Object-Oriented Technology and UML

Optional Topics in the Seminar

Optional Topics

- A design pattern from the 23 classic design patterns
- A principle from classic principles of object-oriented design
- Forward engineering and reverse engineering
- UML 4+1 view
- Applications of UML
- Any other topics associated with UML
- ……

23 Classic Design Patterns

Creational Patterns: Used to construct objects such that they can be decoupled from their implementing system.

Structural Patterns: Used to form large object structures between many disparate objects.

Behavioral Patterns: Used to manage algorithms, relationships, and responsibilities between objects.

Object Scope: Deals with object relationships that can be changed at runtime.

Class Scope: Deals with class relationships that can be changed at compile time.

C	Abstract Factory	S	Decorator	C	Prototype
S	Adapter	S	Facade	S	Proxy
S	Bridge	C	Factory Method	B	Observer
C	Builder	S	Flyweight	C	Singleton
B	Chain of Responsibility	B	Interpreter	B	State
		B	Iterator	B	Strategy
B	Command	B	Mediator	B	Template Method
S	Composite	B	Memento	B	Visitor

Principles Of Object-oriented Design

- (SRP) The Single Responsibility Principle
- (OCP) The Open Closed Principle
- (LSP) The Liskov Substitution Principle
- (ISP) The Interface Segregation Principle
- (DIP) The Dependency Inversion Principle
- (REP) The Reuse Release Equivalence Principle
- (CCP) The Common Closure Principle
- (CRP) The Common Reuse Principle
- (ADP) The Acyclic Dependencies Principle
- (SDP) The Stable Dependencies Principle
- (SAP) The Stable Abstractions Principle

Requirements

- For each team, choose a topic and make a speech, time is not more than 10 minutes
- For the principles of object-oriented design, the red marked are the candidates