SRS DOCUMENT FOR
ONLINE SHOPPING MART

CONTENTS:

INTRODUCTION:

The following document serves as the Software Requirements Specification (SRS) for the development of an Online Shopping Mart. This SRS outlines the functional and non-functional requirements of the system, providing a comprehensive overview of its features, constraints, and specifications.

The Online Shopping Mart aims to provide a user-friendly and efficient platform for purchasing a wide range of products online. With the increasing trend towards e-commerce, there is a growing demand for convenient and secure online shopping experiences. This system seeks to address this demand by offering a seamless shopping experience to users, enabling them to browse, select, and purchase products with ease.

Scope:

The Online Shopping Mart will include features such as product browsing, search functionality, shopping cart management, secure payment processing, order tracking, and user account management. It will support both guest users and registered members, allowing users to create accounts, save their preferences, and track their order history.

Definitions, Acronyms, and Abbreviations:

SRS: Software Requirements Specification

UI: User Interface

API: Application Programming Interface

SQL: Structured Query Language

OVERALL DESCRIPTION:

a. Product Perspective:

- Explanation of the Online Shopping Mart's role within the e-commerce market.

- Comparison with existing online shopping platforms and identification of unique selling points.

- Integration possibilities with external systems such as payment gateways, inventory management systems, and customer relationship management (CRM) software.

b. Product Functions:

- Product browsing: Users can search and browse through a wide range of products by categories, brands, or keywords.

- Shopping cart management: Users can add, remove, and modify items in their shopping cart before proceeding to checkout.

- Secure payment processing: Users can make payments securely using various payment methods such as credit/debit cards, digital wallets, or cash on delivery.

- Order tracking: Users can track the status of their orders, including order processing, shipping, and delivery.

- User account management: Users can create accounts, log in, manage their personal information, view order history, and track shipments.

- Admin functions: Administrators can manage product listings, inventory, user accounts, orders, promotions, and website content.

c. User Classes and Characteristics:

- Guest users: Individuals who browse the website without logging in or creating an account.

- Registered members: Users who have created accounts on the platform and can access additional features such as order tracking and personalized recommendations.

- Administrators: Staff members responsible for managing the online shopping mart, including inventory management, order fulfillment, and website administration.

d. Operating Environment:

- Supported web browsers: Compatibility with major web browsers such as Google Chrome, Mozilla Firefox, Apple Safari, and Microsoft Edge.

- Device compatibility: Support for desktop computers, laptops, tablets, and smartphones running on various operating systems (Windows, macOS, iOS, Android).

- Server requirements: Deployment on a reliable web server with sufficient computing resources and bandwidth to handle website traffic.

- Database management system: Utilization of a robust database system (e.g., MySQL, PostgreSQL) for storing product information, user data, and order details.

- Security measures: Implementation of SSL encryption, firewalls, and other security protocols to safeguard user data and transactions.

e. Design and Implementation Constraints:

- Budget constraints: Limitations on financial resources allocated for development, hosting, maintenance, and marketing.

- Time constraints: Project deadlines and milestones for development, testing, and deployment.

- Regulatory compliance: Adherence to data protection regulations (e.g., GDPR, CCPA), PCI DSS standards for payment security, and other legal requirements.

- Scalability requirements: Design considerations to accommodate future growth in website traffic, user base, and product catalog.

f. User Documentation:

- User manuals: Comprehensive guides explaining how to navigate the website, search for products, place orders, and manage user accounts.

- FAQs: Frequently asked questions and answers addressing common user inquiries related to orders, payments, returns, and account management.

- Help sections: Interactive help features, tooltips, and contextual guidance throughout the website to assist users in completing tasks.

- Support channels: Contact information for customer support services, including email, live chat, and telephone support, for resolving user issues and inquiries.

SPECIFIC REQUIREMENTS:

Specific Requirements

a. Functional Requirements:

1. User Authentication:

- The system shall provide user authentication mechanisms, including login and registration.

- Registered users shall be able to log in using email/password or social media accounts.

2. Product Browsing:

- Users shall be able to browse products by category, brand, or keyword search.

- The system shall display product details, including images, descriptions, prices, and availability.

