

TITLE OF PROJECT: E-Commerce Shoping Cart

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Inventory Management System (SRS)

1. Introduction

1.1 Purpose

An e-commerce shopping cart system serves as the digital shopping cart for online shoppers, providing a seamless experience for browsing, selecting, and purchasing products or services from an online store. It acts as the virtual counterpart to the traditional shopping cart, enabling users to add items, review their selections, and proceed to checkout for payment.

1.2 Scope

The e-commerce shopping cart system will provide a user-friendly platform for managing shopping cart activities, including adding, removing, and updating items, as well as facilitating the checkout process. It aims to enhance the overall shopping experience for customers while streamlining the operational processes for online merchants.

1.3 Definitions, Acronyms, and Abbreviations

- ECS: E-Commerce Shopping Cart
- SKU: Stock Keeping Unit
- API: Application Programming Interface

2. Overall Description

An E-commerce Shopping Cart (ECS) system is a crucial component of any online retail business, serving as the interface between customers and the online store's inventory and checkout processes. It enables users to browse through product catalogs, add desired items to their cart, and proceed to complete their purchase securely.

2.1 Product Perspective

The ECS system will integrate seamlessly with the e-commerce website's backend infrastructure, interfacing with the inventory management, payment processing, and order fulfillment systems via APIs.

2.2 Product Features

- **Product Browsing:** Allow users to browse through product categories, view product details, and add items to the shopping cart.
- **Cart Management:** Enable users to manage their shopping cart, including adding, removing, and updating item quantities.
- **Checkout Process:** Facilitate a smooth and secure checkout process, including shipping and payment options.
- **User Authentication:** Provide authentication mechanisms for users to create accounts, log in, and securely store their information.
- **Order Tracking:** Offer order tracking functionality for users to monitor the status of their purchases.

2.3 User Classes and Characteristics

- **Shopper:** Individuals browsing and making purchases on the e-commerce website.
- **Administrator:** Responsible for managing product listings, inventory, and order processing.

2.4 Operating Environment

The ECS system will be accessible through web browsers on various devices, including desktops, laptops, tablets, and smartphones. It will leverage cloud-based infrastructure for scalability and reliability.

2.5 Design and Implementation Constraints

- The system should be scalable to handle fluctuating traffic and accommodate a growing inventory of products.
- Security measures should be implemented to protect user data and prevent unauthorized access.

3. System Features

3.1 Feature 1: Product Browsing

- **Description:** Allow users to explore product catalogs, search for specific items, and view detailed product information.
- **Inputs:** User queries, product details.
- **Outputs:** Product listings, descriptions, images.

3.2 Feature 2: Cart Management

- **Description:** Enable users to add, remove, and adjust quantities of items in their shopping cart.
- **Inputs:** User interactions with cart interface.
- **Outputs:** Updated cart contents.

3.3 Feature 3: Checkout Process

- **Description:** Guide users through the checkout process, including shipping address entry, payment method selection, and order confirmation.
- **Inputs:** User-provided information for shipping and payment.
- **Outputs:** Order confirmation, transaction details.

3.4 Feature 4: User Authentication

- **Description:** Provide mechanisms for users to create accounts, log in securely, and manage their personal information.
- **Inputs:** User credentials, account details.
- **Outputs:** Authentication status, user profile updates.

3.5 Feature 5: Order Tracking

- **Description:** Allow users to track the status of their orders, including shipping updates and delivery notifications.
- **Inputs:** Order details, tracking numbers.
- **Outputs:** Order status updates.

4. External Interface Requirements

4.1 User Interfaces

- **Web Interface:** Intuitive and responsive web interface for users to interact with the ECS system, including product browsing, cart management, and checkout.

4.2 Communication Interfaces

- **Email/SMS Notifications:** Interface with email and SMS services to provide users with order updates, shipping notifications, and promotional messages.

5. Reporting Interfaces

- **Reporting Tools:** Provide interfaces for generating reports on sales analytics, customer behavior, and inventory management for administrators to make informed decisions.

6. Non-functional Requirements

6.1 Performance Requirements

- The system should be responsive, with quick page load times and minimal latency during checkout processes.
- It should support concurrent user access without slowdowns or crashes, even during peak traffic periods.

