
SOFTWARE REQUIREMENTS SPECIFICATION

for

Ecommerce Website

Version 1.0

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1 Introduction

1.1 Purpose

The purpose of this E-Commerce Site is aims to provide a comprehensive understanding of the functionalities and features expected from the ECS platform. This document serves as a reference for all stakeholders involved in the development, including administrators, developers, sellers, and customers.

1.2 Project Scope

This software is an e-commerce platform which helps customers to make effective purchases and helps sellers in increasing the sales and management of their products. Each customer and seller has access to pages where they can organize and see all their records. There are options to optimize search and keep track of the products one likes. There are methods designed to accept payment. There is a portal for customer support too in case of any discrepancies. The ECS platform aims to provide a centralized product catalog, order management system, and accessible product information for customers. The scope of the project includes the following key features:

- **Product Catalog:** A comprehensive listing of products available for purchase on the ECS platform, categorized and organized for easy navigation.
- **Order Management:** Tools and functionalities for managing orders, including order placement, tracking, and processing.
- **User Accounts:** User authentication and account management features for both sellers and customers.
- **Product Information:** Detailed product descriptions, images, pricing, and other relevant information to assist customers in making informed purchasing decisions.

1.3 Tech Stack

- **Frontend**
 - HTML
 - CSS
 - JavaScript

- Bootstrap (CSS Framework)
- **Backend:**
 - Node.js
 - Express.js
- **Database**
 - MongoDB
- **Payment Gateway Integration**
 - Stripe
- **Security**
 - Helmet (Node.js Security Middleware)

1.4 References

1. Node.js:
 - Official Node.js Documentation: <https://nodejs.org/en/docs/>
2. HTML CSS:
 - HTML Tutorial for Beginners: <https://www.w3schools.com/html/>
3. Express.js (Node.js Framework):
 - Express.js Documentation: <https://expressjs.com/>
4. MongoDB (Database for Node.js):
 - MongoDB Documentation: <https://docs.mongodb.com/>
5. Frontend Frameworks:
 - React.js Documentation: <https://reactjs.org/docs/getting-started.html>
6. Bootstrap (CSS Framework):
 - Bootstrap Documentation: <https://getbootstrap.com/docs/5.0/getting-started/introduction/>
7. Payment Gateway Integration:
 - Stripe Documentation: <https://stripe.com/docs>

2 Overall Description

2.1 Product Perspective

The Ecommerce is a web-based product designed to serve multiple users, including sellers and customers. It aims to provide a user-friendly, interactive, and reliable platform accessible from various devices such as laptops, mobile phones, and tablets.

2.2 User Characteristics

2.2.1 Administrator

The administrator is responsible for the following tasks:

1. Maintaining all databases associated with the site, including customer information, product and stock management, order shipment, delivery, and payment collection.
2. Analyzing different products to enhance profitability.

2.2.2 Customers/Visitors

Customers/Visitors have the following functionalities:

1. Logging in or signing up to proceed with the purchase.
2. Browsing the site, Search product on website.
3. Adding product to a virtual shopping cart.
4. Customers can view cart and Processed to payment

2.3 General Constraints

1. The Ecommerce is limited to the HTTP/HTTPS protocol.
2. Shipping charges will be applicable if the shopping cart value is below Rs. 500.

2.4 Operating Environment

The Ecommerce is a website that operates in all web browsers and on processors supporting internet browsing.

