

Srs Document

Version 1.1



**Case Study 1**

**Online Auction Application**

**Submitted to**

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Change History

Version 1.1

1. Updated Use case diagram
2. Use case description added
3. Complete SRS document

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# Section 1: Introduction

## **Purpose**

The purpose of this project is to create an online auction platform where users can list and bid on items without visiting the auction place. Web application will provide bidding during auction periods and manage ratings and feedback for both seller and user. It will manage unsold items and maintain transaction records automatically.

**Context**

This project is a standalone web application for online auctions. It will operate independently and is not intended to integrate with any existing systems.

**Information Objectives**

**Input:**

* User accounts and profiles (including names, usernames, emails, passwords)
* Item details (descriptions, images, starting prices, auction durations)
* Bids on listed items
* User ratings (for buyers and sellers)

**Output:**

* User profiles
* Ratings of user
* Listed items with current bids
* Ending time of items
* Confirmation messages for successful bids
* Confirmation on messages for successful purchases

**Major Function and Performance**

* User registration, login, and profile management.
* Item listing with auction duration (1, 5, or 14 days).
* Bidding functionality
* Automatic awarding of items to the highest bidder upon auction expiry.
* Buyer and seller rating system for feedback.
* Unsold item management.
* record (buyers, items, and prices).

**Constraint**

1. **Time Constraint:** six-month time duration for project completion.
2. **Budget Constraint:** There is a fixed budget allocated for the project and we have ti develop the project within the given time and budget.
3. **Resource Constraint:**

* Human resources: Limited skilled human resources available.
* Equipment: system will be developed on personal laptops

1. **Language Constraint:** Java language will be used.

## 1.3) **Definitions**

* **IEEE :** Institute of Electrical and Electronics Engineers
* **SRS:** Software Requirements Specification
* **FTR:**  Formal technical review
* **ISO -** International Standard Organization
* **Seller:** person who will sell the product
* **Bidder:** person who will bid on the product
* **Admin:** administratorof the online auction website.

## 1.4) **References**

* **Book:** Systems and Software Engineering - Life Cycle Processes - Project Management

* INTERNATIONAL STANDARD ISO/IEC/ IEEE 16326 Reference number ISO/IEC/IEEE 16326:2019(E) Second edition 2019-12

(International Standard ISO/ IEC/ IEEE 16326 2nd Edition- 2019)

* IEEE Recommended Practice for Software Requirements Specifications

(International Standard ISO/ IEC/ IEEE 16326 2nd Edition- 2019)

## 1.5) **Overview**

The following sections in this SRS (Software Requirements Specification) are organized as follows:

In Section 2, you will find information regarding the project perspective, product functions, constraints, and dependencies.

Section 3 outlines details related to input and output, functions, performance requirements, and analysis mod

# Section 2: Overall Description

## 2.1 Product perspective

The online auction system will operate as an independent system, providing a platform for users to buy and sell items through auctions. This website is a standalone application for online auctions. It does not integrate with any existing auction systems.

**2.1.1. System Interface**:

Not applicable.

**2.1.2. User Interface**:

The auction website will feature distinct interfaces tailored to different user roles: Admin, Seller, and Bidder. Each interface will provide specific functionalities relevant to the user's role, ensuring a seamless experience for managing auctions, listings, and bids.

1. **Admin interface:**

The system serves as the user interface for Admin to login into the Online Auction System, to manage the overall operations, Key features include:

* **Dashboard:** A centralized dashboard providing an overview of site activity, including ongoing auctions and user registrations.
* **User Management:** Tools to manage user accounts, including the ability to add, suspend, or ban users, as well as view user activity logs.
* **Listing Management:** Facilities to review and moderate item listings, including the ability to approve, edit, or remove listings.
* **Auction Control:** Controls to set site-wide parameters such as auction duration and bidding rules.

1. **Seller interface:**

The system serves as the user interface for seller to login into the Online Auction System, the Seller interface empowers users to list items for auction, rate buyer. Key features include:

* **Listing Creation:** Intuitive forms to create new listings, including fields for item details, images, starting price, and auction duration.
* **Listing Management:** Tools to view, edit, or remove existing listings.

