



IT314 Software Engineering

BidSphere - An Online Auction System

Group - 4

Mid Evaluation Report

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1) StakeHolders & Users

The StakeHolders and Users are as Follows:

- Admin
- Payment Gateway Provider
- Sellers
- Bidders

Q. How have you identified them?

A. The StakeHolders and Users were identified by:

1. **Studying existing online auction systems** - to understand the common roles and actors involved (e.g., admins, sellers, buyers, payment service providers).
2. **Brainstorming sessions within the team** - to discuss possible users and external parties who would interact with BidSphere.
3. **Surveying potential users** - to validate assumptions about who will use the system and what roles they play and also what kind of features they would prefer.

From the above processes, we concluded that the main stakeholders and users are:

- **Admin** - manages the system, auctions, and user accounts.
- **Payment Gateway Provider** - ensures secure payment transactions.
- **Sellers** - list items for auction.
- **Bidders (Buyers)** - participate in auctions by bidding on items.

Q. What elicitation techniques? and how?

A. We used a combination of techniques to gather requirements:

1. Surveys:

- Distributed to potential sellers and bidders to understand their needs, challenges, and preferences.
- Included both closed-ended (e.g., preferred payment methods) and open-ended questions(e.g., suggestions for improving features).

Below is attached the survey spreadsheet

[+ BidSphere-Survey Form \(Responses\)](#)

2. Brainstorming Sessions

- Conducted within the team to generate ideas, clarify assumptions, and prioritize features for BidSphere
- Helped in identifying overlooked stakeholders and validating system roles

3. Study of Existing Systems

- Analyzed platforms like eBay, OLX auctions, eAuction India, etc to learn best practices and limitations
- Insights from these systems guided us in defining our stakeholder list and functional requirements

All of the above techniques helped us to get a comprehensive and validated set of requirements for BidSphere.

2) Identify the FRs and NFRs

Q. How have you identified them?

A. Identification of Functional and Non-Functional requirements is done by

- **Analyzing Stakeholders and Their Roles:**- for each role we asked “what action do they need to perform in the system to achieve their goals?” These actions became Functional requirements.
- **Studying Auction System Processes:**-we looked at the overall auction lifecycle.User registration → Auction creation → Bidding → Payment → Feedback.
- **Deriving Non-Functional Requirements from Quality Expectations:**- After listing functions, we asked “How should these features perform?” This gave us NFRs.

Functional Requirements

- **Bidding:** Allow bidders to place bids, system validates if the bid follows all auction rules, enables auto-bidding and provides real-time updates.
- **Listing & Auction Setup:** Allow sellers to create new auctions with details (title, images, description, starting bid, reserve price, duration), edit or cancel auctions, and schedule auction timings.
- **Auction History:** Maintain detailed records of past bids, won items, and completed transactions for both bidders and sellers.
- **Payment & Checkout:** Process secure payments, automatically determine winners at auction close, and generate invoices for successful transactions.
- **Account & Access Control:** Enable users to register, login, and manage profiles, with role-based access for admins, sellers, and bidders.
- **Admin Panel:** Provide administrators with tools to monitor auctions, manage users, and handle unauthorized or illegal activities.
- **Search & Browse:** Enable users to search, filter, and browse auction items by categories, keywords, and other criteria.
- **Notifications:** Send real-time alerts for auction start/end, outbid events, payment confirmations, and other important updates.
- **Ratings & Reviews:** Allow buyers to rate sellers and write reviews, while enabling users to view seller ratings to build trust and credibility.

Non-Functional Requirements

- **Performance:** Ensure fast system response with low latency for real-time bidding, notifications, and auction updates.
- **Availability:** Keep the system accessible 24/7 with minimal downtime, especially during active auctions.
- **Scalability:** Support increasing numbers of users, auctions, and transactions without affecting system performance.
- **Security:** Protect sensitive user data with encryption, provide secure payment gateway integration, and enforce strong authentication and authorization.
- **Accessibility:** Ensure the platform is mobile-friendly and compliant with accessibility standards so that all users, including those with disabilities, can access it.
- **Usability:** Provide a simple, intuitive, and user-friendly interface with clear navigation, instructions, and workflows for all types of users.

Q. What elicitation techniques were used? and how?

Elicitation Techniques

- **Stakeholder Survey / Brainstorming**
 - We gathered requirements directly from different stakeholders (Admin, Seller, Bidder) by interviewing and brainstorming with them.
- **Observation of Existing Auction Systems**
 - We studied how real auction platforms (e.g. eBay, eAuction India) function.
 - This helped us refine Auction History, Ratings & Reviews, Notifications.
- **Use Case & Workflow Analysis**
 - We broke down the auction lifecycle into workflows.
 - Example: In Payment & Checkout, we mapped actions like “Winner Selection -> Secure Payment -> Generate Invoice.”
- **Document & Literature Review**
 - We referred to standard guidelines and best practices (especially for security and accessibility) to frame NFRs.
- **Prototyping & Visualization**
 - Using tools like Figma, we sketched user interfaces.
 - This helped us validate UI/UX requirements and refine usability and accessibility features.

3) User Stories

Priorities

High Priority(Red Highlight) - Must Haves

Medium Priority(Yellow Highlight) - Should Haves

Low Priority(Green Highlight) - Nice-to-Haves

Bidder User Stories

US001: Registration/Login

Front: As a bidder, I want to register/log in to the system so that I can place a bid on the listed auction.

Back of Card:

- The system must allow new users to register with a unique email and password.
- Registered users receive a verification email containing a verification code to confirm that their email address is correct.
- After verification the user will get a welcome email and can login to the system.
- Users should receive error messages for invalid login attempts.

US002: Browse by Category

Front: As a bidder, I want to view posted auctions category-wise so that I can choose which item to bid on.

Back of Card:

- The system must categorize auctions (e.g., Electronics, Furniture, Art, etc.).
- A bidder can filter auctions by selecting a category.
- Categories must update dynamically when new items are posted.

US003: Auto-Bidding

Front: As a bidder, I want to set a maximum bid amount so that the system can automatically bid for me.

Back of Card:

- A bidder can set a maximum bid limit.
- The system automatically increases the bid incrementally until the max limit is reached.
- If another bidder exceeds the max limit, the auto-bid stops.
- Bidder receives confirmation that the auto-bid is active.

US004: Outbid Notification

Front: As a bidder, I want to receive notifications when I am outbid so that I can increase my limit if I want.

Back of Card:

- The system must detect when a bidder is outbid then gets a notification to increase the maximum bid limit.
- A real-time notification must be sent.
- Notifications should contain item details and current highest bid.

US005: Secure Payment

Front: As a bidder, I want to securely pay for items I win so that I can complete the purchase.

Back of Card:

- The system must support secure payment gateways.
- Payment confirmation must be sent after a successful transaction.
- Failed transactions must display an error and allow retry.

US006: Download Invoice

Front: As a bidder, I want to download an invoice for the item I won so that I have a record of my purchase.

Back of Card:

- After winning and paying, the system generates an invoice.
- Invoice must include buyer name, item details, price, taxes, and payment method.
- The bidder must be able to download the invoice as PDF.

US007: Start/End Notification

Front: As a bidder, I want to be notified when an auction I'm interested in starts or ends so that I don't miss it.

Back of Card:

- The system must allow bidders to click a "Notify Me" button for any auction.
- If the bidder clicks Notify Me, the system schedules notifications:
- When the auction starts and When the auction ends.
- Notifications should include auction details.

US008: Auction Watchlist

Front: As a bidder, I want to add auctions to a watchlist so that I can monitor items without immediately bidding.