3. Shopping Cart Management:

- Users shall be able to add products to their shopping cart, view cart contents, and modify quantities.

- The system shall calculate the total price of items in the shopping cart, including taxes and shipping fees.

4. Checkout Process:

- Users shall be guided through a secure checkout process, including shipping and payment information entry.

- The system shall support multiple payment methods, such as credit/debit cards, PayPal, and cash on delivery.

5. Order Management:

- Users shall receive confirmation emails upon order placement, including order details and tracking information.

- Admin users shall have access to order management features, including order processing, shipment tracking, and order cancellation.

6. User Account Management:

- Registered users shall be able to manage their account settings, including personal information, addresses, and payment methods.

- The system shall allow users to view their order history, track shipments, and manage subscriptions.

7. Admin Dashboard:

- Administrators shall have access to an admin dashboard for managing product listings, inventory, users, and orders.

- The admin dashboard shall provide analytics and reporting features for monitoring sales, customer behavior, and inventory levels.

b. Non-functional Requirements:

1. Performance:

- The system shall respond to user interactions within 3 seconds under normal load conditions.

- The system shall support concurrent user sessions without performance degradation.

2. Reliability:

- The system shall have a 99.9% uptime, excluding scheduled maintenance periods.

- The system shall perform automated backups of the database daily to ensure data integrity.

3. Security:

- The system shall encrypt sensitive user data, including passwords and payment information, using SSL/TLS protocols.

- The system shall implement secure authentication mechanisms to prevent unauthorized access to user accounts.

4. Scalability:

- The system architecture shall be designed to scale horizontally to accommodate increased user traffic and product catalog growth.

- The system shall support load balancing and caching mechanisms to distribute traffic and improve performance.

5. Usability:

- The user interface shall be intuitive and accessible, with clear navigation and consistent layout across devices.

- The system shall provide helpful error messages and guidance to assist users in completing tasks.

c. External Interface Requirements:

1. Payment Gateway Integration:

- The system shall integrate with third-party payment gateways (e.g., Stripe, PayPal) to process payments securely.

- Payment gateway APIs shall be used to facilitate payment transactions and handle payment status notifications.

2. Shipping API Integration:

- The system shall integrate with shipping carriers (e.g., UPS, FedEx) to calculate shipping rates and generate shipping labels.

- Shipping API calls shall be used to retrieve real-time shipping rates and tracking information.

3. Social Media Integration:

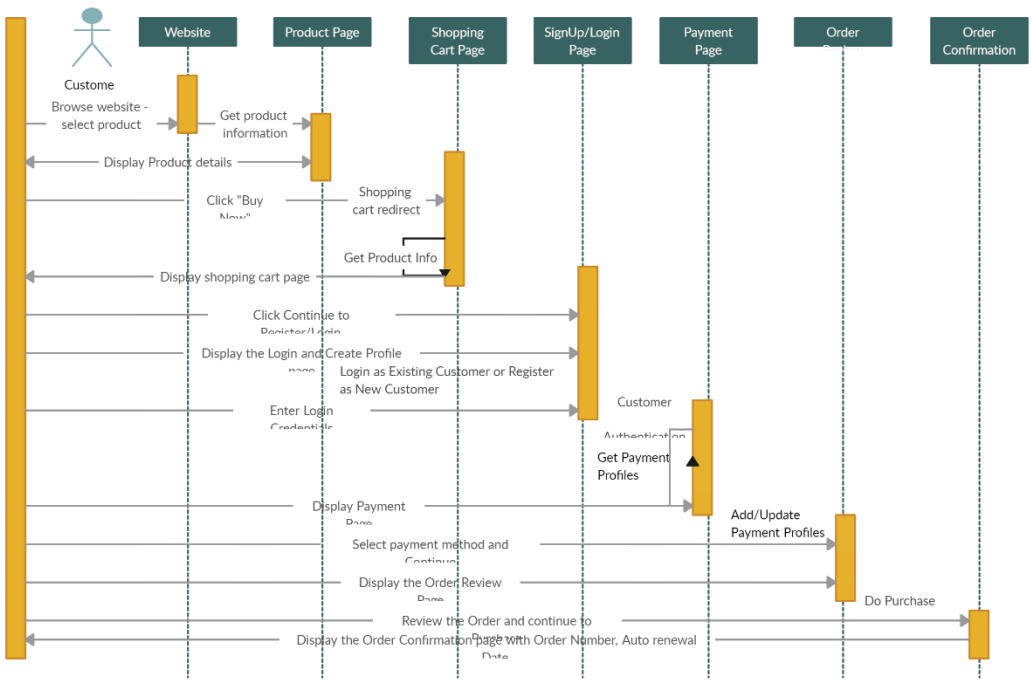
- The system shall provide social media sharing buttons to allow users to share products on platforms such as Facebook, Twitter, and Instagram.