1. **Bidder Interface:**

The Bidder interface provides a user-friendly experience for login, participating in auctions and rate seller. Key features include:

* **Browse Listings:** An intuitive interface to explore available listings, including search and filtering options to find items of interest.
* **Place Bids:** Easy-to-use bid placement functionality, with clear information on current bid status and minimum bid increments.
* **Auction Status:** Real-time updates on auction status, including countdown timers for auctions nearing their end.
* **Communication:** Messaging features to contact sellers, ask questions, and clarify details about listings or bidding processes and payment method.

**2.1.3. Hardware Interface**: Not applicable

**2.1.4. Software Interface**: The website may utilize external software for functions such as database management, operating system support, and communication protocols.

**2.1.5. Communications Interfaces:** Not applicable

**2.1.6. Memory Constraints:** Not applicable

**2.1.7. Operations:** Not applicable

**2.1.8. Site Adaption Requirements:** Not applicable

## 2.2 Product functions

* User login
* Listing items for auction
* Approves or reject
* Facilitating bidding on listed items
* Managing auction durations and bids
* Implementing a rating mechanism for buyers and sellers

## 2.3 User characteristics

There are three main users of Online Auction System:

1. **Admin:** Admin login into the Online Auction System entering username and password, to manage the overall operations including: ongoing Auction, approve item, remove item from list, start Auction, extend auction, end auction.
2. **Seller:** seller login into the Online Auction System entering username and password, list item in Auction, remove existing item from list and rate buyer.
3. **Bidder**: seller login into the Online Auction System entering username and password, bid for items and rate the seller.

## 2.4 Constraints

* Project Libre used for Gantt Chart
* ArgoUML for Use case diagrams, Domain model, SSD, SD, AD.
* MS word for documentation
* HTML and CSS for designing the structure.
* Java and PHP for programming
* MySQL for database
* There will be following project constraints:
* Budget abc
* six-month time

## 2.5 Assumptions and dependencies

* Users are required to register accounts to participate in auctions, and it is assumed that they will provide accurate and valid information during the registration process.
* The assumption is made that users will provide honest and constructive feedback through the rating system.
* The software will function properly in all kinds of browsers

# Section 3: Specific Requirements

## Functional requirements

* **Register:** Users can create a new account on the platform.
* **Login**: Users can authenticate themselves to access their account.
* **List items**: Sellers can list items they want to auction.
* **Approve items**: Admin can approve items listed by sellers for auction.
* **Remove items**: Sellers can remove their listed items from the auction.
* **Start auction**: Admin can initiate an auction for their listed items.
* **Extend auction**: Sellers can extend the bidding period for an ongoing auction.
* **End auction**: Sellers or administrators can conclude an ongoing auction.
* **Bid for item**: Users can place bids on items available in the auction.
* **Rate seller**: Buyers can provide feedback and rating for sellers based on their transaction experience.
* **Rate user**: Users can rate each other based on their interactions within the platform.

## Non-Functional requirements

**Performance:**

The system should be capable of handling a large number of users without a significant drop in performance. Response time for operations such as bidding, listing items, and should be minimal.

**Reliability:**

The system should have a high level of reliability and it should be resilient to failures. If it occurs it should handle failure properly

