Software Requirements Specification (SRS) Document

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Table of Contents

1. Introduction

This Software Requirements Specification (SRS) document delineates the requirements for the development of an advanced E-Commerce Website. The proposed system is intended to provide a robust platform where users can browse, search, and purchase products conveniently online. The solution also aims to ensure secure transactions for users and facilitate seamless management for administrators. A modern e-commerce platform should cater to the needs of diverse stakeholders while prioritizing usability, scalability, and reliability.

The objective of this document is to serve as a blueprint for the design and implementation of the platform. It will be utilized by the development team, project managers, and stakeholders as a guide to ensure alignment and successful execution.

2. Stakeholders Request

1. Customers

The primary end-users of the platform, customers, require an intuitive interface that simplifies the shopping experience. Their requests include:

- Browsing products categorized for ease of use.
- Accessing detailed product descriptions, reviews, and stock availability.
- Performing secure transactions and accessing order status updates.

2. Administrators

The administrators are responsible for the backend management of the platform. Their requirements include:

- Managing product inventory, prices, and promotions efficiently.
- Addressing customer queries and monitoring order statuses.
- Ensuring the integrity of the platform's data and functionality.

3. Developers

The development team will focus on creating a scalable and maintainable system. Key considerations include:

- Modular architecture to accommodate future enhancements.
- Integration of security protocols to safeguard user data.
- Delivering a smooth, bug-free user experience.

4. Project Managers

Project managers oversee the planning and execution of the e-commerce platform. Their responsibilities include:

- Ensuring the project is completed within the allocated time and budget.
- Conducting stakeholder reviews to confirm that requirements are met.
- Achieving customer satisfaction by delivering a high-quality solution.

3. System Requirements

Hardware Requirements:

- **Server Specifications**: A server with at least 8 GB RAM, 4-core CPU (2 GHz or higher), and 100 GB SSD storage. This ensures that the platform can handle peak traffic and provide a smooth experience to users.
- **End-User Devices**: Customers should have internet-enabled devices such as desktops, laptops, tablets, or smartphones with modern web browsers like Google Chrome, Mozilla Firefox, or Safari.

Software Requirements:

- **Frontend**: The user interface will be developed using HTML5, CSS3, and JavaScript frameworks such as React.js or Angular.
- **Backend**: Server-side logic will be implemented using Node.js, Django, or a similar backend framework for scalability and robustness.
- **Database**: The platform will use MySQL or MongoDB to store structured and unstructured data.

4. Functional Requirements

1. Product Catalogue

The system shall display comprehensive product details, including high-quality images, in-depth descriptions, accurate prices, and real-time stock statuses. Users will be able to easily navigate through a well-structured and visually appealing product catalogue. To enhance the shopping experience, the platform will support advanced search capabilities, allowing users to find specific products quickly. Additionally, users can apply multiple filters based on categories such as brand, price range, and ratings. Sorting options, including sorting by price, popularity, and relevance, will provide further convenience for users.

2. User Account Management

The platform will enable users to create accounts through a secure registration process. Users will be able to log in using secure authentication mechanisms, ensuring the confidentiality and integrity of their personal data. Profile management will allow users to update their personal information, view past activities, and manage their preferences. To ensure data security, the system will implement robust encryption for sensitive information such as passwords and personal details, adhering to industry standards.

3. Shopping Cart and Checkout

The system shall provide a seamless shopping cart experience, enabling users to add and remove products effortlessly. The checkout process will be streamlined to ensure user convenience, incorporating features like guest checkout and saved payment methods. To cater to diverse user preferences, the platform will integrate multiple payment methods, including credit/debit cards, UPI (Unified Payments Interface), digital wallets, and net banking. Secure payment gateways will be employed to encrypt transaction data and protect user information from unauthorized access.

4. Order Management

The platform will enable users to access a detailed order history, where they can view past orders along with associated details such as order date, product names, quantities, and total amounts. Active orders will be trackable in real-time, providing users with updates on order processing, shipping, and delivery. Administrators will have tools to process orders efficiently, update order statuses, and resolve any issues promptly. Real-time monitoring will ensure transparency and improve the overall order management process.

