

SENG 350

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Task Overview: E-Commerce Platform UML Diagrams

We are tasked with creating several UML diagrams for an E-Commerce Platform as described in the assignment.

Diagrams

1. Class Diagram

The class diagram illustrates the structural relationships between key entities in the E-Commerce Platform.

Key Components:

1. Customer Class
 - Central to the system, containing essential attributes like customerID, name, email, and address
 - Methods reflect core user actions: register(), login(), browseProducts(), etc.
 - Demonstrates a one-to-many relationship with Order class and one-to-one with ShoppingCart
2. Order Class
 - Serves as an associative class between Customer and Product
 - Contains crucial attributes: orderID, orderDate, status
 - Methods handle order processing: calculateTotal(), updateStatus(), processPayment()
3. Relationships
 - Customer 1 to * Order: One customer can have multiple orders
 - Seller 1 to * Product: One seller can list multiple products
 - Order * to 1 DeliveryPartner: Multiple orders can be assigned to one delivery partner

2. Data Flow Diagram (DFD) Level 0 Analysis

The context-level DFD provides a high-level view of the entire system and its interactions with external entities.

Key Elements:

1. Central Process
 - The E-Commerce System represented as the core process
2. External Entities
 - Customer: Initiates transactions and receives services
 - Seller: Provides products and receives orders
 - Admin: Manages the system
 - Delivery Partner: Handles logistics
 - Payment Gateway: Processes financial transactions

Data Flows:

- Bidirectional flows show the exchange of information

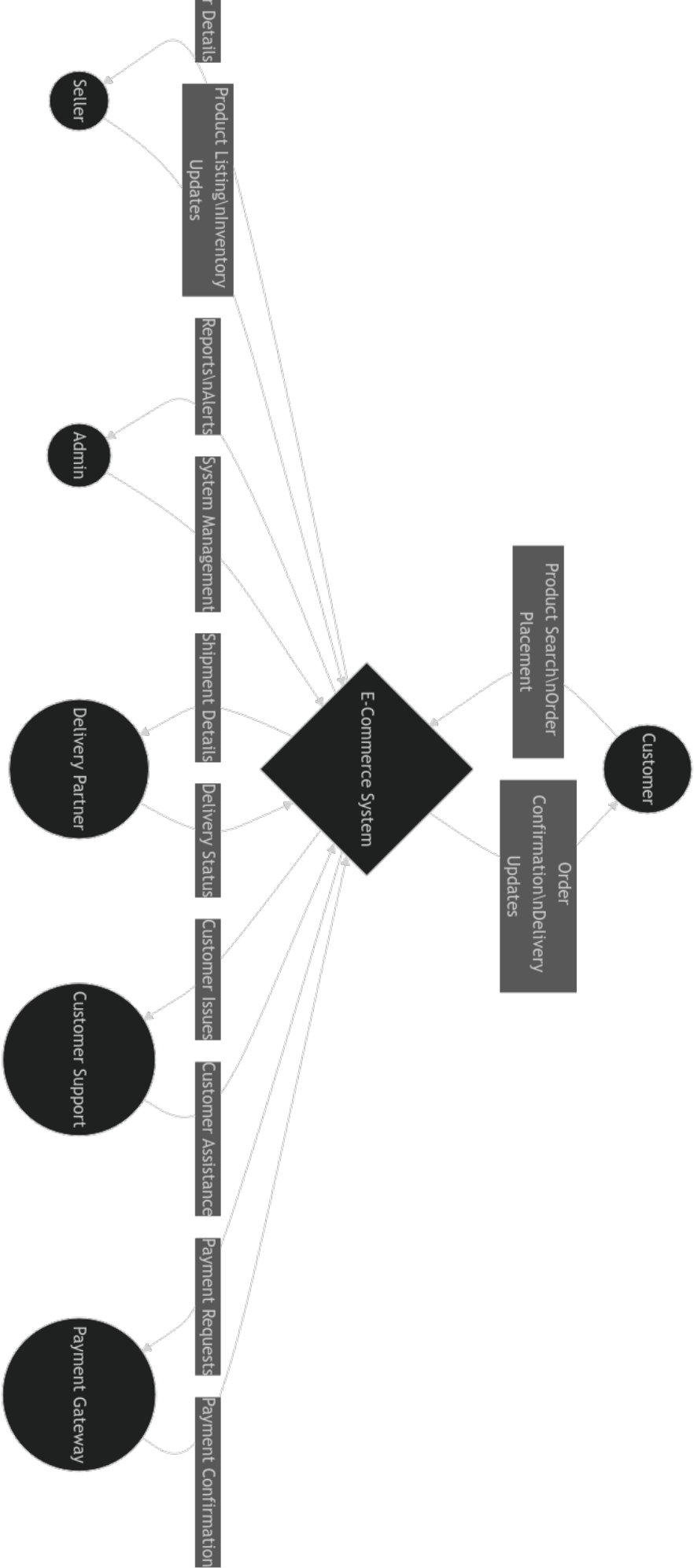
- Each flow is labeled with the type of data being transferred



Figure 1: Class Diagram of the e-commerce platform

DFD Level 0 Diagram

Explanation in page 1



3. Sequence Diagram

The sequence diagram depicts the temporal interactions between objects during a typical order process.