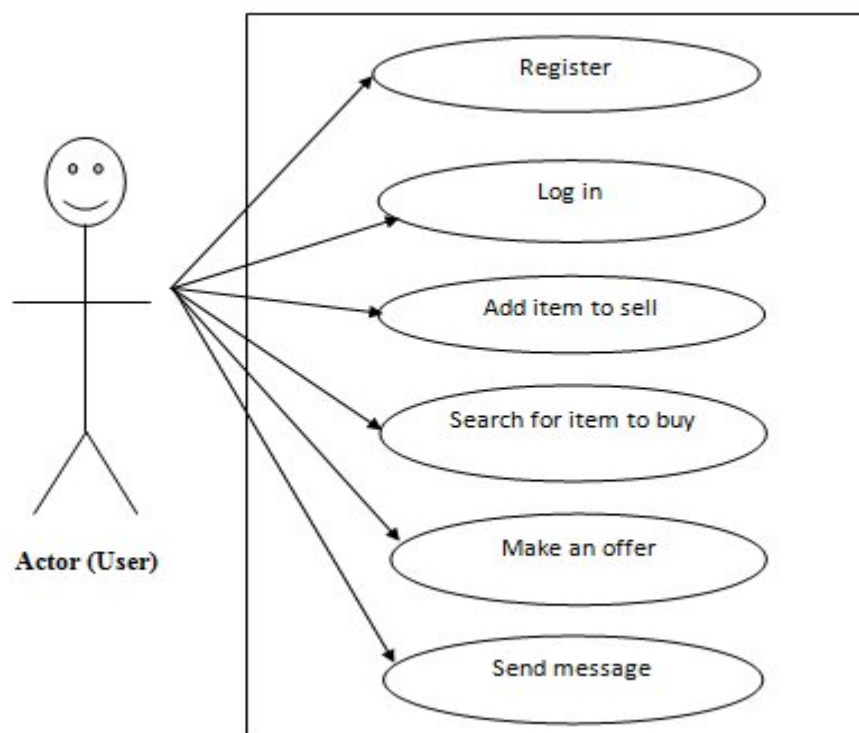


Figure 2.1: User: User Use Case

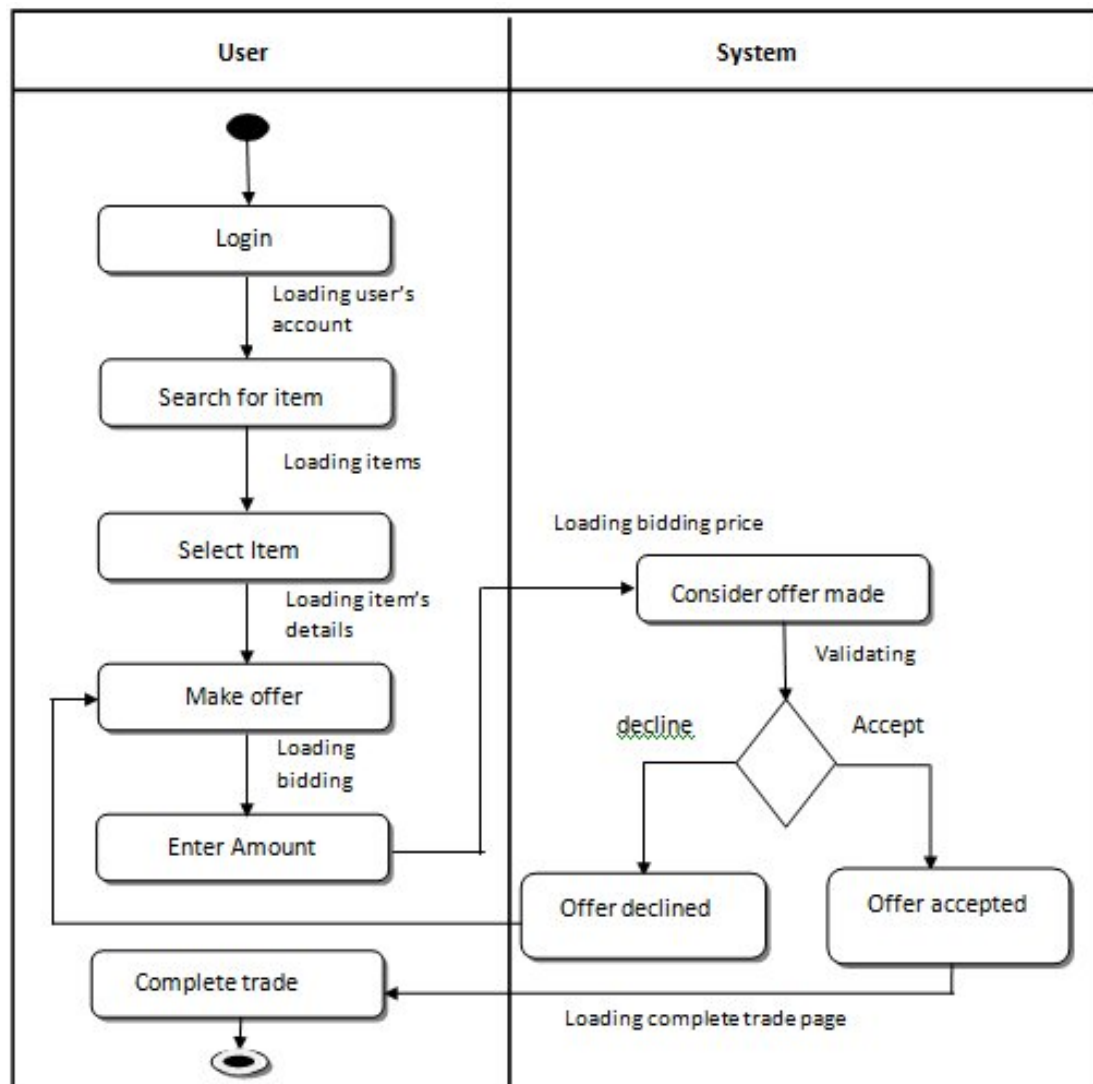


Figure 2.2: Activity Diagram for Buy Item

3 System Features

3.1 External Interface Requirements

3.1.1 User Interface

The e-commerce website's front end requires a modern web browser such as Google Chrome, Mozilla Firefox, or Safari for efficient operation. Users must have access to a device with internet connectivity to access the website.