Back of Card:

- A bidder can add an auction to a personal watchlist.
- Watchlist must show all saved auctions.
- Bidders can remove items from the watchlist anytime.
- Watchlist items should show real-time bid updates.

US009: Rate & Review Sellers

Front: As a bidder, I want to rate and review sellers so that future buyers know about seller reliability.

Back of Card:

- After winning an auction and receiving the item, the bidder can rate the seller.
- Bidders can also add an optional text review.
- Reviews must be visible to other users.
- A bidder cannot rate/review unless a completed transaction and item delivery confirmation exist.

US010: Raise Dispute

Front: As a bidder, I want to raise a dispute if the delivered item is not as described so that I can request a refund.

Back of Card:

- If the buyer reports the item is damaged, wrong, or not as described, the system marks it as a dispute case.
- In case of dispute:
 - The buyer submits confirmation and reason (with optional photo proof).
 - The admin reviews the complaint.
 - If the complaint is valid, refund is processed to the buyer and payment is withheld from the seller.
- The buyer and seller must be notified of the dispute outcome.

Seller User Stories

US011: Post Items for Auction

Front: As a seller, I want to create a auction for my items, so that bidders can place bids on them.

Back of Card:

- The seller should be able to create a new auction by providing item details (title, images, category).
- The seller must set auction parameters such as minimum price, start time, end time.
- The system should validate mandatory fields before allowing the auction to be posted.
- An auction posting fee must be charged to the seller after the auction is created.
- Once created, the auction should be visible to buyers within the marketplace for bidding until the end time.

US012: View Posted Auctions

Front: As a seller, I want to view my posted auctions so that I can check their status.

Back of Card:

- The seller should be able to see a list of all auctions they have posted.
- Each auction entry must display details such as item name, start time, end time, current highest bid, and status.
- Auction list should update in real-time as bids are placed or status changes.

US013: Set Min. Price

Front: As a seller, I want to set a minimum price for my item so that bidding starts from that price.

Back of Card:

- The seller should be able to enter a minimum price when creating the auction.
- The system must not accept bids lower than the set minimum price.
- Buyers should clearly see the minimum price before placing a bid.
- If no bids meet the minimum price, the auction should end without a winner.

US014: View Placed Bids

Front: As a seller, I want to view all bids placed on my auction so that I can analyze demand.

Back of Card:

- The seller should be able to view a list of all bids placed on their auction.
- Each bid entry must show bidder details (username/ID), bid amount, and time of bid.
- The system should sort bids in descending order (highest bid on top).
- Bid list should update in real-time as new bids are placed.

US015: Receive Payment

Front: As a seller, I want to receive payment once the transaction is complete so that I can get my earnings.

Back of Card:

- Payment should be released to the seller only after the buyer receives the item.
- The system must automatically calculate the seller's earnings after deducting platform fees or charges.
- The seller should be able to view payment status.
- Funds should be transferred securely to the seller's registered bank account.

US016: Edit/Cancel Auction

Front: As a seller, I want to edit or cancel my auction before it starts so that I can correct mistakes or withdraw items.

Back of Card:

- The system must allow the seller to edit auction details (title, description, images, start price, reserve price, start/end time) before the auction begins.
- The system must allow the seller to cancel the auction before it starts.
- The system must update the auction listing immediately after edits are saved.
- The system must notify the seller with a confirmation when an auction is successfully edited or canceled.
- If the seller tries to edit or cancel after the auction has started, the system must block the action and display an error message.
- If technical issues prevent saving changes, the system must alert the seller and preserve existing auction details.
- All edits and cancellations must be logged for auditing purposes.

US017: View Feedback

Front: As a seller, I want to view feedback from bidders so that I can improve my credibility.

Back of Card:

- The system must allow the seller to view feedback left by bidders on completed transactions.
- Feedback must include rating, comments, and bidder's display name/alias.
- The seller's overall feedback score must update automatically when new feedback is added.
- The seller must be able to view feedback history for each item sold.
- If no feedback is available, the system must display a message like "No feedback yet."

- If inappropriate or abusive feedback is detected, the system must allow the admin to review and remove it.
- Feedback must be visible in real time after submission by the bidder.

Admin User Stories

US018: Auction ended Notification

Front: As the admin, I want to notify the winning bidder and seller when an auction ends so that the transaction can proceed.

Back of Card:

- The system must automatically identify the winning bidder when an auction ends.
- The winning bidder must receive a notification with auction details and payment instructions.
- The seller must receive a notification with winner details and final bid amount.
- Notifications must be sent in real time once the auction closes.
- If the reserve price is not met, the system must notify the seller that no winner was selected.
- If notifications fail to deliver, the system must retry and alert the admin.
- All auction closure notifications must be logged for reference.

US019: Send payment request

Front: As an admin, I want to send a payment request to the winning bidder so that the buyer is reminded to complete the transaction.

Back of Card:

- The system must allow the admin to trigger a payment request for the winning bidder.
- The payment request must include auction details, final bid amount, and due date.
- The winning bidder must be notified instantly via in-app notification/email.
- The system must update the payment status once the bidder completes the transaction.
- If the bidder ignores the payment request beyond the due date, the system must flag the order for admin action.
- If the payment request fails to send (e.g., due to technical issues), the system must retry or alert the admin.
- All payment requests must be recorded for tracking and auditing purposes.

US020: User Management

Front: As an admin, I want to suspend or ban fraudulent users so that the platform stays safe.

Back of Card:

- The system must allow the admin to search and identify users flagged for fraud.

- The admin must be able to suspend or permanently ban such users.
- Suspended/banned users must not be able to log in or participate in auctions.
- The system must notify the user about their suspension/ban with a reason.
- If the admin suspends a user by mistake, the system must allow reinstating the account.
- If multiple fraud reports are received for a user, the system must auto-flag the account for admin review.
- All suspension/ban actions must be logged for audit purposes.

US021: Review Listings

Front: As an admin, I want to review and approve auction listings so that inappropriate content is not posted.

Back of Card:

- The system must allow the admin to view newly submitted auction listings before they go live.
- The admin must be able to approve or reject listings.
- Approved listings must appear in the auction catalog for bidders to see.
- Rejected listings must notify the seller with a reason for rejection.
- If a listing contains inappropriate content, the system must block it from going live.
- If the admin does not review within a set time, the system must flag the listing for priority action.
- If a previously approved listing is later reported as inappropriate, the system must allow the admin to unlist it.

US022: Resolve Disputes

Front: As an admin, I want to resolve disputes between bidders and sellers so that the platform maintains trust.

Back of Card:

- The system must allow the admin to view dispute details raised by bidders or sellers.
- The admin must be able to review transaction history, bids, and messages related to the dispute.
- The admin must be able to take actions such as refund, cancel order, or warn users.
- Both parties must be notified once the dispute is resolved.
- The dispute case must be marked as closed after resolution.
- If evidence from either party is missing, the system must prompt the admin before closing.
- If the admin cannot resolve the dispute immediately, the system must allow marking it as “Pending Review.”

US023: Assign Delivery Person

Front: As an admin, I want to assign a delivery person so that items are collected and delivered successfully.

Back of Card:

- The system must allow the admin to assign a delivery person to an order.
- The seller must be notified with assigned delivery person details.
- The buyer must be notified when the item is out for delivery.
- The system must track delivery status (assigned → in transit → delivered).
- If no delivery person is available, the system must notify the admin to reschedule.
- If the delivery person rejects the assignment, the order must return to the admin's queue.
- If the delivery fails, the system must mark the order for admin review.

US024: Delivery Confirmation

Front: As an admin, I want to receive confirmation from the buyer about delivery condition so that I can close the transaction securely.

