

### **Level 1: OOP Basics**

- What is Object-Oriented Programming
  - OOP vs Procedural Programming
  - Class and Object
  - Real-world examples of OOP
  - Advantages of OOP
  - Introduction to Abstraction
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### **Level 2: Classes and Objects**

- Defining a Class
  - Creating Objects
  - Attributes (Variables)
  - Methods (Functions)
  - Accessing Members
  - Constructor Basics
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### **Level 3: Encapsulation**

- Encapsulation Concept
  - Data Hiding
  - Getters and Setters
  - Access Modifiers (public, private, protected)
  - Advantages of Encapsulation
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### **Level 4: Inheritance**

- Inheritance Concept
  - Types of Inheritance
  - Single, Multilevel, Hierarchical
  - Method Overriding
  - Super/Parent Class Concept
  - Reusability
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### **Level 5: Polymorphism**

- Polymorphism Concept
- Compile-time Polymorphism
- Run-time Polymorphism
- Method Overloading
- Method Overriding
- Function/Operator Overloading

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## Level 6: Advanced OOP Concepts

- Abstraction in Detail
- Abstract Classes
- Interfaces
- Constructors & Destructors (advanced use)
- Object Relationships (Association, Aggregation, Composition)
- Design Principles (basic intro to SOLID)

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