User Requirement Definition

Introduction

The U-Bid Online Auction System is designed to facilitate the buying and selling of items via an online platform, connecting sellers and buyers worldwide. The platform provides features for user registration, item listing, bidding, and payment processing, aiming to deliver a seamless and user-friendly experience.

User Requirements

1. **User Registration and Login**

   - Users must be able to register by providing personal details including name, email, address, and phone number.

   - Users must be able to log in using their credentials (username and password).

   - The system should provide password recovery options.

2. **User Profiles**

   - Users must have a profile that stores their personal information.

   - Users should be able to update their profile details.

- Users should have a dashboard that displays their activities, such as active bids and selling items.

3. **Item Listing**

- Users (sellers) must be able to list items for sale by providing an item title, description, and category.

- Users must be able to upload images of the items.

- Users should be able to set the starting price and auction duration.

4. **Bidding**

- Users (buyers) must be able to view listed items and place bids.

- The system should display real-time updates of the highest bid.

- Users should be notified if they are outbid.

5. **Payment Processing**

- The system must support multiple payment methods (credit card, PayPal, etc.).

- Users should be able to complete transactions securely.

- The system should generate receipts and order summaries for completed transactions.

6. **Notifications**

  - Users should receive notifications for important events such as being outbid, auction won/lost, and payment confirmation.

  - Notifications should be sent via email.

7. **Search and Navigation**

  - Users must be able to search for items using keywords and filters (category, price range, etc.).

  - The system should provide an intuitive navigation interface to browse different categories.

8. **Order History**

  - Users should have access to a history of their transactions (bids placed, items bought/sold).

  - The order history should include details such as item description, bid amount, and transaction date.

9. **Reports**

  - Users (sellers) should be able to generate reports on their sales.

- The system should provide reports on user activities, auction outcomes, and financial transactions.

System Requirements Specification

Functional Requirements

1. **User Management**

   - Implement user registration, login, and profile management functionalities.

   - Secure storage of user credentials and personal information.

2. **Item Management**

   - Develop modules for item listing, editing, and deletion.

   - Ensure images are stored and retrieved efficiently.

3. **Auction Management**

   - Create functionality for initiating and managing auctions.

   - Implement real-time updates for bidding activities.

4. **Payment Integration**

 - Integrate with payment gateways (e.g., Stripe, PayPal).

 - Ensure secure processing and storage of payment information.

5. **Notification System**

  - Develop a module to handle email notifications.

  - Ensure timely and accurate delivery of notifications.

6. **Search and Filtering**

  - Implement search functionality with filtering options.

  - Optimize search for performance and accuracy.

7. **Reporting and Analytics**

  - Create modules for generating user activity and sales reports.

  - Ensure data accuracy and provide export options.

Non-Functional Requirements

1. **Performance**

  - The system should handle multiple concurrent users without performance

degradation.

- Response time for user actions should be under 2 seconds.

2. **Security**

   - Implement data encryption for sensitive information (user credentials, payment details).

   - Ensure the system is protected against common vulnerabilities (SQL injection, XSS).

3. **Scalability**

   - The system architecture should support scaling to accommodate increasing users and transactions.

4. **Usability**

   - The user interface should be intuitive and easy to navigate.

   - Provide help and support features for users.

5. **Reliability**

   - The system should have high availability with minimal downtime.

   - Implement backup and recovery mechanisms.

6. **Compatibility**

   - Ensure the system is accessible via major web browsers (Chrome, Firefox, Safari).

   - Provide mobile-friendly interfaces.

7. **Maintainability**

   - The system codebase should be well-documented.

   - Implement modular design to facilitate updates and maintenance.

This comprehensive set of user and system requirements will guide the development of the U-Bid Online Auction System, ensuring it meets user needs and performs reliably under various conditions.