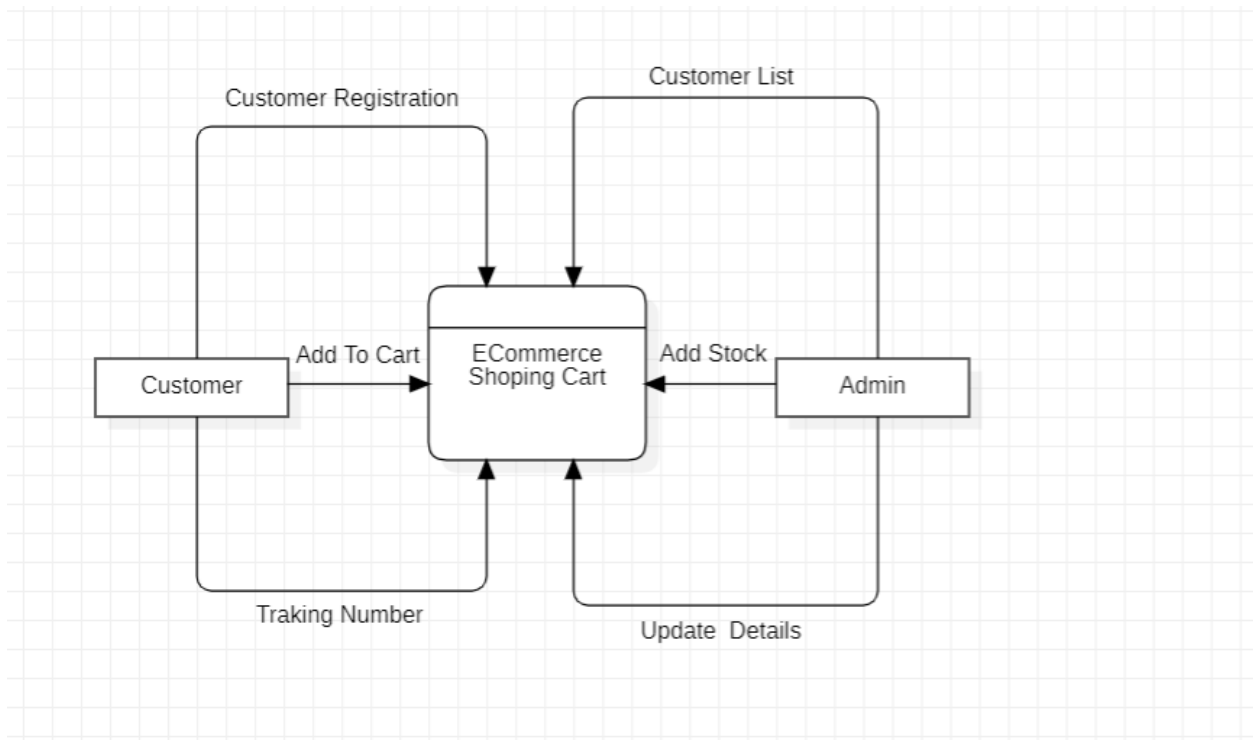
6.2 Security Requirements

- User data should be encrypted during transmission and storage to protect against unauthorized access.
- Secure authentication mechanisms should be implemented to prevent account breaches and fraud.

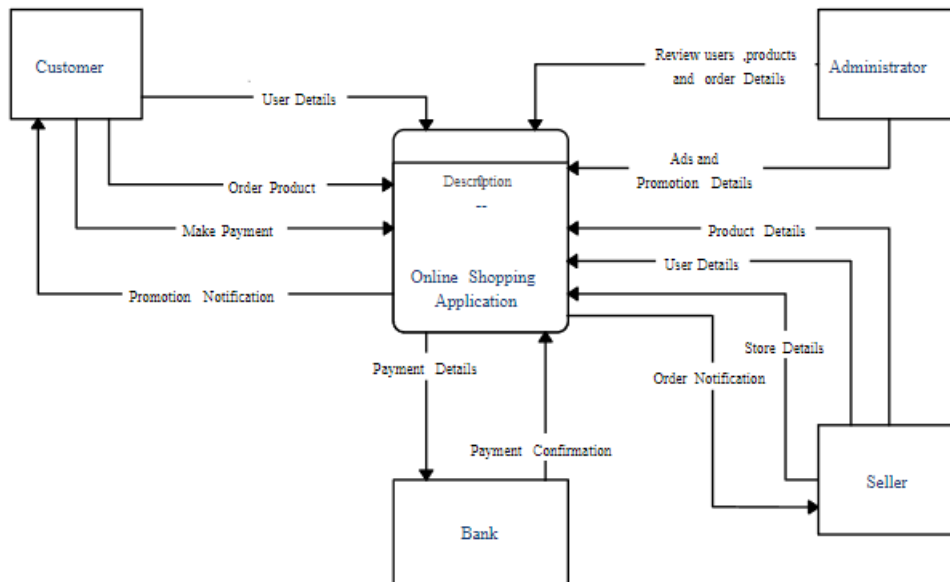
6.3 Software Quality Attributes

- **Reliability:** The system should be reliable, with minimal downtime and errors.
- **Usability:** The user interface should be intuitive and easy to navigate, even for first-time users.
- **Scalability:** The system architecture should be scalable to accommodate growing user bases and product catalogs.

