Learn the Lingo
Design Patterns

Presented by Jeremy Clark
www.jeremybytes.com
What Are Design Patterns?

“What each pattern describes a problem which occurs over and over again in our environment, and then describes the core of the solution to the problem, in such a way that you can use this solution a million times over, without ever doing it the same way twice.”

-- Christopher Alexander
The Gang Of Four (GoF)

Design Patterns: Elements of Reusable Object-Oriented Software

• Erich Gamma
• Richard Helm
• Ralph Johnson
• John Vlissides
Anatomy Of A Design Pattern

• Pattern Name
  • A unique way of referring to the pattern

• Problem
  • The problem that occurs “over and over again”

• Solution
  • The “core” of the solution

• Consequences
  • The drawbacks or considerations when using the pattern
The GoF Patterns

Abstract Factory  Decorator  Mediator
Builder            Facade      Memento
Factory Method     Flyweight   Observer
Prototype          Proxy       State
Singleton          Chain of Responsibility  Strategy
Adapter            Command    Template Method
Bridge             Interpreter Visitor
Composite
A More Approachable Reference

• Head First Design Patterns
  • Eric Freeman
  • Elisabeth Freeman

Covers 12 GoF Patterns
Why Should We Care?

• Well described solutions
• Shared vocabulary
• Concise language
• Think in design rather than implementation
• Encourage other developers to learn patterns
Observer

GoF Description:

“Define a one-to-many dependency between objects so that when one object changes state, all its dependents are notified and updated automatically.”
Real World Observer

- Twitter
 Proxy

GoF Description:

“Provide a surrogate or placeholder for another object to control access to it.”
Real World Proxy

- Power of Attorney

©Jeremy Clark 2016
Chain Of Responsibility

GoF Description:

“Avoid coupling the sender of a request to its receiver by giving more than one object a chance to handle the request. Chain the receiving objects and pass the request along the chain until an object handles it.”
Real World Chain Of Responsibility

• Tech Support
Iterator

GoF Description:

“Provide a way to access the elements of an aggregate object sequentially without exposing its underlying representation.”
Real World Iterator

• TV Remote
Facade

GoF Description:

“Provide a unified interface to a set of interfaces in a subsystem. Facade defines a higher-level interface that makes the subsystem easier to use.”
• Play DVD
  • Turn on TV
  • Set TV to HDMI1
  • Turn on Stereo
  • Set Stereo to Aux Input
  • Turn on DVD Player
  • “Play” on DVD Player

Real World Facade
“Each pattern describes a problem which occurs over and over again in our environment, and then describes the core of the solution to the problem, in such a way that you can use this solution a million times over, without ever doing it the same way twice.”

-- Christopher Alexander
Why Should We Care?

- Well described solutions
- Shared vocabulary
- Concise language
- Think in design rather than implementation
- Encourage other developers to learn patterns
Thank You!

Jeremy Clark

• http://www.jeremybytes.com
• jeremy@jeremybytes.com
• @jeremybytes

©Jeremy Clark 2016