

# Design Patterns

with an Emphasis on  
Gang of Four

# Design Patterns – WHY?

- Good programming practice
- They solve common problems
- If you can recognize that you need them, they will make your life and coding easier
- Resulting code is easy to manage & maintain
- Any other reasons why you use them?

# Design Patterns

- Ones you have seen on Monday
  - Singleton
  - (Abstract)Factory
- Ones we will focus today
  - Adapter
  - Observer

- Tons of others available at:

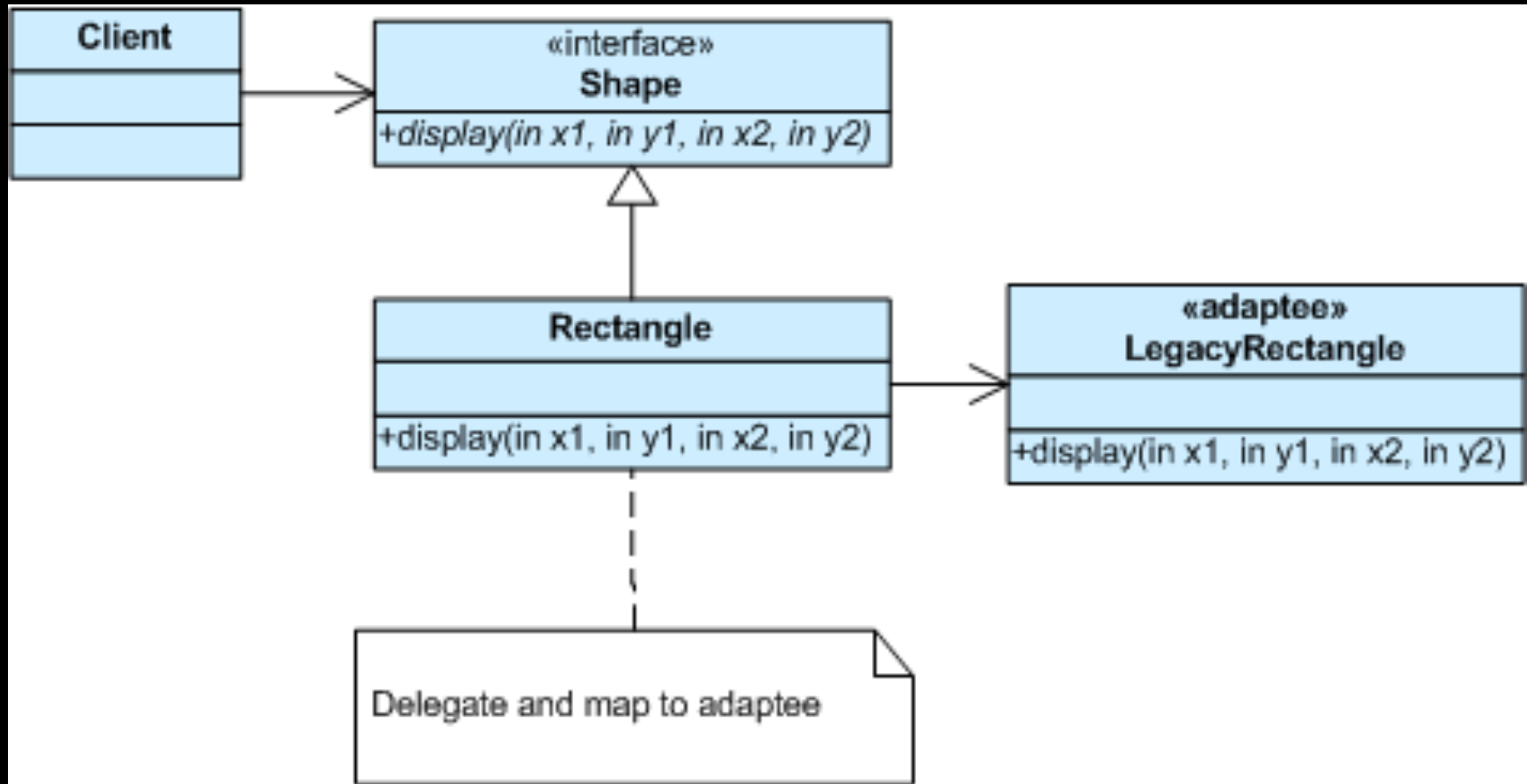
[http://sourcemaking.com/design\\_patterns](http://sourcemaking.com/design_patterns)

