COMP2511

Design Patterns Summary

Prepared by

Dr. Ashesh Mahidadia

Design Patterns

Creational Patterns

- Factory Method
- Abstract Factory
- Builder
- Singleton

Structural Patterns

- Adapter
- Composite
- Decorator
- Façade

Behavioral Patterns

- Iterator
- Observer
- State
- Strategy
- Template
- Visitor
- Command Pattern

The lecture slides use material from the Head First Design Patterns reference book.

Quiz...

Description
Wraps an object and provides a different interface to it.
Subclasses decide how to implement steps in an algorithm.
Subclasses decide which concrete classes to create.
Ensures one and only one object is created.
Encapsulates interchangeable behaviors and uses delegation to decide which one to use.
Clients treat collections of objects and individual objects uniformly.
Encapsulates state-based behaviors and uses delegation to switch between behaviors.
Provides a way to traverse a collection of objects without exposing its implementation.

Quiz...

Simplifies the interface of a set of classes.

Wraps an object to provide new behavior.

Allows a client to create families of objects without specifying their concrete classes.

Allows objects to be notified when state changes.

Encapsulates a request as an object.

Design Patterns Summary

- Let Design Patterns emerge in your designs; don't force them in just for the sake of using a pattern.
- Design Patterns aren't set in stone; adapt and tweak them to meet your needs.
- Always use the simplest solution that meets your needs, even if it doesn't include a pattern.
- Study Design Patterns catalogs to familiarize yourself with patterns and the relationships among them.
- Pattern classifications (or categories) provide groupings for patterns. When they help, use them.
- Remember, most patterns you encounter will be adaptations of existing patterns, not new patterns.
- Build your team's shared vocabulary. This is one of the most powerful benefits of using patterns.

End