



E-commerce System - Sequence Diagram

1. Introduction

The E-commerce system manages the end-to-end process of ordering products online. This documentation presents a detailed sequence diagram that illustrates the interactions between the customer, website, payment gateway, warehouse, and delivery system during a typical order flow.

2. Actors and Participants

- **Customer:** The end-user who browses products, places orders, and receives deliveries.
- **Website:** The e-commerce platform that handles product browsing, cart management, and order processing.
- **Payment Gateway:** The service responsible for processing payment transactions.
- **Warehouse:** Manages the inventory and prepares orders for shipping.
- **Delivery System:** Delivers the products to the customer.

3. Sequence of Operations

1. **Customer browses products** on the website.
2. **Customer adds product to cart.**
3. **Customer places order**, triggering the website to initiate the payment process.
4. **Website requests payment** from the payment gateway.
5. **Payment Gateway responds** with success or failure.
6. **Website confirms order** to the customer if payment succeeds.
7. **Website informs the warehouse** to prepare the shipment.
8. **Warehouse dispatches the product** through the delivery system.
9. **Delivery System delivers the product** to the customer.

4. Explanation of Diagram

- **Customer → Website:** The initial interactions for browsing, adding to cart, and placing orders.
- **Website → Payment Gateway:** Handles payment authorization.
- **Payment Gateway → Website:** Sends response back with success/failure.
- **Website → Customer:** Sends order confirmation.
- **Website → Warehouse → Delivery System → Customer:** Ensures that the physical product is shipped and delivered.
- **Delivery System Duplicate Lifeline:** Provides a clearer view of delivery as the final step in the sequence.