# Adapter Pattern

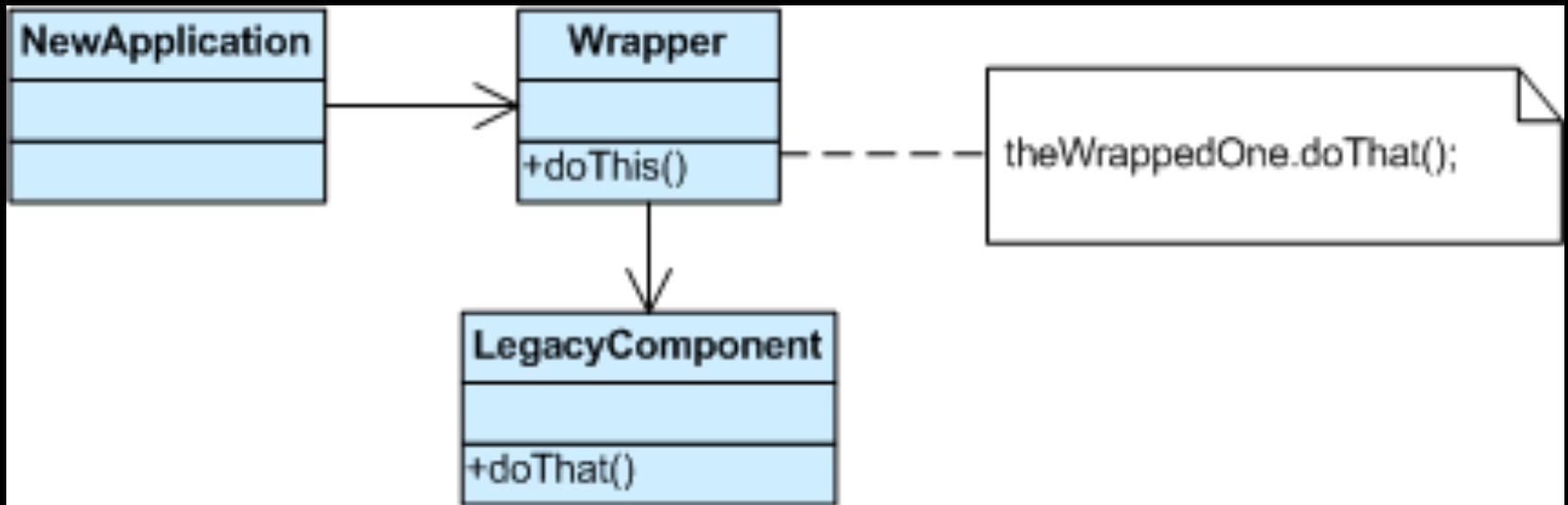
“An “off the shelf” component offers compelling functionality that you would like to reuse, but its “view of the world” is not compatible with the philosophy and architecture of the system currently being developed.”

[http://sourcemaking.com/design\\_patterns/adapter](http://sourcemaking.com/design_patterns/adapter)