Back of Card :

- The system must request confirmation from the buyer after delivery.
- The buyer must be able to confirm whether the order is in proper condition.
- The admin must receive the buyer's confirmation in real time.
- The transaction must only be closed after buyer confirmation.
- If the buyer reports an issue, the system must flag the order for admin review before closing.

US025: Generate Reports

Front: As an admin, I want to generate reports on revenue, users, and auctions so that I can track platform growth.

Back of Card:

- The system must generate reports on revenue, users, and auctions.
- Reports must be downloadable in standard formats (e.g., PDF, CSV).
- The data in reports must be accurate and up to date.
- The admin must be able to select a time range for reports.
- The report must include summary as well as detailed breakdowns.

US026: Monitor Activity

Front: As an admin, I want to monitor suspicious bidding activity so that I can prevent scams.

Back of Card :

- The system must flag unusually high or repetitive bids as suspicious.
- The admin must be notified in real time when suspicious activity occurs.
- The admin must be able to review details of flagged bids (user ID, amount, time).
- Suspicious bidders must be temporarily restricted until reviewed.
- Normal bidding must not be interrupted for other users.

Payment Gateway Provider User Stories

US027: Secure Transactions

Front of Card: As a payment gateway provider, I want to process all transactions securely so that users trust the platform.

Back of Card :

- All payment details must be encrypted during transmission.
- The system must comply with security standards.
- The gateway must not store sensitive payment information in plain text.
- Transactions must fail if security checks are not passed.
- Users must see a secure confirmation page after successful payment.

US028: Payment Success/Failure Notification

Front of Card: As a payment gateway provider, I want to send real-time payment success/failure status so that the system updates immediately.

Back of Card :

- The payment gateway must send success or failure status immediately after processing.
- The system must update the order status as “Paid” only if the payment is successful.
- The system must not confirm the order if the payment fails.
- The user must receive instant notification of payment success or failure.
- The payment status message must be securely transmitted to avoid tampering.

US029: Support Multi Payment Options

Front of Card: As a payment gateway provider, I want to support cards, wallets, UPI, and net banking so that users have flexibility.

Back of Card :

- The system must show cards, wallets, UPI, and net banking as payment options.
- The user must be able to choose any of the supported methods.
- The transaction must only be completed if the payment details are valid.
- The order should not be marked as paid if the payment fails.
- A confirmation must be sent to the user once payment is successful.

4) EPICs

EPIC01: User Authentication and RBAC

Objective: This epic involves authentication and authorization of users

Value: This ensures protection of the user data by preventing unauthorized access and forms security foundation of the platform

User Stories included:

- US001 (Registration/Login)
- US020 (User Management)

Key Metrics: ≈100% successful login rate and proper RBAC enforcement

Assumptions: Users have unique emails, JWT tokens are securely managed by system, Admins and Users follow proper role based guidelines

EPIC02: Auction Management

Objective: This epic involves around creation, browsing, modifying and cancellation of auctions

Value: Enables sellers to list their items for auction and allows buyers to navigate the auction catalogue

User Stories included:

- US002 (Browse by Category)
- US011 (Post Items for Auction)
- US012 (View Posted Auctions)
- US013 (Set Min. Price)
- US014 (View Placed Bids)
- US016 (Edit/Cancel Auction)
- US021 (Review Listings)

Key Metrics: Successful visibility of all Auctions that are listed, update categories dynamically, auctions are accurately modified and cancelled when required

Assumptions: Seller provides correct auction details including category. System validates all auction rules before posting

EPIC03: Bidding Features and Notifications

Objective: This epic includes both actual bidding process and real time updates to the user

Value: Enhances User experience by special features in bidding as well as increases User engagement by notifications

User Stories included:

- US003 (Auto-Bidding)
- US004 (Outbid Notification)
- US007 (Start/End Notification)
- US008 (Auction Watchlist)
- US018 (Auction ended Notification)

Key Metrics: Successful notification delivery, accuracy of auto-bid feature, update watchlist items in real time

Assumptions: Users have active accounts and are logged in, Network latency is within acceptable limits, System clock is synchronized for auctions

EPIC04: Payment Integration

Objective: This epic focuses on the payment flow, invoice generation and secure processing

Value: Builds trust and guarantees secure transactions

User Stories included:

- US005 (Secure Payment)
- US006 (Download Invoice)
- US015 (Receive Payment)
- US019 (Send payment request)
- US027 (Secure Transactions)
- US028 (Payment Success/Failure Notification)
- US029 (Support Multi Payment Options)

Key Metrics: ≈100% successful transaction rate, secure data transmission

Assumption: Payment Gateway APIs are reliable, User have valid payment methods and all transactions follow regulatory standards

EPIC05: Feedback Handling

Objective: This epic is about building platform credibility via ratings, reviews and dispute handling

Value: Improves user trust and transparency while ensuring disputes are resolved fairly

User Stories included:

- US009 (Rate & Review Sellers)
- US010 (Raise Dispute)
- US017 (View Feedback)
- US022 (Resolve Disputes)

Key Metrics: >95% disputes resolved, feedbacks are visible in real time

Assumptions: Users provide honest feedback, Admins follow dispute resolution guidelines, System logs all feedback accurately

EPIC06: Delivery Post-Transaction Workflow

Objective: This epic focuses on the post transaction process which includes handling delivery of items

Value: Guarantees secure and timely delivery of products

User Stories included:

- US023 (Assign Delivery Person)
- US024 (Delivery Confirmation)

Key Metrics: 100% delivery confirmation logged and timely assignment of delivery person

Assumptions: Delivery agents are available, User provides correct delivery information

EPIC07: Analytics

Objective: This epic is regarding overall platform and data insights

Value: Supports decision making, business growth and fraud prevention

User Stories included:

- US025 (Generate Reports)
- US026 (Monitor Activity)

Key Metrics: Reports are generated correctly and in a timely manner. Suspicious activities are flagged accurately

Assumptions: System logs all relevant events. Reports are based on accurate and complete data. Admins have appropriate access to analytics dashboards.

5) Conflicts among the EPICs

ConflictID	Conflict Description	EPICs involved	Conflict Resolution
C01	The sellers want minimal friction while listing an auction. Buyers want more strict validation and documentation for avoiding disputes	EPIC02 (US011), EPIC05 (US022)	Balance with light weight and critical validation checks
C02	If sellers are paid instantly, buyers cannot get refunds. If refunds are allowed anytime, sellers cannot get instant payouts	EPIC04 (US015), EPIC05 (US010)	Define clear payment dispute policies and payment flow must be escrow ¹ based
C03	Buyers want fair visibility of auctions, admins want to prefer top sellers, new sellers would want exposure and overpromoting top sellers would discourage newcomers	EPIC02 (US002), EPIC07 (US025)	Show 70% top sellers and 30% rotating new sellers to balance fairness, growth, and revenue

¹Escrow - is a financial arrangement where a neutral third party holds money or assets until certain conditions of a transaction are met. Here the system holds the money for x days(as mentioned in the seller's refund policy) and once no dispute is raised in the window, payment is given to the seller automatically.

6) Proof of Concept Sprint01

This section contains the Proof of Concept (POC) for Sprint 1 of the Bidsphere - Online Auction System and is structured into the following sections: Sprint Objective, Scope, Methodology, Validation, Outcomes, Limitations, Recommendations, GitHub Repository, Implementation Preview that contains Backend Snapshots, Frontend Snapshots and Figma Prototype.

Sprint Objective

The objective of this sprint is to implement secure authentication with verification of email by verification code - in our Online Auction System - Bidsphere and the user not able to access Admin endpoints, Admin authentication by IP address. The POC aimed to ensure following agendas:

- User can register as well as login with secured password hashing
- Authentication based on JWT token and email verification
- Admin authentication based on IP address of requested device

Scope

This sprint is limited to Admin authentication and user authentication with email verification. Frontend included modernized UI design for login/register and homepage.