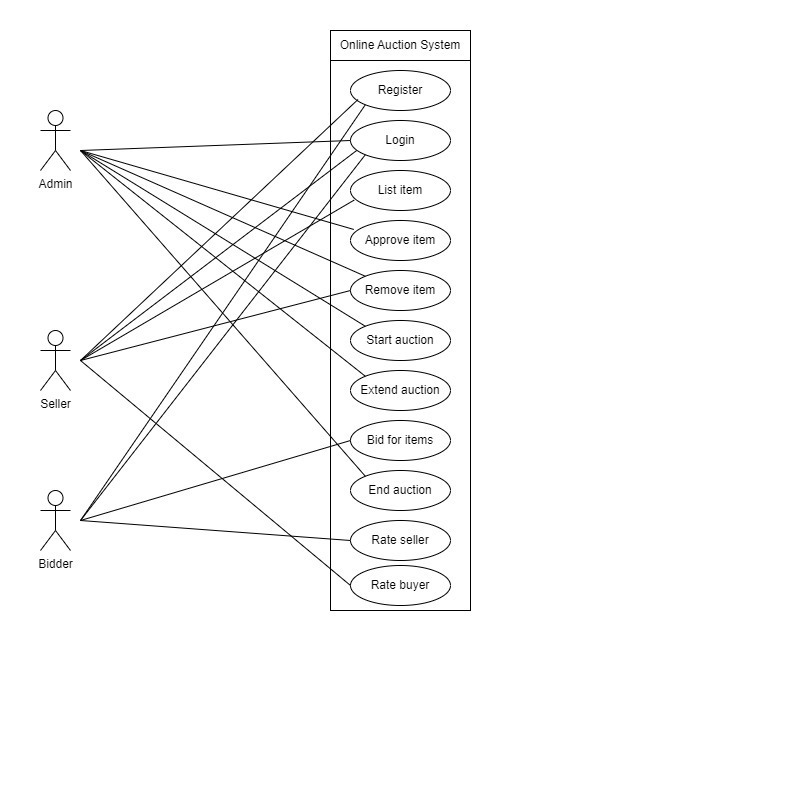
**Object-Oriented Approach:**

The system shall be designed and implemented using an object-oriented approach.

**Java programming language:**

The system shall be implemented using Java Programming Language

# Usecase diagram:



# Usecase Description:

**Khairullah Khaliq**

**ID: UC-1**

**NAME:** Register

**Input:**

* Full Name
* Email Address
* Desired Username
* Password
* Additional Information

**Primary actors:** Bidder, seller.

**Stakeholders:** Admin, Bidder, seller.

**Pre-condition:** None

**Post-condition:** User is successfully registered on the system.

**Main Success Scenario:**

1. User navigates to the registration page.
2. User enters registration details, including Username (unique identifier chosen by the user), Email address (valid email address), Password (meeting complexity requirements), Additional information (Name, phone number, etc.)
3. User submits the registration form.
4. System validates the provided information.
5. If validation succeeds, the system sends a confirmation email to the user's email address with a verification link.
6. User receive confirmation email.
7. User clicks on the verification link in the confirmation email.
8. System verifies the user's email address and activates their account.
9. User receives a notification of successful registration.

**Alternative flow:**

2. User enters invalid information.

a) Invalid Username:

During username entry, the system checks for username availability in real-time.

If the username is already taken, the system displays an error message prompting the user to choose a different username.

b) Weak Password:

The error message may suggest using a combination of uppercase and lowercase letters, numbers, and symbols.

4. If any provided information fails validation or if there are errors in the submission:

a) The system displays error messages corresponding to the validation failures.

b) User is prompted to correct the errors and resubmit the registration form.

5. If the system encounters an error sending the confirmation email

(e.g., network issue, invalid email address).

a) The user can retry registration.

6. If the user does not receive the confirmation email within a reasonable timeframe:

a) The user check their spam folder.

b) User verifies the correctness of the email address provided during registration.

7. User click expired verification link, the system displays an error message indicating the link is invalid.

a) The user can request a new verification email by entering their registered email address on a page.

b) The system resends a new confirmation email with a fresh verification link.

**Special requirement:**

1)The registration form and email verification should be easy to use for everyone.

2) A password meter can tell you how strong your password.

3) The system checks for username availability in real-time.

**Frequency:** whenever a new user wishes to register for an account on the website.

**Special issue:** Email delivery issues (spam filters, inactive email addresses) could prevent successful verification.

**Output:** Newly created user account for successful registrations.

**ID: UC2**

**Name:** login.

**Input:**

* Username
* Password

**Primary actors:** Bidder, Admin, seller.

**Stakeholders:** Admin, Bidder, seller.

**Pre-condition:** User account is created in the online Auction system.

**Post-condition:** User successfully logs into the online Auction system.

**Main Success Scenarios:**

1. User (Admin, seller, Bidder) opens the online Auction System login page.

2. System presents the login form.

3. User enters their username and password.

4. System validates the entered credentials.

5. If the credentials are invalid:

a) The system displays an error message.

b) User is prompted to re-enter the correct credentials.

c) The use case back to step no 3.

6. If the credentials are valid:

User successfully logs into the online Auction system.

**Alternative flow:**

1. If the user forgets the password:

a) User clicks on the "Forgot Password" link.

b) System guides the user through the password recovery process.

c) After successful password recovery, the user is redirected to the login page.

d) The use case continues from step 3.

**Special requirements:**

The system must ensure secure transmission of login credentials over the network.