# Adapter Example



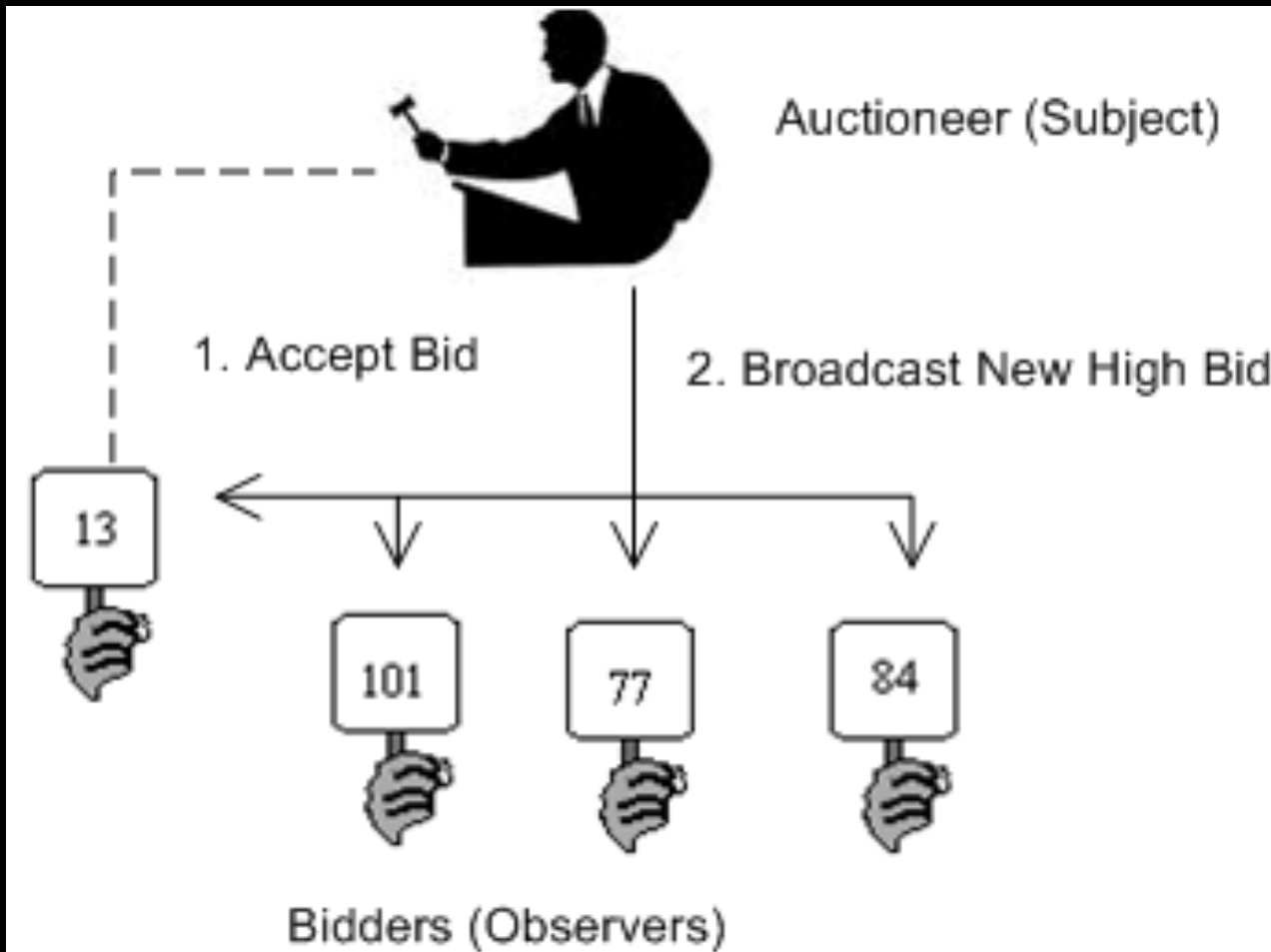
# Adapter (High Level)



