**"MonoCart: A Monolithic E-Commerce Application"**

**Project Description:**  
You are tasked with building a **monolithic e-commerce application** called MonoCart using **Java 8**, **Spring Boot 2.x**, **Spring Data JPA**, and **MySQL** (or H2 for testing). The application will perform full CRUD operations and simulate real-time business logic for an online shopping platform. The architecture should be modular and well-organized to support **refactoring into a microservices architecture** in the future.

**Functional Requirements (for Monolithic Version):**

**1. User Module**

* Register and manage users (CRUD)

**2. Product Module**

* Add, update, delete products (CRUD)
* Search products by name, category

**3. Category Module**

* Manage product categories (CRUD)

**4. Cart Module**

* Add/remove products to/from cart
* View cart items
* Calculate total price

**5. Order Module**

* Place order from cart
* Track order status (NEW, CONFIRMED, SHIPPED, DELIVERED)
* View order history

**Technical Requirements:**

* Spring Boot 2.x (Monolithic Architecture)
* Java 8
* Spring Data JPA with Hibernate
* MySQL or H2 Database
* Global Exception Handling
* Basic Validation (e.g., @NotNull, @Size)
* Layered Architecture: Controller, Service, Repository, Entity
* Basic unit testing (optional)

**Future Redesign into Microservices:**

Break down monolith into these **potential microservices**:

* **User Service**
* **Product Service**
* **Order Service**
* **Cart Service**
* **Category Service**

**Goal of the Project:**

* Learn how to build a real-world monolithic application with clean architecture.
* Understand how to organize code and features in a modular way.
* Prepare the codebase for future microservice splitting with minimal rework.