**Frequency of requirements:**

Users may log in multiple times a day, depending on their roles and responsibilities within the online Auction system.

**Special issue:** Network connectivity issues could prevent successful login attempts.

**Output:** User logs into the system.

**ID: UC3**

**Name:** List item.

**Input:**

* Item Id
* Item name
* Item description
* Starting price
* Optional: Images of the item

**Primary actors:**  seller.

**Stakeholders:** Admin, Bidder, seller.

**Pre-condition:** The user must be logged into the online Auction system.

**Post-condition:** The Item is listed for auction.

**Main Success Scenarios:**

* 1. User navigates to the "List Item" section of the website.

1. User fills out a form providing details of the item they wish to list, including:

* Item Id
* Item name
* Item description
* Starting price
* Optional: Images of the item

1. User submits the listing request to the system.
2. The system notifies the admin of the pending item listing request.
3. Admin approves or rejects the listing request.

• If approved, proceed to step 6.

• If rejected, notify the user with the reason for rejection and return to step 2.

1. The approved item is now listed for auction on the website.

**Alternative flow:**

3. If any provided information fails validation or if there are errors in the submission:

a) User is prompted to correct the errors and resubmit the listing request.

**Special requirements:**

The system must ensure secure transmission of login credentials over the network.

**Frequency of requirements:**

multiple times a day/week.

**Output:** The Item is listed for auction.

**ID: UC4**

**Name:** End Auction.

**Input:**

* Auction duration (1,5,14 days).
* Bids placed on the item.

**Primary actors:**  Admin.

**Stakeholders:** Admin, Bidder, seller.

**Pre-condition:** The auction for the item must have started.

**Post-condition:** The auction for the item is successfully ended.

**Main Success Scenarios:**

* 1. Admin or system automatically triggers the end of the auction when the predefined duration (1, 5, or 14 days) expires**.**

2. The auction for the item is successfully ended.

**Alternative flow:**

1. Instead of waiting for the predefined duration to expire, the admin decides to end the auction early.

a) Not enough people are bidding on the item.

b) The seller asks to end the auction early for personal reasons.

**Special requirements:**

The system should provide the functionality for manual intervention by the admin to end the auction before the predefined duration expires.

**Special issue:** Network connectivity issues could delay notifications or system updates.

**Frequency of requirements:**

Occurs each time an auction for an item reaches its predefined duration.

**Output:** Notification to the seller that Auction is ended.

**Muhammad Shahzaib**

**Usecase:** Bid for item

**Input:** Bid price

**Primary Actor:** Bidder

**Stakeholders:** Seller, Bidder, Admin of online auction website

**Preconditions:**

* Bidder has a registered account on the website
* Item is listed for the auction on the website with valid details

**Postconditions:**

* Bidder’s bid is submitted, and it is displayed on website
* Bid is displayed on the top if his bid is the highest bid

**Main Success Scenario:**

1. Bidder navigates to the page of desired product and know about the highest bid on item.
2. Bidder will enter his/her offered price higher than the current highest price.
3. Bidder confirms the Bid Submission.

**Alternate flow:**

1. Current highest price is not visible.
   1. If the user is first bidder its price will be the highest price
2. Bidder entered price is lower than the existing price.
   1. Bidder is asked for re enter the price higher than current price
3. Submission is not completed.

3.1 bid is sent to draft until the submission is done.

**Frequency of occurrence:**

This may occur as many times as possible bidder want to bid for the product in auction

**Output:**

displayNotification to the bidder that Bid is Submitted.

**Usecase:** Extend Auction.

**Input:** Auction duration (1,5,14 days).

Bids placed on the item.

**Primary Actor:**  Seller.

**Stakeholders:** Admin, Bidder, seller.

**Precondition:**

The auction for the item must have started.

**Postcondition:**

The end time of auction for the item is successfully extended.

Bidder is informed about extension by email.

**Main Success Scenarios:**

1. seller navigates to the auction page with current details and end time.
2. Seller applies for time extension.
3. Seller redefines the auction days (more 3, 7 or 15 days)
4. The system displays a confirmation message with additional fees
5. The seller confirms the extension request.

**Alternative flow:**

1. If the seller attempts to extend the auction very close to the end time (within a predefined timeframe, e.g., 5 minutes)
   1. The system will not allow the seller to extend the auction.
2. Seller tries to extend time beyond the limit (i.e. 15 days)

2.1 system ask to redefine time within limit.

