

- What is the **Subject**?
 - Facebook post
- What is the **ConcreteSubject**?
 - Facebook Group post
- What is the **Observer**?
 - Facebook user

Observer Pattern: Class Diagram

- What is the **Subject**?
 - Facebook post
- What is the **ConcreteSubject**?
 - Facebook Group post
- What is the **Observer**?
 - Facebook user
- What is the **ConcreteObserver**?

Observer Pattern: Class Diagram

- What is the **Subject**?
 - Facebook post
- What is the **ConcreteSubject**?
 - Facebook Group post
- What is the **Observer**?
 - Facebook user
- What is the **ConcreteObserver**?
 - Group members

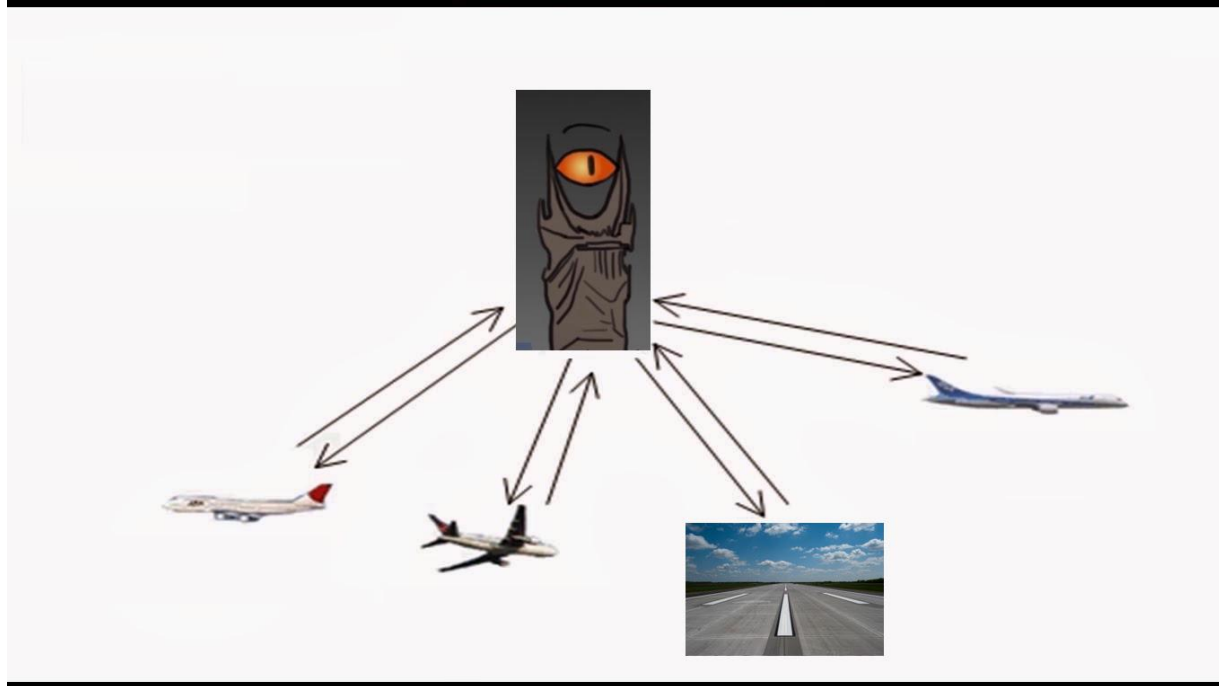
Observer Pattern: Implementation

- Let's try implementing the scenario together
- `ObserverExample.java`

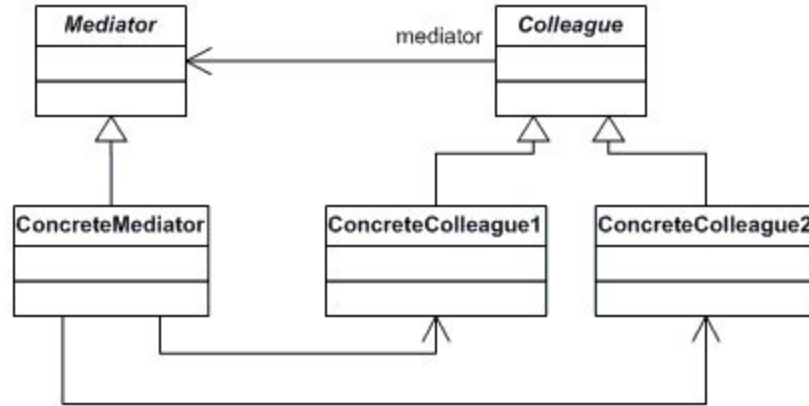
Mediator Pattern: Key Terms

- **Many-to-Many**
- Ease of **Communication**
- **Mediator**
- **Colleague**