5. Admin Panel

An intuitive and user-friendly admin panel will be developed to provide administrators with powerful tools for managing the platform. The panel will include features for adding, updating, and deleting products, managing inventory levels, and monitoring order statuses. To support data-driven decision-making, the admin panel will feature analytics dashboards, offering insights into sales trends, customer behavior, and product performance. These dashboards will help administrators identify opportunities for improvement and implement strategies to enhance the platform's effectiveness.

5. Non-Functional Requirements

1. Performance

The system shall ensure optimal performance by minimizing page load times and ensuring smooth navigation across all devices. Responsive design principles will be applied to guarantee a consistent user experience on desktops, tablets, and smartphones. Performance optimization techniques, such as caching and content delivery networks (CDNs), will be employed to enhance speed and reliability.

2. Scalability

The platform will be designed to handle high traffic volumes, accommodating up to 1,000 simultaneous users during peak periods without compromising performance. The architecture will support scalability, allowing for future expansion as the user base grows or new features are introduced. This includes the ability to add new product categories, integrate third-party APIs, and scale infrastructure as needed.

3. Security

Robust security measures will be implemented to protect user data and ensure secure transactions. The platform will employ Secure Socket Layer (SSL) and Transport Layer Security (TLS) protocols to encrypt data during transmission. Sensitive user data, such as passwords and payment information, will be securely encrypted and stored using advanced encryption algorithms. Regular vulnerability assessments and penetration testing will be conducted to identify and address potential security risks.

4. Reliability

To ensure uninterrupted service, the platform will guarantee an uptime of 99.9% through reliable hosting services and failover mechanisms. Backup and recovery systems will be implemented to prevent data loss and facilitate quick recovery in the event of system failures. Regular maintenance and monitoring will ensure the platform remains reliable and operational.

5. Accessibility

The platform will adhere to the Web Content Accessibility Guidelines (WCAG) to ensure inclusivity for users with disabilities. Features such as keyboard navigation, screen reader compatibility, and adjustable font sizes will be provided to enhance accessibility. User feedback will be incorporated to continuously improve the platform's accessibility features.

6. Features

1. Product Catalogue

The product catalogue will provide detailed information for each product, including high-resolution images, comprehensive descriptions, and user-generated ratings. Users will have access to an intuitive interface that makes browsing and discovering products enjoyable and efficient.

2. User Reviews

Customers will be encouraged to share their experiences by posting reviews and ratings for purchased products. This feature will help build trust and provide valuable insights for other users. A moderation system will be in place to ensure the quality and relevance of reviews.

3. Wishlist

The wishlist feature will allow users to save products for future reference. Users can easily add items to their wishlist with a single click and access them later through their account. This feature will help users keep track of products they are interested in purchasing.

4. Order Tracking

Real-time order tracking will provide users with updates on the status of their orders, from processing to shipping and delivery. Estimated delivery times will be displayed to manage user expectations and improve satisfaction.

5. Discounts and Offers

Dynamic promotional banners will showcase active discounts, coupons, and special offers. Personalized recommendations based on user preferences and browsing history will enhance the shopping experience and encourage repeat purchases.

7. Use Cases

1. *Browse Products:*
    - Actors: Customers.
    - Goal: Search, filter, and view product details.
2. *Purchase Products:*
    - Actors: Customers.
    - Goal: Add items to the cart, apply discounts, and checkout securely.
3. *Manage Inventory:*
    - Actors: Administrators.
    - Goal: Update product details, stock, and pricing via the admin panel.
4. *Track Orders:*
    - Actors: Customers and Administrators.
    - Goal: Monitor order status and delivery progress.

Conclusion

This Software Requirements Specification (SRS) document provides a detailed overview of the functional and non-functional requirements for developing an advanced E-Commerce Website with a comprehensive Product Catalogue. By addressing the needs of all stakeholders and incorporating user-friendly features, the proposed platform aims to deliver a seamless, secure, and scalable online shopping experience. The outlined requirements and features serve as the foundation for a high-performance system that meets the evolving demands of the e-commerce industry.