Methodology

Backend Setup

Implemented /register and /login endpoints

Added email verification by sending verification code for user to authenticate

Implement JWT token Authentication for access

Admin Authentication by checking IP address of admin device

Frontend Setup

React Based login and registration pages connected with backend APIs=

Consistent color palette spacing and typography overall

Implemented Responsive design and smooth animations for better UI

Validation

Created test accounts

Tested admin authentication by checking IP address

Verified JWT token, email transporter and sender

Outcomes

-Registration and Login working with hashed passwords

-Providing verification and welcome email to user

-Users cannot access admin endpoints

Limitations

- No password reset option
- No bidding functionality yet
- Limited data visualization in Homepage

Recommendations

- Implement Reset Password flow
- Add Auction CRUD APIs(create/list/update/delete auctions)
- Add monitoring for suspicious login attempts
- Expand frontend dashboard with charts/analytics for admins
- Enhance homepage with real auction data once bidding is implemented

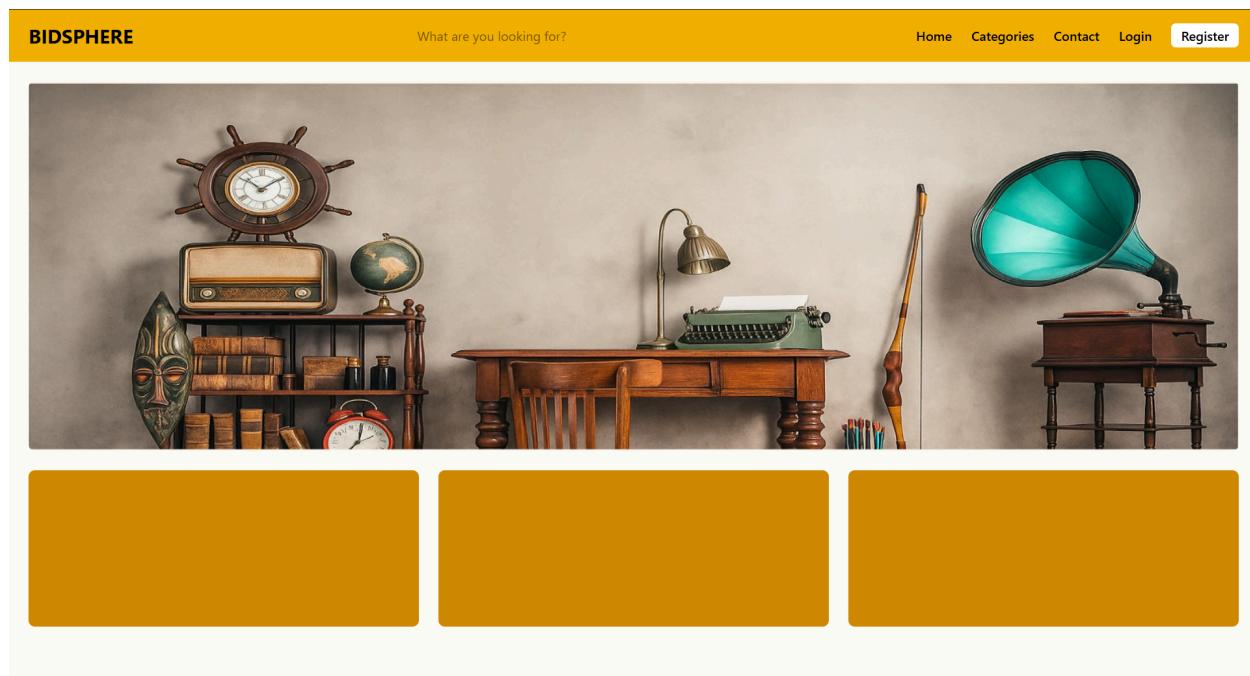
Github Repo Link:

<https://github.com/ParvaDRaval/BidSphere-Online-Auction-System>

Implementation Preview

This subsection provides a visual walkthrough of Sprint 1 deliverables, highlighting the implemented designs, frontend interfaces and backend functionalities in action

FRONTEND



A screenshot of the Bidsphere login page. The header features a yellow bar with the site name "BIDSHERE" on the left and navigation links "Home", "Categories", "Contact", "Login", and "Register" on the right. Below the header is a large red background image showing a stylized illustration of a person holding a megaphone and a speech bubble that says "BID". A hand holds a red circular sign with "BID" on it. Another hand holds a stack of money. The main form area is titled "Log in" and contains fields for "Email ID", "Password", and "Select Role". There is also a "Remember Me" checkbox and a red "Log In" button.

A screenshot of the Bidsphere register page. The layout is identical to the login page, with a yellow header, a red "BIDSHERE" logo, and a red background image of a bidding scene. The main form area is titled "Create an account" and includes fields for "Name", "Email ID", and "Password". A red "Create Account" button is at the bottom. Below the button, a link says "Already have an account? Log in".

[Video link](#)

BACKEND

User register request :

The screenshot shows the Postman application interface. In the top navigation bar, 'POST Register' is selected under the 'BidSphere / Register' collection. The 'Body' tab is active, showing a POST request to 'http://localhost:5000/bidsphere/user/register'. The request body is set to 'raw' and contains the following JSON:

```
1 {
2   "username": "mahek",
3   "email": "mahekvaghara@gmail.com",
4   "password": "1234"
5 }
```

Below the request, the response status is '201 Created' with a response time of '335 ms' and a size of '282 B'. The response body is displayed as:

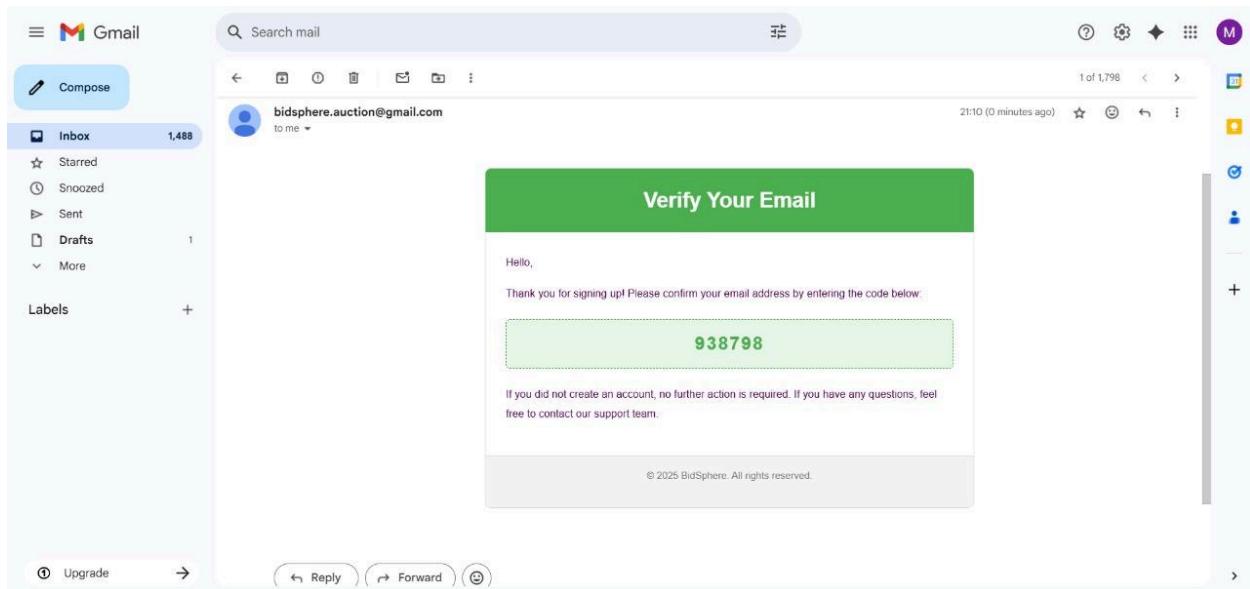
```
{ "message": "User registered successfully" }
```