- Social media APIs shall be used to enable social login and retrieve user profile information for personalized experiences.

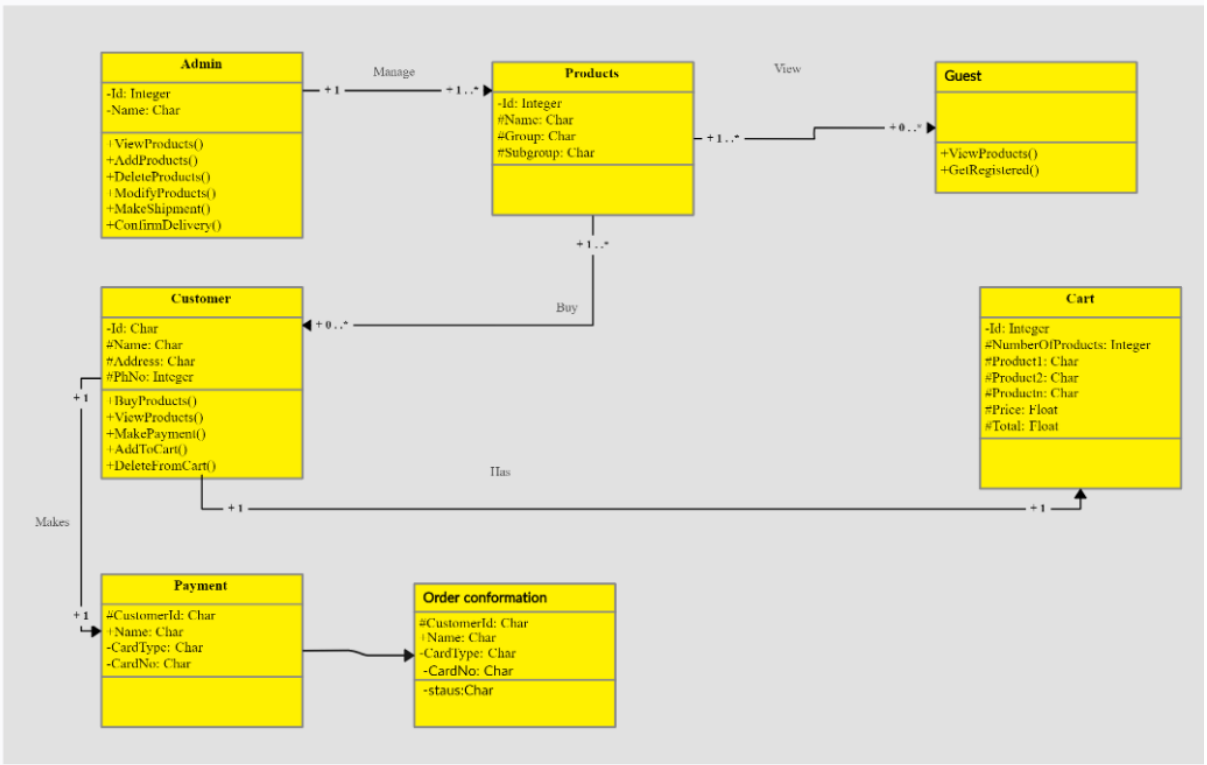
DIAGRAMS:

Class diagrams represent the static structure of a system, showing classes, their attributes, methods, and relationships. Sequence diagrams illustrate the dynamic behavior of a system, detailing the interactions between objects over time. Use case diagrams provide a high-level view of system functionality, showcasing actors, use cases, and their relationships. Together, these diagrams offer a comprehensive understanding of system architecture, behavior, and user interactions, aiding in software design, communication, and analysis.