Mediator Pattern: Real Life Analogy

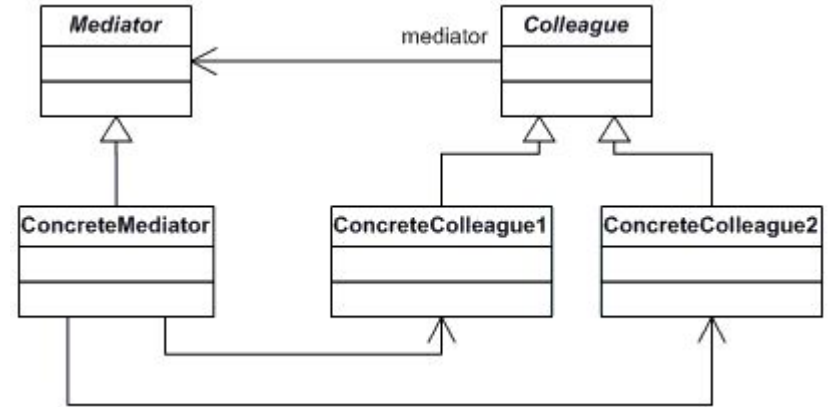


Mediator Pattern: Class Diagram



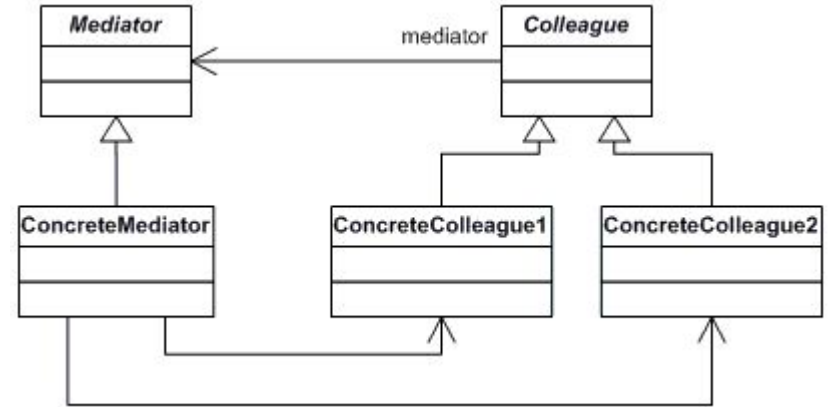
Mediator Pattern: Class Diagram

- What is the ConcreteMediator?



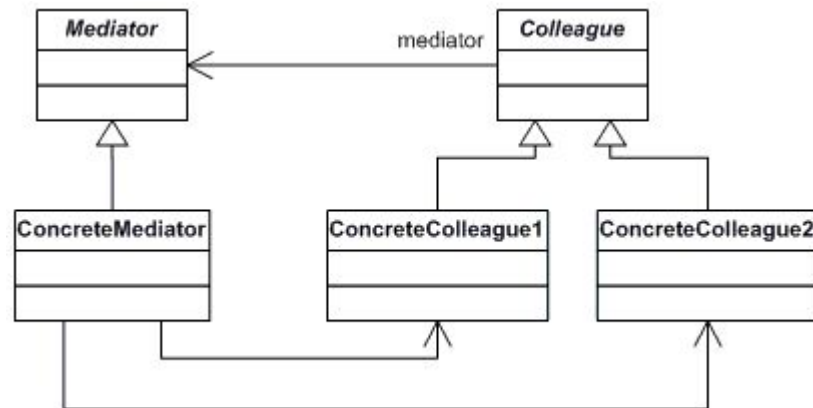
Mediator Pattern: Class Diagram

- What is the ConcreteMediator?
 - Air Traffic Controller



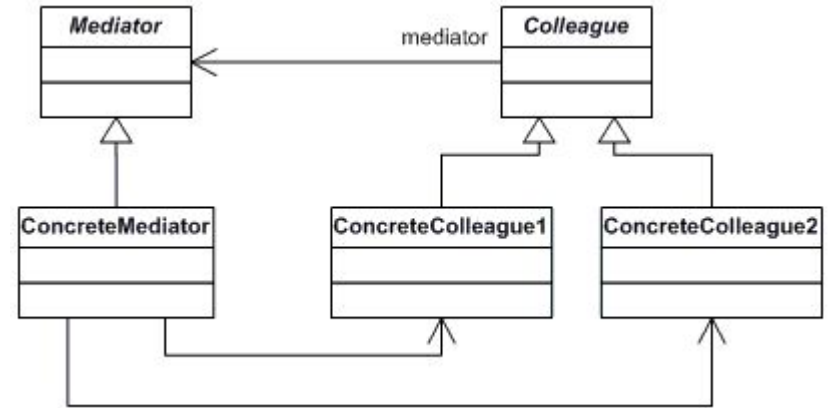
Mediator Pattern: Class Diagram

- What is the ConcreteMediator?
 - Air Traffic Controller
- What are the ConcreteColleagues?



Mediator Pattern: Class Diagram

- What is the ConcreteMediator?
 - Air Traffic Controller
- What are the ConcreteColleagues?
 - Flight
 - Runway



Mediator Pattern: Implementation

- Let's try implementing the scenario together
- MediatorExample.java

Sample Codes are uploaded on Github

- <https://github.com/djkim02/CS130-Fall16>

Next week

- Part A presentation!