Console:

The screenshot shows a terminal window with the following output:

```
PS D:\mahek\branch> npm run dev
[nodemon] starting `node server.js`
Server running on port 5000
Verification mail send successfully {
  accepted: [ 'mahekvaghara@gmail.com' ],
  rejected: [],
  ehlo: [
    'SIZE 35882577',
    '8BITMIME',
    'AUTH LOGIN PLAIN XOAUTH2 PLAIN-CLIENTTOKEN OAUTHBEARER XOAUTH',
    'ENHANCEDSTATUSCODES',
    'PIPELINING',
    'CHUNKING',
    'SMTPUTF8'
  ],
  envelopeTime: 733,
  messageTime: 532,
  messageSize: 2829,
  response: '250 2.0.0 OK 1758386966 d9443c01a7336-26cbd206904sm46082125ad.0 - gsmtp',
  envelope: {
    from: 'bidsphere.auction@gmail.com',
    to: [ 'mahekvaghara@gmail.com' ]
  },
  messageId: '<23d2950b-0787-f7d5-6300-a5bba62f41e5@gmail.com>'
}
```

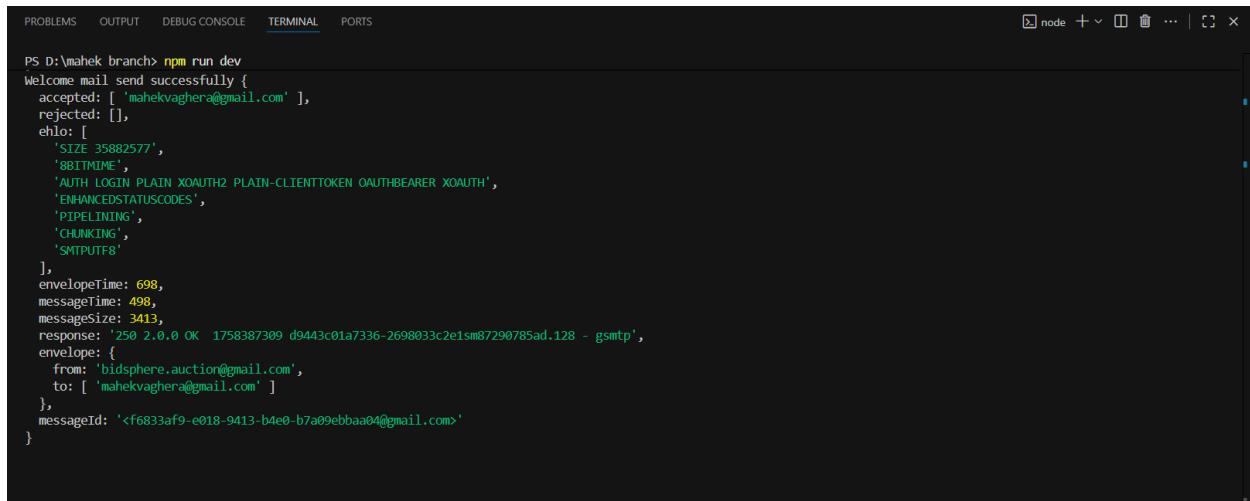
Verification mail:



Verify Email request:

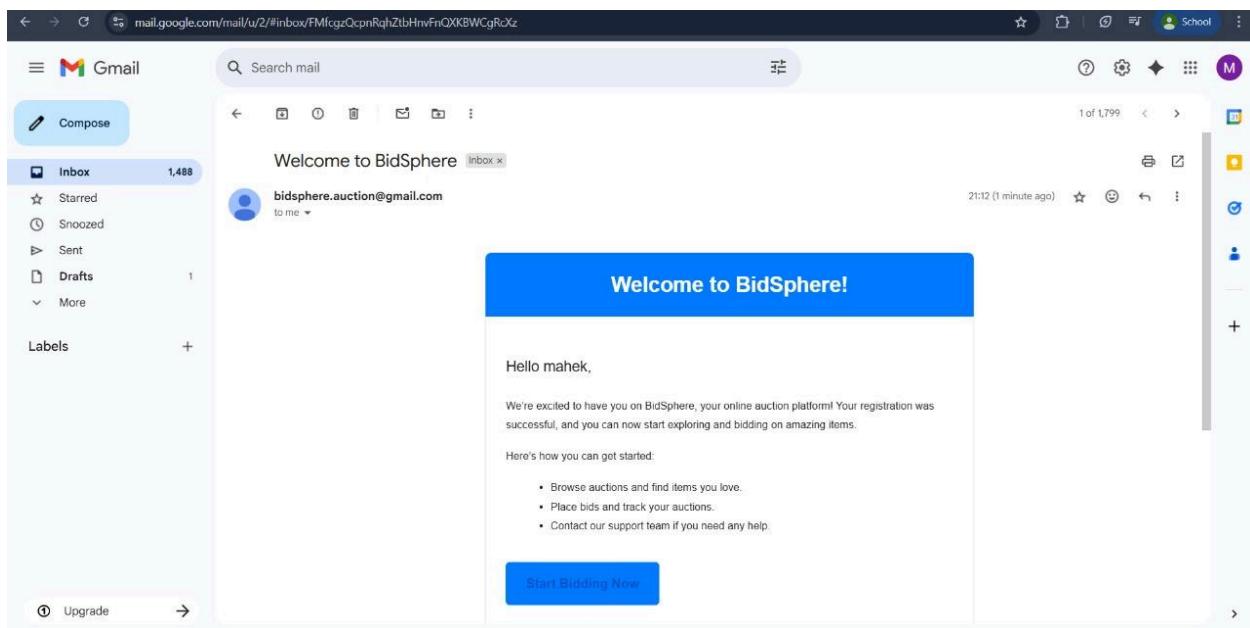
The screenshot shows a Postman collection named 'mahek's Workspace' with a 'BidSphere' collection. The 'POST VerifyEmail' request is selected. The URL is 'http://localhost:5000/bidsphere/user/verifyemail'. The 'Body' tab shows a raw JSON payload with 'email': 'mahekvgheza@gmail.com' and 'code': '938798'. The response status is '200 OK' with a response time of 65 ms and a size of 276 B. The response body is: '{ "message": "Email Verified Successfully" }'

Console:



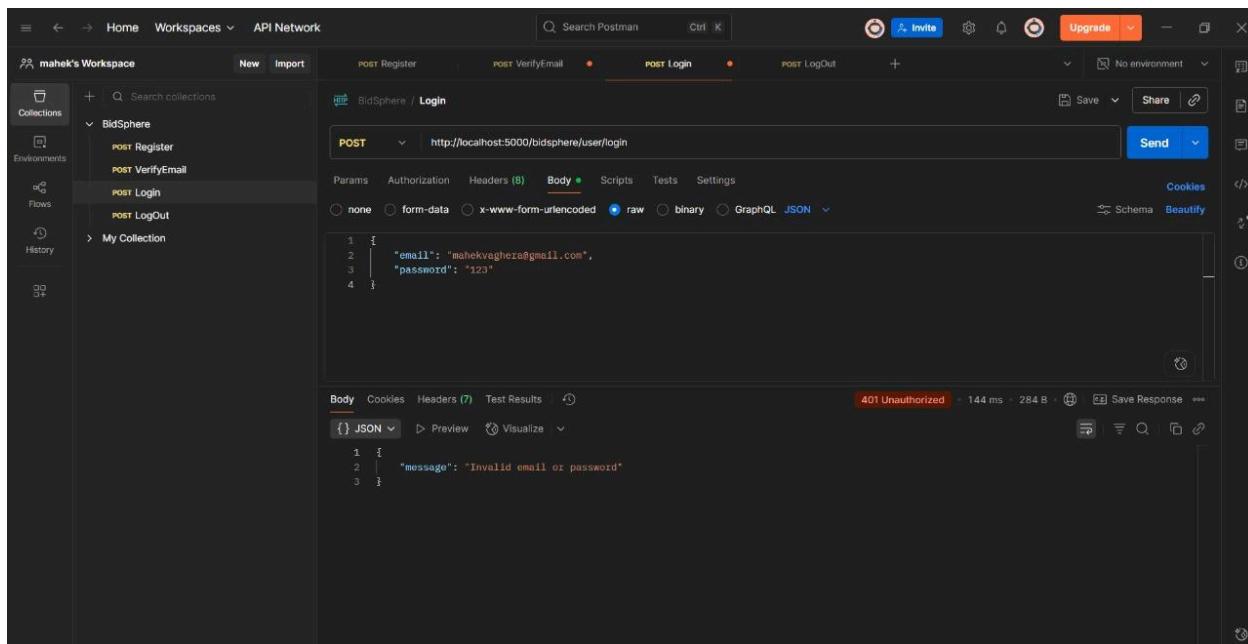
```
PS D:\mahek branch> npm run dev
Welcome mail send successfully {
  accepted: [ 'mahekvaghera@gmail.com' ],
  rejected: [],
  ehlo: [
    'SIZE 35882577',
    '8BITMIME',
    'AUTH LOGIN PLAIN XOAUTH2 PLAIN-CLIENTTOKEN OAUTHBEARER XOAUTH',
    'ENHANCEDSTATUSCODES',
    'PIPELINING',
    'CHUNKING',
    'SMTPUTF8'
  ],
  envelopeTime: 698,
  messageTime: 498,
  messageSize: 3413,
  response: '256 2.0.0 OK 1758387309 d9443c01a7336-2698033c2e1sm87290785ad.128 - gsmtp',
  envelope: {
    from: 'bidsphere.auction@gmail.com',
    to: [ 'mahekvaghera@gmail.com' ]
  },
  messageId: '<f6833af9-e018-9413-b4e0-b7a09ebbaa04@gmail.com>'
}
```

Welcome Mail:



User Login request:

Handle Invalid User



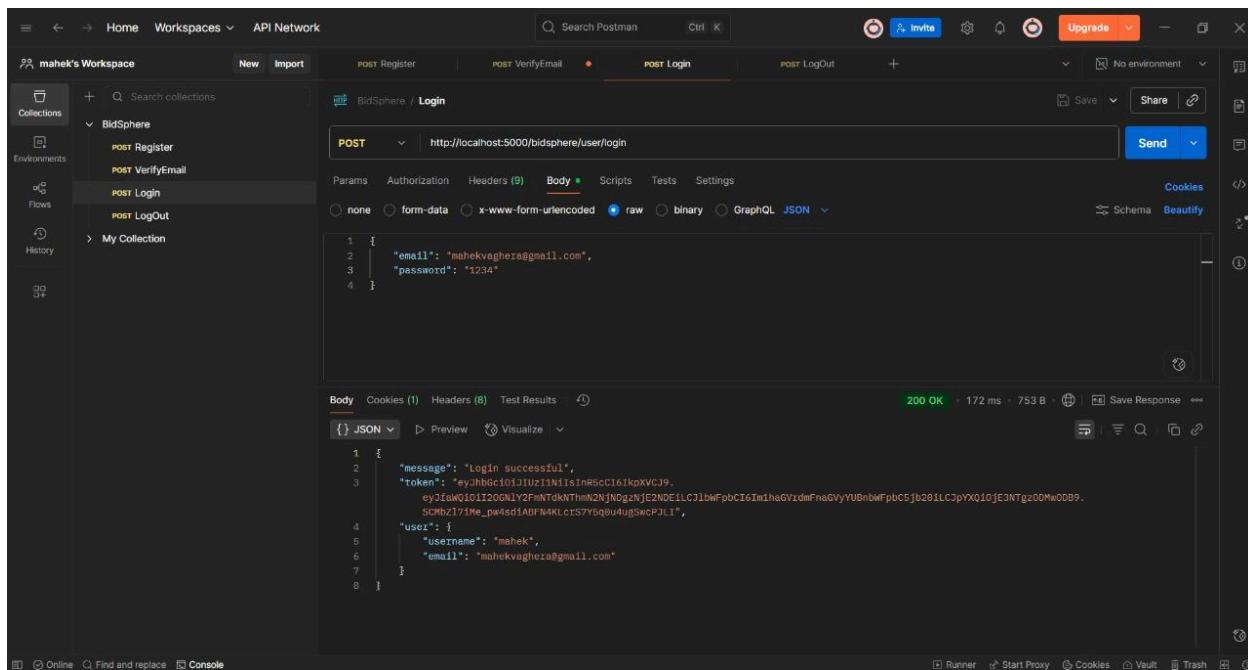
The screenshot shows the Postman interface with a dark theme. On the left, the sidebar displays 'mahek's Workspace' with a collection named 'BidSphere' containing five requests: 'POST Register', 'POST VerifyEmail', 'POST Login' (which is selected), and 'POST LogOut'. Below these are 'My Collection' and other workspace items like 'Environments', 'Flows', and 'History'. The main panel shows a POST request to 'http://localhost:5000/bidsphere/user/login'. The 'Body' tab is selected, showing raw JSON input:

```
1 {
2   "email": "mshiekvagherra@gmail.com",
3   "password": "123"
4 }
```

The response status is '401 Unauthorized' with a duration of '144 ms' and a size of '284 B'. The response body is:

```
1 {
2   "message": "Invalid email or password"
3 }
```

Successful login with correct credentials:



The screenshot shows the Postman interface with a dark theme, identical to the previous one but with a successful login attempt. The 'POST Login' request is selected in the sidebar. The 'Body' tab shows the same JSON input as before:

```
1 {
2   "email": "mshiekvagherra@gmail.com",
3   "password": "1234"
4 }
```

The response status is '200 OK' with a duration of '172 ms' and a size of '753 B'. The response body is a detailed JSON object:

```
1 {
2   "message": "Login successful",
3   "token": "eyJhbGciOiJIUzI1NiJ9.R5cCj6IkpxXVC39.eyJidW1O11Z2GNLY2FmNTkNTHmN2NjNDgznE2NDEiLC3lbWFpOCi6ImIheGVidmFrqVYyUBnbWFpuCSJb28iLCJpYXQ1OjE3NTgzODMwOD99.SCMZ17me_pwsd1aBF4K4Lcs7Y0q@v4ugswcPJLI",
4   "user": {
5     "username": "mahek",
6     "email": "mshiekvagherra@gmail.com"
7   }
8 }
```

At the bottom, there are navigation links for 'Online', 'Find and replace', 'Console', 'Runner', 'Start Proxy', 'Cookies', 'Vault', 'Trash', and a refresh icon.

Handle Already logged in user:

The screenshot shows the Postman application interface. On the left, there's a sidebar with 'mahek's Workspace' containing collections like 'BidSphere' which includes 'POST Register', 'POST VerifyEmail', 'POST Login', and 'POST LogOut'. The main area shows a 'POST Register' request to 'http://localhost:5000/bidsphere/user/register'. The body is set to 'raw' JSON with the following content:

```
1 {  
2   "username": "mahek",  
3   "email": "mahenkavaghera@gmail.com",  
4   "password": "1234"  
5 }
```

The response status is '400 Bad Request' with a message: 'User already exists'.