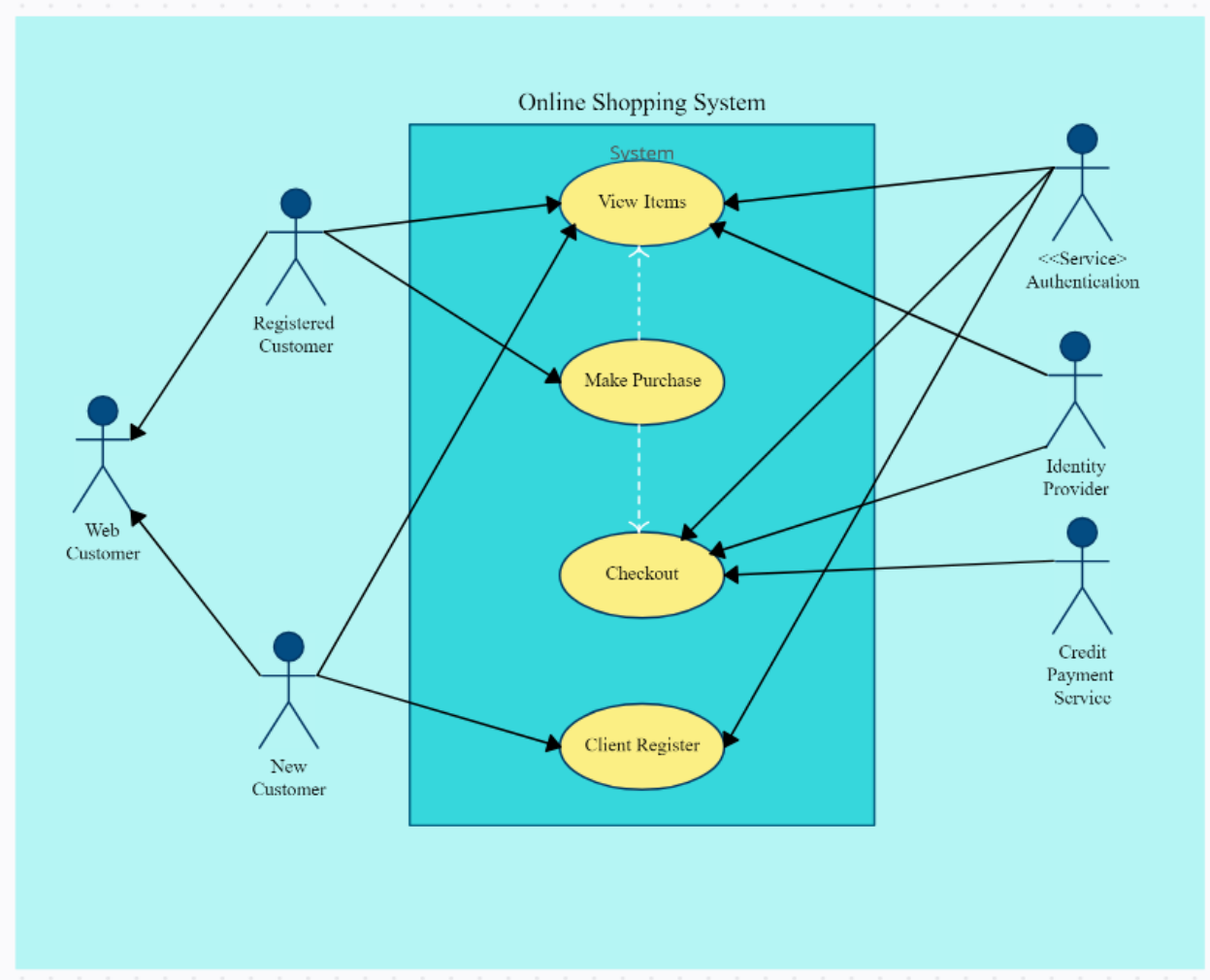
SEQUENCE DIAGRAM:



CLASS DIAGRAM:



USECASE DIAGRAM:



SYSTEM MODELS:

Implementing Scrum in the development of an online shopping mart system can bring several benefits, such as increased transparency, faster delivery of value, and improved collaboration among team members. Here's how Scrum can be applied to such a project:

1. Product Backlog Creation:

- The Product Owner collaborates with stakeholders to create and prioritize a Product Backlog containing all desired features, enhancements, and bug fixes for the online shopping mart.