3.1.2 Software Interface

The e-commerce website requires the following software components for efficient operation:

1. Hosting: Any Windows or Linux Operating System and Visual Studio Code for development. A working internet connection is mandatory.
2. User Environment: Any operating system with at least Internet Explorer installed and a minimum of 512 kbps working internet connection.

3.1.3 Communication Interfaces

The e-commerce website provides users with streamlined query submission and feedback mechanisms. Users can record complaints, seek assistance, and provide feedback using dedicated forms. The website utilizes STRIPE for payment processing and POSTMAN for user sign-up, ensuring a seamless user experience.

3.2 Functional Requirements

3.2.1 Registration

New users can register on the website using their credentials, while existing users can log in to their accounts for continued use.

3.2.2 Cart

Users can browse, add, or delete products in their shopping cart to keep track of their selections.

3.2.3 Login

Users can log in to the website using their registered credentials.

3.2.4 Receive Order

Once an order is confirmed by the customer, it is received and processed by the system.

3.2.5 Shipping Items

Confirmed orders are processed, and items are shipped to customers by the designated shipping agent.

3.2.6 Managing Account

Administrators, sellers, and users can modify their profile details on the platform.

3.2.7 Analysis of Products

Administrators and sellers can analyze product trends, including views and sales metrics.

4 Non-Functional Requirement

4.1 Security

Only authorized users are allowed to edit details in the profile and item tables. Access to the system is restricted, requiring a valid username and password for entry. Specific security measures include:

1. Administrator Identification (Login ID): The system requires administrators to authenticate themselves.
2. User Identification (Login ID): Users must register to make purchases on the platform.
3. Modification: Any modifications (insert, delete, update) for the database are synchronized and can only be performed by the administrator.
4. Administrator Access: Administrators have full access to view and modify all information associated with the system.
5. User Access Constraints: Different users have access constraints, with normal users/viewers only allowed to read information without the ability to edit or modify anything.

4.2 Performance Requirements

The system must meet certain performance criteria to ensure optimal operation:

1. System Requirements: The system should run on a good working PC with all necessary hardware and software requirements.
2. Database Capacity: It should be capable of handling medium-sized information databases without overloading.
3. Response Time: Response time for viewing information, searching for products, and printing stock evaluations should not exceed specified limits.
4. Capacity: The system should accommodate a high number of items and users without any faults.
5. User Interface: The user interface screen should respond within a specified time frame to ensure a smooth user experience.

6. **Conformity:** The system must conform to Microsoft Accessibility guidelines to ensure accessibility for all users.

4.3 Maintainability

To facilitate system maintenance, user manuals and system manuals are provided at delivery. Each module is designed independently to allow for easy modification in response to change requests. Additional maintainability measures include:

1. **Backup Capability:** The system provides the capability to back up data to prevent loss of information.
2. **Error Logging:** The system keeps a log of all errors, handling both expected and unexpected errors to prevent loss of information and minimize downtime.

4.4 Reliability

The system undergoes thorough testing during development to minimize computational errors and ensure reliability.

4.5 Availability

The system should be available at all times to ensure uninterrupted service.

4.6 Safety Requirements

All users of the software, except visitors, must have a login ID and password. Personal information of customers is kept confidential to ensure privacy and data security.

5 Overall Conclusion

In conclusion, the development of the e-commerce website has been a significant undertaking aimed at providing users with a seamless online shopping experience. Through the implementation of various features and adherence to non-functional requirements, the website aims to meet the needs of both administrators and users while ensuring security, performance, maintainability, reliability, availability, and safety.

The system's robust security measures, including user authentication and access controls, safeguard sensitive information and transactions, instilling confidence in users. Performance requirements, such as response times and capacity, are met through the use of appropriate technologies and optimization techniques.

Maintainability is ensured through modular design and comprehensive documentation, facilitating future enhancements and updates. Reliability testing minimizes computational errors, while continuous availability ensures uninterrupted service for users. Administrator Maintenance of database of customers and product , Customer Buy products from e-commerce site , Seller Sell products on e-commerce site , Visitor Surfs through the e-commerce site.

Overall, the e-commerce website stands as a testament to our commitment to delivering a high-quality, user-centric platform for online shopping. Through ongoing monitoring, feedback collection, and continuous improvement, we strive to meet evolving user needs and maintain the website's relevance and effectiveness in the ever-changing digital landscape.