User Logout request:

The screenshot shows the Postman application interface. On the left, there's a sidebar with 'mahek's Workspace' containing collections like 'BidSphere' which includes 'POST Register', 'POST VerifyEmail', 'POST Login', and 'POST LogOut'. The main area shows a 'POST LogOut' request to 'http://localhost:5000/bidsphere/user/logout'. The body is set to 'raw' JSON with the following content:

```
1 {  
2   "message": "Logged out"  
3 }
```

The response status is '200 OK' with a message: 'Logged out'.

Admin Login request:

Authorized admin only can login

The screenshot shows the Postman application interface. On the left, there's a sidebar with 'mahek's Workspace' containing collections like 'BidSphere' (with 'POST Register', 'POST VerifyEmail', 'POST Login', 'POST Logout', and 'POST Admin login') and 'My Collection'. The main area shows a POST request to 'http://10.200.3.47:5000/bidsphere/admin/login'. The 'Body' tab is selected, showing raw JSON data:

```
1 {  
2   "email": "bidsphere.admin@gmail.com",  
3   "password": "AdminInSphere@027"  
4 }
```

Below the body, the response is shown as a 200 OK status with a response time of 33 ms and a size of 342 B. The response body is a JSON object:

```
1 {  
2   "message": "Admin Login successful",  
3   "admin": {  
4     "email": "bidsphere.admin@gmail.com",  
5     "adminIP": "10.200.3.47"  
6   }  
7 }
```

Console:

The screenshot shows the VS Code terminal tab. The output shows logs from a Node.js application using nodemon. It includes messages about restarting due to changes, injecting env variables from .env, and a server running on port 5000. It also shows an admin logging in from IP 10.200.3.47.

```
[nodemon] restarting due to changes...
[nodemon] starting 'node server.js'
[dotenv@17.2.2] injecting env (4) from .env -- tip: ⚡auto-backup env with Radar: https://dotenvx.com/radar
Server running on port 5000
[nodemon] restarting due to changes...
[dotenv@17.2.2] injecting env (4) from .env -- tip: ⚡ run anywhere with `dotenvx run -- yourcommand`
Server running on port 5000
request IP: 10.200.3.47
Admin logged in by IP: 10.200.3.47
```

Access denied to unauthorized:

The screenshot shows the Postman application interface. On the left, the sidebar displays 'mahak's Workspace' with collections like 'BidSphere' containing 'POST Admin login', 'POST Register', 'POST VerifyEmail', 'POST Login', and 'POST LogOut'. The main area shows a POST request to 'http://localhost:5000/bidsphere/admin/login'. The 'Body' tab is selected, showing raw JSON input:

```
1 {  
2   "email": "bidsphere.admin@gmail.com",  
3   "password": "Admininsphere@027"  
4 }
```

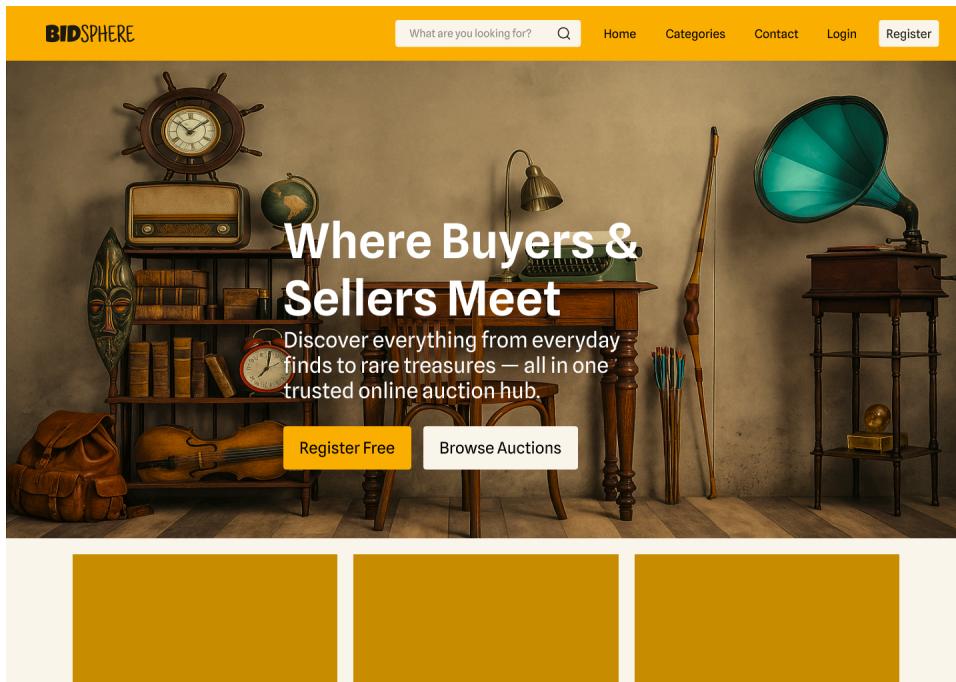
The response status is '403 Forbidden' with a message: 'Access denied'.

Since email and password are correct but IP address of the request does not match with the IP address of Admin's device.

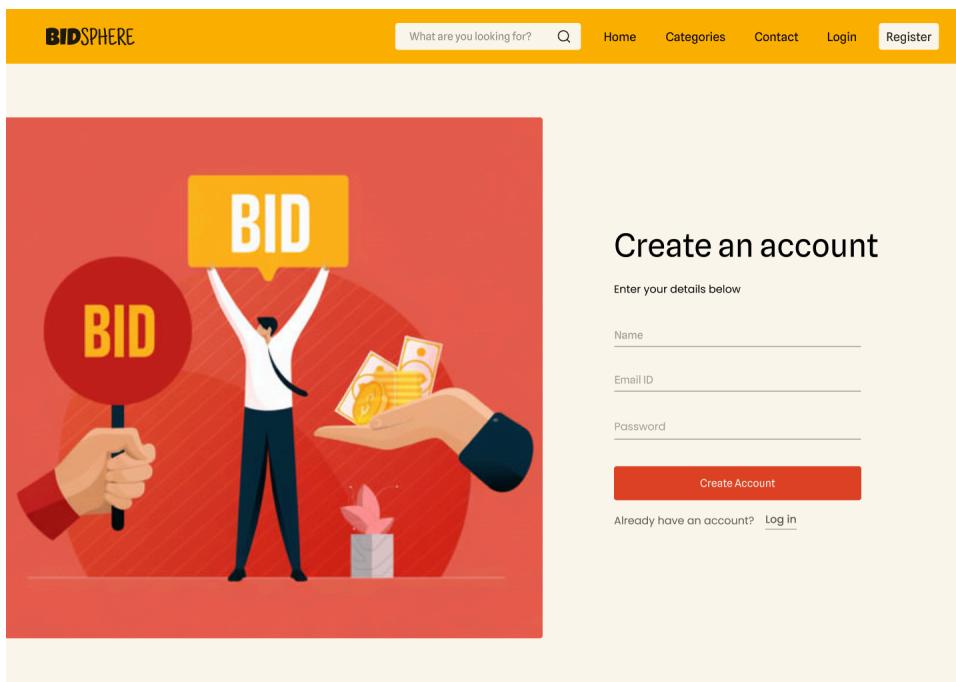
FIGMA PROTOTYPE

[\[Interact with the prototype here\]](#)

