**Order Processing Notification System**

**Problem Statement: Order Processing Notification System**

**Objective:**

Design and implement an **order processing system** for an e-commerce platform where the system **notifies customers and internal departments** when an order is placed. The system should support **Email and SMS notifications** and be **easily extendable** to support additional notification methods in the future.

**Requirements:**

1. When an order is placed:
   * Send an **email** notification to the customer.
   * Send an **SMS** notification to the shipping department or the customer.
2. The system should use **delegates and events** to implement the **Observer design pattern**, ensuring:
   * Loose coupling between the OrderProcessor and notification mechanisms.
   * Support for multiple notification subscribers.
3. The notification logic must be **plug-and-play**:
   * New types of notifications (e.g., Push Notification, WhatsApp) can be added without modifying the core order processing logic.
4. The system should provide:
   * A method to place an order.
   * Appropriate message output simulating the notifications.

**Constraints:**

* Use **C# events and delegates** (no external frameworks).
* Focus on **code clarity, maintainability**, and **extensibility**.
* Notifications must be handled by **separate classes**, not inside the OrderProcessor.

**🧪 Bonus (Optional):**

* Add the ability to **unsubscribe** a notification handler.
* Implement a Logger that logs every order placed using the same event system.
* Use a List<Order> to simulate a history of processed orders.