**SENG 350**

Arfaz Hussain / V00984826

**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
4. **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
* **A screenshot of a computer

  Description automatically generated**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***

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1. **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
5. **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

**A screenshot of a computer

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**Activity Diagram**