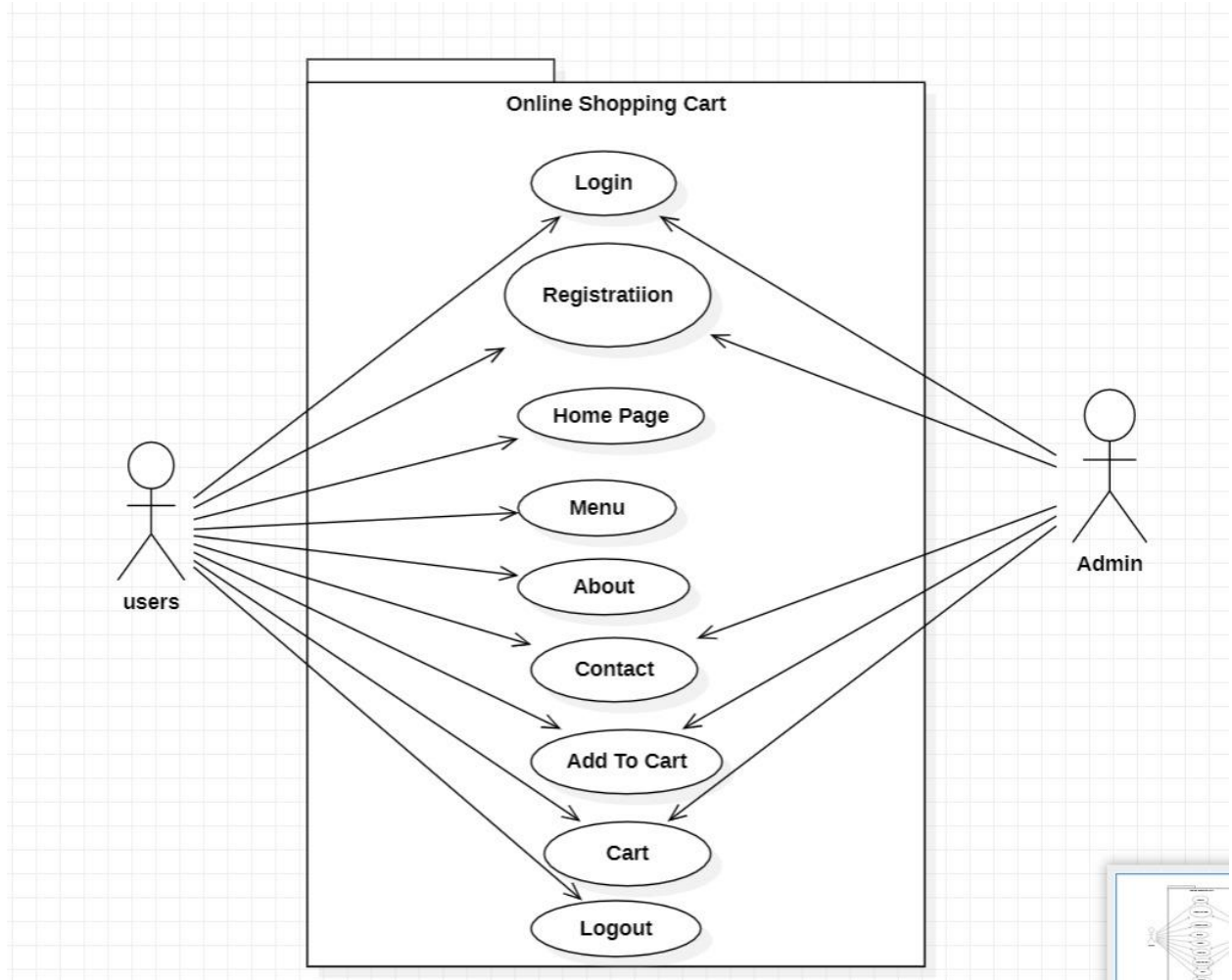
DATA FLOW DIAGRAM LEVEL-0



DATA FLOW DIAGRAM LEVEL-1



USE-CASE DIAGRAM FOR Ecommerce Shopping Cart



ACTIVITY DIAGRAM:

