Course:	**SE 506 Design Patterns**
Lab 04:	**Implementation of Prototype and Facade**
Time:	**2 hours**

Part 1: Prototype

Suppose you are developing a product catalog system for an e-commerce platform. In this platform, many products share core attributes (e.g., name, category, price) but require specific customizations. For example, clothing items may come in multiple colors and sizes, while electronic products may vary in storage capacities and battery life. You have to implement the Prototype design pattern to create product variants with slight customizations. To manage these prototypes, you also need to implement a prototype registry.

Part 2: Facade

In a pizza delivery system, ordering a pizza with a credit card involves several subsystems that work together to complete the ordering process. For example, checking account, checking security PIN, credit/debit balance, making ledger entry, sending notification etc. You have to implement the Facade design pattern in this scenario to provide a simplified interface for client to order a pizza allowing them to input only essential details (card information, security PIN, payment amount, and operation type).