**Frequency of occurrence:**

This may occur as many times as possible seller want to extend after the product is online for auction

**Output:**

displaynotification to the seller that Auction is extended.

**Usecase:** Approve item

**Input:** Text comments for approval or rejection.

**Primary Actor:** Admin

**Stakeholders:** Seller, Bidder, Admin of online auction website

**Preconditions:**

* Admin has a logged in account on the website
* Item is Uploaded by seller for the auction on the website with details

**Postconditions:**

* Approved items displayed on website for auction
* Rejected items are deleted and the seller is notified to re upload the product with valid details and pictures.

**Main Success Scenario:**

1. Admin check the uploaded item Listed by each seller
2. Items with valid pictures and details are accepted and Auctioned
3. Items with invalid pictures and details are rejected and Deleted

**Alternate flow:**

1. There is no item uploaded by the seller
   1. Admin will recheck the list after specific time
2. Valid item is rejected
   1. seller will apply again for the reconsideration.
   2. Admin will recover item from the rejected items
3. Invalid item is selected

3.1 admin can delete the product or can end the auction any time.

**Frequency of occurrence:**

One item is approved or reject only once after the seller listed for auction

**Output:**

Output accepted or rejected message

**Qasim Shabeer**

**use case rate buyer**

**primary actor:** seller

**stakeholders**: admin,seller,bidder

**pre-condition**:The auction for the item must be concluded.

**post condition:** the buyer's ratings are updated in the system.

**main success scenario:**

1. The buyer logs into the system.

2. The system asks the seller to rate the buyer.

3. the seller rates the buyer according to his own experience during the transaction.

4. the buyer's ratings are updated in the system.

**alternative flows:**

2.the seller chooses to review the buyer at a later time.

2(a).when the user login to the website again the system asks the bidder to rate the seller.

3.the bidder rates the seller according to his own opinion

4.the seller's ratings are updated in the system

**special requirements:**

none

**frequency of occurrence:**

multiple times a day/week

**use case remove item**

**primary actor:** admin

**stakeholders**: admin,seller,bidder

**pre-condition**:There must be items available in the auction list.

**post condition:** The item is removed from the auction list.

**main success scenario:**

1. The admin logs into the system.

2. The admin selects the option to manage items.

3. The admin selects the items to be removed from the auction list.

4. The item is removed from the auction list.

**alternative flows:**

3.If the item cannot be removed due to an error, the system displays an error message and asks the admin to try again later.

3(a).The admin again selects the items to be removed from the auction list.

4.The item is removed from the auction list.

**special requirements:**

only admin has the authority to remove items.

**frequency of occurrence:**

multiple times a day/week

**use case start auction**

**primary actor:** admin

**stakeholders**: admin,seller,bidder

**pre-condition**:The items must be available for sale.

**post condition:** The system updates the database to reflect the new auction.

**main success scenario:**

1. The admin logs into the system.

2. The admin selects the option to start a new auction.

3. The admin selects the items to be auctioned.

4. The admin sets the duration of the auction.

5. The admin sets the starting price for the auction.

6. The auction starts for the selected items.

7. The system updates the database to reflect the new auction.

**alternative flows:**

6. If the auction cannot be started due to validation errors (e.g., invalid duration or price), the system asks the admin to correct the errors.

6(a). After correcting the errors, the auction starts for the selected items.

7. The system updates the database to reflect the new auction.

**special requirements:**

none

**frequency of occurrence:**

multiple times a day/week

**use case rate seller**

**primary actor:** bidder

**stakeholders**: admin,seller,bidder

**pre-condition**:the item is bought by the bidder

**post condition:** the seller's ratings are updated in the system.

**main success scenario:**

1. The bidder gets the item by successfully bidding for it during the auction.

2. the sytem asks the bidder to review the seller of the bought item.

3. the bidder rates the seller according to his own opinion.

4. the seller's ratings are updated in the system.

**alternative flows:**

2. The bidder chooses to review the seller at a later time.

2(a). When the user login to the website again the system asks the bidder to rate the seller.

3. The bidder rates the seller according to his own opinion

4. The seller's ratings are updated in the system

**special requirements:**

none

**frequency of occurrence:**

multiple times a day/week