

Object-Oriented Paradigm Concepts

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1 OO Paradigm Concept Inventory

1. Object-Oriented Paradigm

2. Abstraction

- Procedural
- Data
- Object
- Domain

3. Class

4. Object

5. Structure

6. Behavior

7. Unique Identity

8. Template/Blueprint

9. Interface

10. Service

11. Operation

12. Operation Signature

13. Parameter

- Parameterization
- Direction
- Type
- Default Value

14. Visibility

15. Fields

- Static
- Instance
- Data Members

16. Methods

- Header
- Signature
- Return Type
- Body

- Instance Methods
 - Static Methods
 - Member Functions
 - Modifier Methods
 - Query Methods
 - Utility Methods
17. Structural Characteristics
 18. Behavioral Characteristics
 19. Encapsulation
 20. Information Hiding
 21. Separation of Concerns
 22. Object State
 23. Type
 24. Class Constraints
 - Assertion
 - Pre-condition
 - Post-condition
 - Invariants
 - Object Constraint Language (OCL)
 25. Class Diagram
 - Conceptual Perspective
 - Specification Perspective
 - Implementation Perspective
 26. Message
 - Sender
 - Receiver
 - Synchronous Message
 - Asynchronous Message
 27. Method
 - Header
 - Signature
 - Polymorphic
 - Virtual
 - Sealed
 - Overloaded
 28. Class Relationships
 - Association
 - Cardinality
 - Multiplicity
 - Optionality
 - One-to-one
 - One-to-many
 - Many-to-many

- Binary
 - Ternary
 - n -ary
 - Recursive
 - Dependency
 - Aggregation
 - Container Class
 - Contained Class
 - Composition
 - Container Class
 - Contained Class
 - Delegation
 - Generalization
 - Specialization
 - Inheritance
 - Substitution Principle
 - Implementation Inheritance
 - Interface Inheritance
 - Single Inheritance
 - Multiple Inheritance
 - IS-A Relationship
 - HAS-A Relationship
 - KIND-OF Relationship
 - Method Override
 - Polymorphic Method
 - Virtual Method
 - Root Class
 - Base Class
 - Parent Class
 - Super Class
 - Subtype
 - Derived Class
 - Child Class
 - Leaf Class
 - Sealed Class
29. Unified Modeling Language (UML)
 30. Object Management Group (OMG)
 31. Unified Process (UP)
 32. Rational Unified Process (RUP)
 33. Use Case
 - Scenario
 - Main Flow
 - Alternative Flow
 - Exceptional Flow
 - Use Case Relationships
 - Generalization

- Include
- Extend
 - Extension Points
- Use Case Discovery
 - Actor-Based
 - Event-Based
- Requirements Traceability Analysis
- Test Case Development

34. UML Diagrams

- Use Case Diagram
- Class Diagram
- Object Diagram
- Instance Diagram
- Sequence Diagram
- Collaboration Diagram
- Activity Diagram
- State Diagram
- Component Diagram
- Deployment Diagram