Key Interactions:

1. Initial Phase
 - Customer browses products
 - System returns product information
2. Order Creation
 - Customer adds items to cart
 - Checkout process initiated
3. Payment Processing
 - System interacts with Payment Gateway
 - Confirmation returned to system
4. Order Fulfillment
 - Seller receives order
 - Delivery Partner creates shipment

4. Swim Lane Activity Diagram Analysis

This diagram illustrates the workflow of the ordering process across different actors in the system.

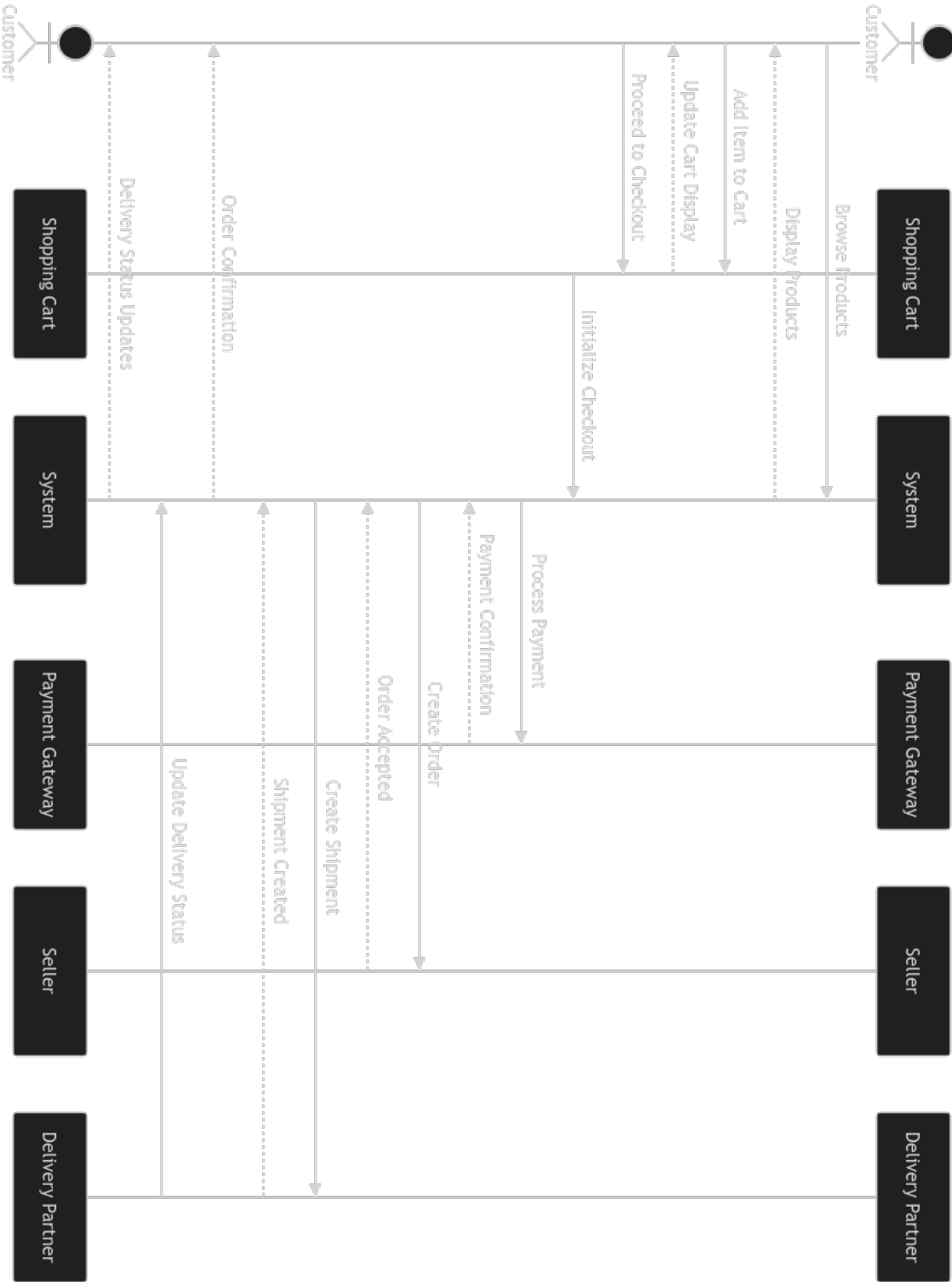
Lanes and Activities:

1. Customer Lane
 - Shows user actions from search to receipt of product
 - Includes decision points for cart management
2. System Lane
 - Handles validation and processing
 - Updates inventory and creates orders
3. Seller Lane
 - Focuses on order preparation and shipment
4. Delivery Partner Lane
 - Manages the logistics of order delivery

Critical Paths:

- Order validation before payment processing
- Inventory update after order creation
- Multiple status updates during delivery

Sequence Diagram



Swim Lane Activity Diagram