# Observer Pattern

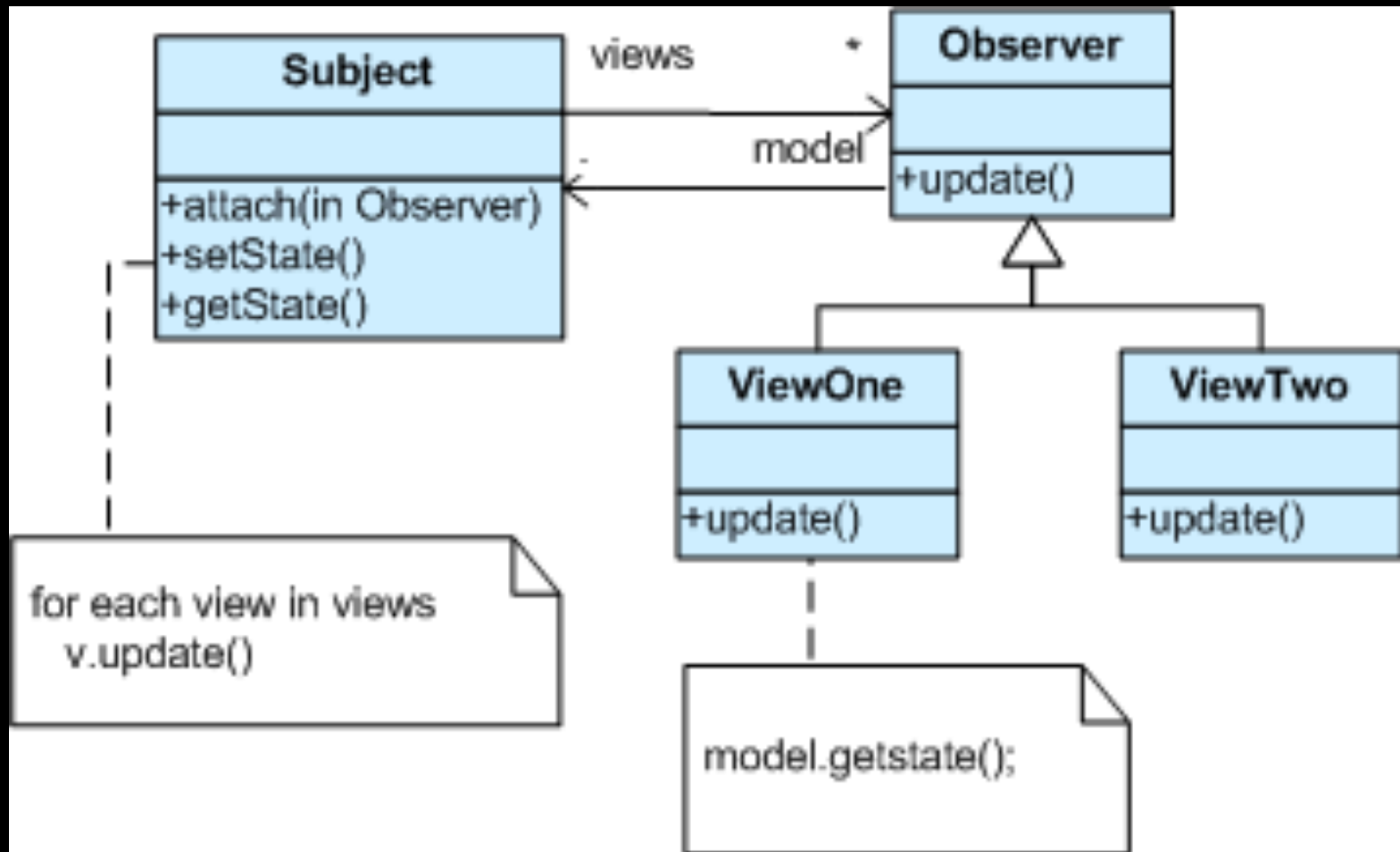
- A type 'A' produces (keeps) events/data
- Type 'B' is interested in these events/data
  - Wants to observe 'A'
- 'A' lets a special type 'C' to register itself and get notified as these events/data is being generated
- 'B' implements 'C' and registers itself to 'A' during creation

# Observer Example





# Observer (High Level)



# Git Lecture

- Any questions about Git?

# Reminders

- SDS is due today @11 PM
- You should start coding soon! (If you have not already)
  - Your next assignment is ZFR
- Progress report due Friday @11 PM (as usual)