

## 30-Day Java OOP Coding Challenge

### WEEK 1 – OOP Basics (Classes, Objects, Constructors)

Day 1: Create a Student class.

Day 2: Employee class with salary calculation.

Day 3: BankAccount class.

Day 4: Product class catalog.

Day 5: Car class with start/stop.

Day 6: Book class (constructor overloading).

Day 7: Movie class rating.

### WEEK 2 – Inheritance + Polymorphism

Day 8: Vehicle → Car/Bike.

Day 9: Shape → Circle, Rectangle, Triangle.

Day 10: Employee → FullTime/PartTime.

Day 11: Animal → Dog/Cat/Cow.

Day 12: Account → Savings/Current.

Day 13: Phone → Android/iPhone.

Day 14: Person → Student/Teacher.

### WEEK 3 – Abstraction, Interfaces, Composition, Aggregation

Day 15: Payment interface.

Day 16: Notification abstract class.

Day 17: Cart with list of Products (composition).

Day 18: Library with Books (aggregation).

Day 19: Computer composed of parts.

Day 20: Playable interface.

Day 21: Appliance abstract class.

## WEEK 4 – Advanced OOP

Day 22: Encapsulation with getters/setters.

Day 23: Static counter.

Day 24: Singleton Logger.

Day 25: ShapeFactory.

Day 26: Dependency Injection example.

Day 27: Custom Exception.

Day 28: Method Overloading Calculator.

Day 29: Banking System OOP project.

Day 30: Mini E-Commerce System.