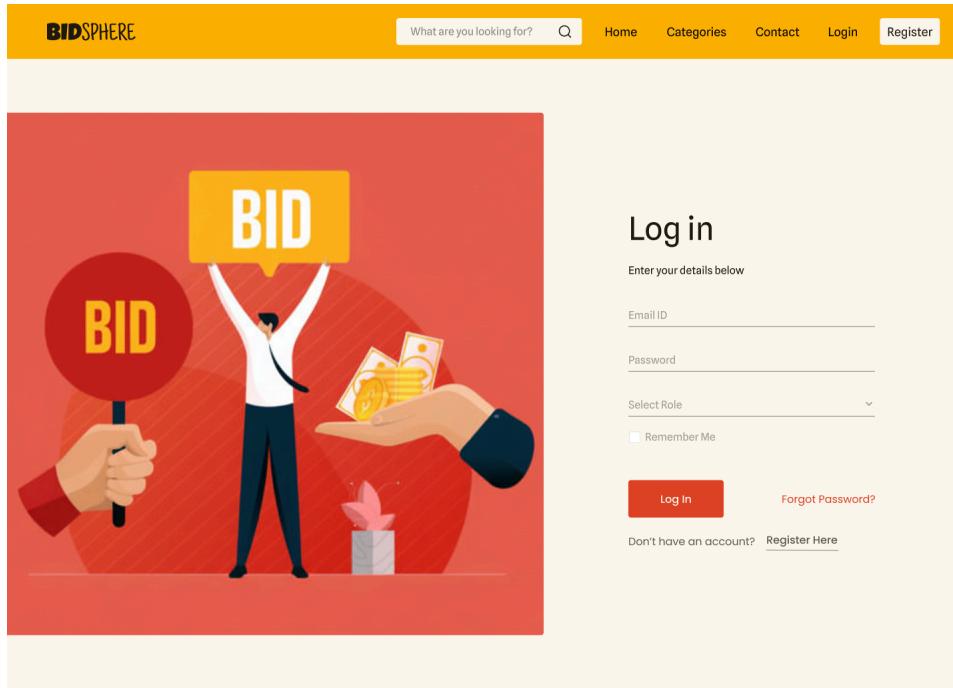
Homepage(landing page):



Registration Page:

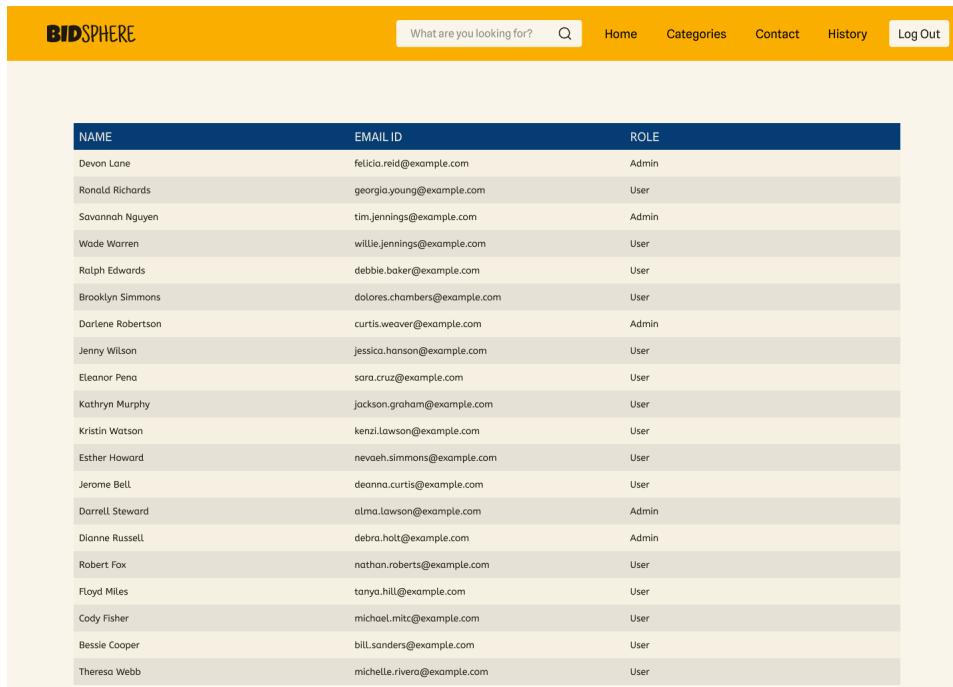


Login Page:



The screenshot shows the BidSphere login page. At the top, there's a yellow header bar with the BidSphere logo, a search bar, and navigation links for Home, Categories, Contact, Login, and Register. Below the header is a large red background image featuring a cartoon illustration of a person holding a speech bubble that says "BID". Another hand holds a large red circular sign with "BID" on it. A hand is also shown holding a stack of gold coins. To the right of the image, the word "Log in" is displayed in a large, bold font. Below it, a sub-header says "Enter your details below". There are input fields for "Email ID" and "Password", a dropdown menu for "Select Role", and a "Remember Me" checkbox. At the bottom right of the form area are "Log In" and "Forgot Password?" buttons. Below the form, a link says "Don't have an account? [Register Here](#)".

Admin Dashboard:



The screenshot shows the BidSphere Admin Dashboard. It has a similar yellow header bar with the BidSphere logo, search bar, and navigation links for Home, Categories, Contact, History, and Log Out. The main content area is a table titled "NAME" with columns for NAME, EMAIL ID, and ROLE. The table lists 25 user entries. The rows alternate in color between dark and light shades. The data in the table is as follows:

NAME	EMAIL ID	ROLE
Devon Lane	felicia.reid@example.com	Admin
Ronald Richards	georgia.young@example.com	User
Savannah Nguyen	tim.jennings@example.com	Admin
Wade Warren	willie.jennings@example.com	User
Ralph Edwards	debbie.baker@example.com	User
Brooklyn Simmons	dolores.chambers@example.com	User
Darlene Robertson	curtis.weaver@example.com	Admin
Jenny Wilson	jessica.hanson@example.com	User
Eleanor Pena	sara.cruz@example.com	User
Kathryn Murphy	jackson.graham@example.com	User
Kristin Watson	kenzi.lawson@example.com	User
Esther Howard	nevaeh.simmons@example.com	User
Jerome Bell	deonna.curts@example.com	User
Darrell Steward	alma.lawson@example.com	Admin
Dionne Russell	debra.holt@example.com	Admin
Robert Fox	nathan.roberts@example.com	User
Floyd Miles	tanya.hill@example.com	User
Cody Fisher	michael.mitc@example.com	User
Bessie Cooper	bill.sanders@example.com	User
Theresa Webb	michelle.rivera@example.com	User

7) Contributions:

We held over 5-6 brainstorming sessions to define the project's core feature flow. Each team member actively shared ideas and knowledge, helping shape the project direction. Their specific contributions to documentation, implementation, and other roles are summarized in the team directory below:

TR SID	TR Name	Documentation Role	Implementation Role	Other Role
202301026	VED MUNGRA	FRs and Non-FRs		
202301028	DARSHIT ADROJA	User Stories		Concept Map Design
202301029	SANKET GAJERA	User Stories		
202301033	SHIVAM NARESHKUMAR PATEL	Stakeholders and Elicita...		
202301034	JIYA PATEL	User Stories	Sprint01 Frontend	Concept Map Design
202301045	YUNUS KOTHARI	Stakeholders and Elicita...	Sprint01 Frontend	
202301052	KAKADIYA HARSH ARVINDBHAI	FRs and Non-FRs		
202301055	RAVAL PARVA DEVEN	EPICs and Conflicts		Team Leader
202301058	BHANDERI RAJ SURESHBHAI	EPICs and Conflicts		
202301066	VAGHERA MAHEK SHAILESH	User Stories	Sprint01 Backend	