- Product Backlog items are described in terms of user stories, ensuring a customer-centric focus.

2. Sprint Planning:

- At the start of each Sprint, the Scrum Team, including the Product Owner and Development Team, conducts Sprint Planning.

- The Development Team selects a set of Product Backlog items they commit to completing during the Sprint, based on priority and capacity.

- The tasks required to implement each selected item are identified and estimated collectively by the Development Team.

3. Daily Scrum:

- Daily Scrum meetings are held, typically at the same time and place each day, to synchronize the team's activities.

- Each team member answers three questions: What did I do yesterday? What will I do today? Are there any impediments blocking my progress?

- The Scrum Master facilitates the Daily Scrum, ensuring that it stays focused and within the timebox.

4. Sprint Execution:

- During the Sprint, the Development Team collaborates to implement the selected Product Backlog items, with the goal of delivering a potentially shippable increment by the end of the Sprint.

- The Development Team self-organizes and divides the work among themselves based on their skills and expertise.

- The Product Owner is available throughout the Sprint to clarify requirements and provide feedback on the work in progress.

5. Sprint Review:

- At the end of each Sprint, the Scrum Team presents the completed work to stakeholders during the Sprint Review meeting.

- The Product Owner demonstrates the features implemented during the Sprint, gathers feedback, and discusses any changes to the Product Backlog.

- Stakeholders have the opportunity to provide input and suggest adjustments based on their needs and priorities.

6. Sprint Retrospective:

- Following the Sprint Review, the Scrum Team holds a Sprint Retrospective to reflect on the Sprint process and identify areas for improvement.

- The team discusses what went well, what could be improved, and actions to take in the next Sprint to address any identified issues or challenges.

- The Scrum Master facilitates the retrospective, ensuring that insights are captured and actionable items are identified.

By following the Scrum framework, the development team can incrementally build and deliver a high-quality online shopping mart system that meets customer requirements and adapts to changing market conditions effectively.

OTHER REQUIREMENTS:

Legal and regulatory requirements: Compliance requirements related to data protection, consumer rights, etc.

Ethical requirements: Guidelines for ethical use of the system and handling of user data.

Training requirements: Training materials and resources for system users and administrators.

APPENDICES:

1. Glossary:

- Definitions of technical terms, acronyms, and domain-specific terminology used in the Online Shopping Mart SRS document.

2. Change Log:

- Record of changes made to the Online Shopping Mart SRS document, including dates, descriptions of changes, and authorship information.

3. Index:

- Alphabetical index of topics, sections, and key terms covered in the Online Shopping Mart SRS document, facilitating navigation and reference.

4. User Interface Mockups:

- Visual representations of the user interface design for the Online Shopping Mart, including wireframes, mockups, and prototype screenshots.

5. Technical Specifications:

- Detailed technical specifications for the Online Shopping Mart system, including system architecture diagrams, database schema, API documentation, and integration protocols.

6. Legal and Regulatory Compliance Documentation:

- Documentation related to legal and regulatory compliance for the Online Shopping Mart, such as privacy policies, terms of service, and compliance certificates.

7. Test Plans and Test Cases:

- Test plans outlining the strategy and approach for testing the Online Shopping Mart system, along with detailed test cases for functional and non-functional requirements.

8. Training Materials:

- Training manuals, guides, and tutorials for system administrators, support staff, and end-users of the Online Shopping Mart, covering topics such as product management, order processing, and customer support procedures.

9. Marketing and Promotional Materials:

- Marketing collateral, promotional campaigns, and advertising materials used to promote the Online Shopping Mart to customers and stakeholders.

10. Customer Feedback and Surveys:

- Summaries of customer feedback, surveys, and usability studies conducted during the development and deployment of the Online Shopping Mart, providing insights into user preferences and satisfaction levels.