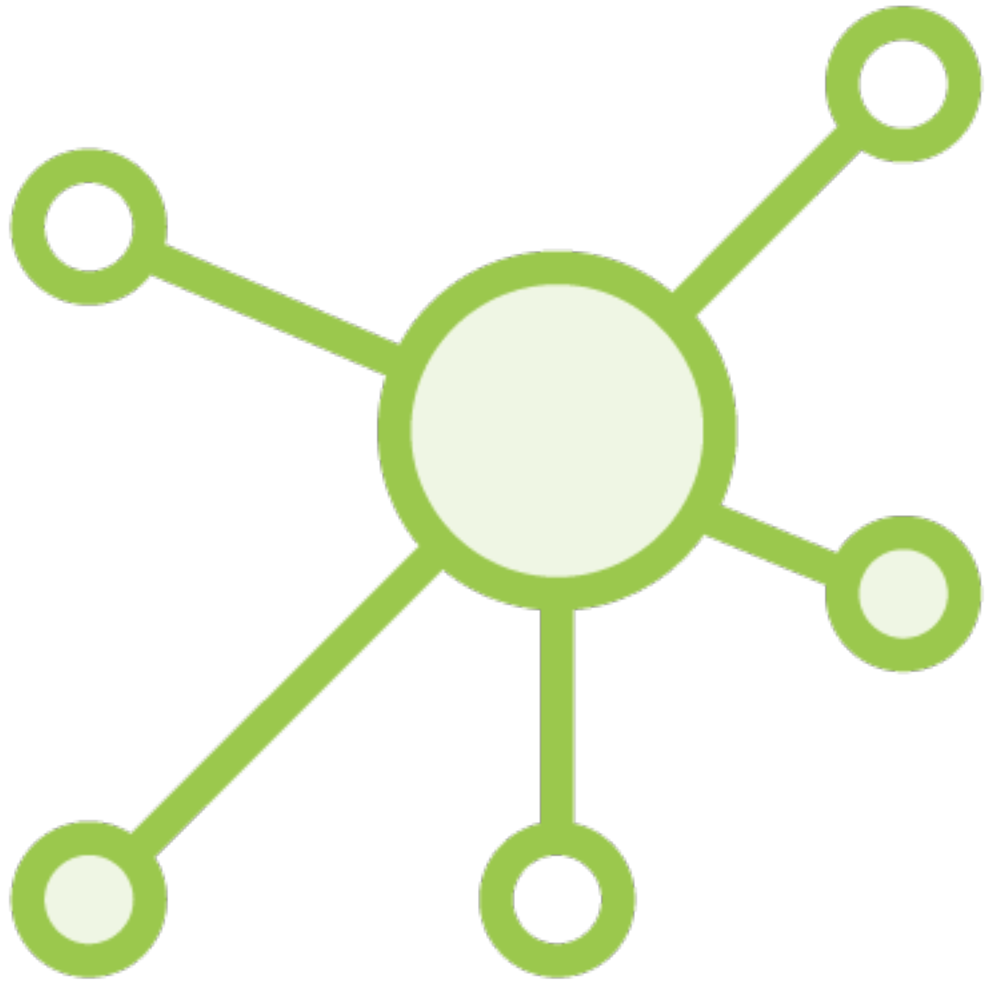
Observer Pattern

Bryan Hansen

twitter: bh5k | http://www.linkedin.com/in/hansenbryan

Concepts

- One to Many
- Decoupled
- Event Handling
- Pub/Sub
- M-V-C
- Examples:
  - java.util.Observer
  - java.util.EventListener
  - javax.jms.Topic



Design

Subject

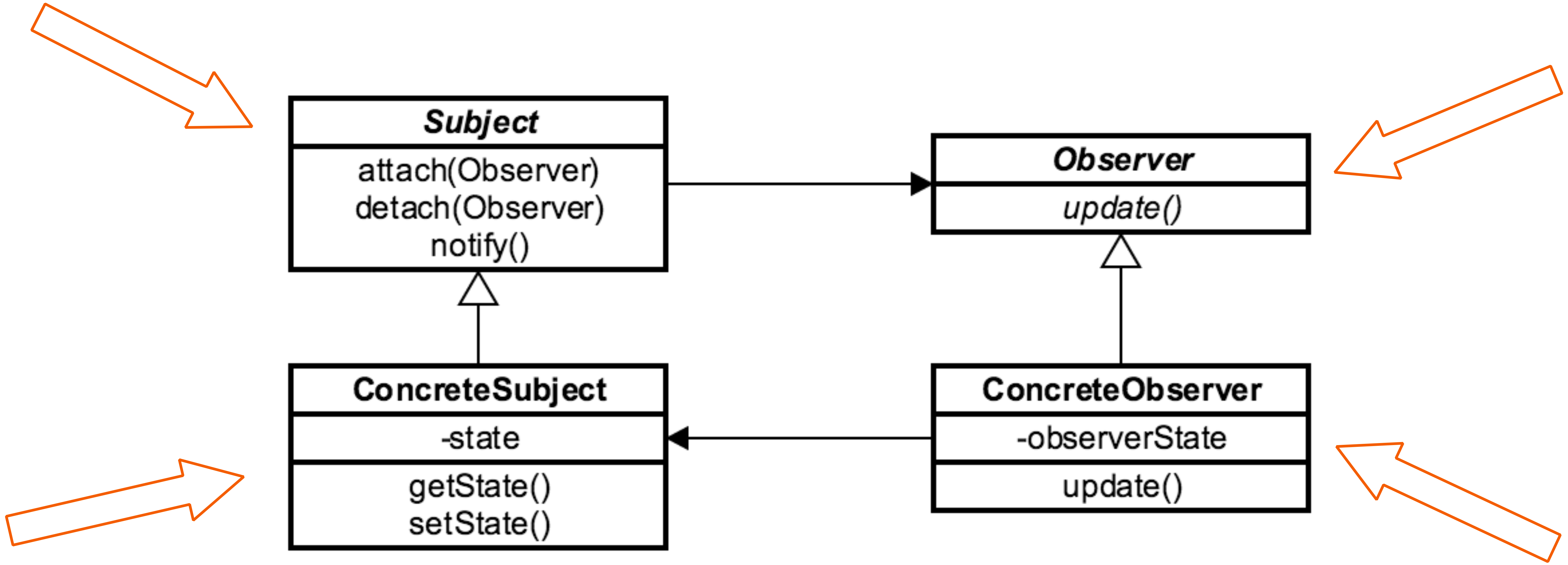
Observer

Observable

Views are Observers

Subject, Concrete Subject, Observer, Concrete Observer

UML



Subject
attach(Observer)
detach(Observer)
notify()
Observer
update()
ConcreteSubject
-state
getState()
setState()
ConcreteObserver
-observerState
update()

Everyday Example - Observer

```
TwitterStream messageStream = new TwitterStream();

Client client1 = new Client("Bryan");

Client client2 = new Client("Mark");

messageStream.addObserver(client1);
messageStream.addObserver(client2);

messageStream.someoneTweeted();
```

Exercise Observer

Subject, ConcreteSubject, Observer, ConcreteObserver

Compare Observer

Pitfalls

- Unexpected updates
- Large sized consequences
- What changed
- Debugging difficult

Contrast

Observer

- One-to-Many
- Decoupled
- Broadcast Communication

Mediator

- One-to-one-to-Many
- Decoupled
- Complex Communication

Observer Summary

- Decoupled communication
- Built in functionality
- Used with mediator