

**A WEB APPLICATION  
FOR ONLINE AUCTION**

**By**

**Bhumit Navadiya (ID No. 19CEUOS044)**

**Gopal Malaviya (ID No. 19CEUES049)**

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**Internal Guide**

**Prof. Bhavika Gambhava**

**Professor**

**Dept. of Comp. Engg.**

**External Guide**

**Mr. Sunif Jagirdar**

**Senior Lead Manager**

**HH AeXchange**



**Faculty of Technology**

**Department of Computer Engineering**

**Dharmsinh Desai University**

**April 2023**

# **CERTIFICATE**

**This is to certify that the project work titled  
Online Auction Application  
(TheBidSpot)  
is the bonafide work of**

**Bhumit Navadiya (CE-090)(19CEUOS044)**

**Gopal Malaviya (CE-075)(19CEUES049)**

**carried out in the partial fulfilment of the degree of Bachelor of  
Technology in Computer Engineering at Dharmsinh Desai  
University in the academic session  
December 2022 to April 2023.**

Prof. Bhavika Gambhava  
Professor  
Dept. of Computer Engg.

Dr. C. K. Bhensdadia  
Head,  
Dept. of Computer Engg.



**Faculty of Technology**  
**Department of Computer Engineering**  
**Dharmsinh Desai University**  
**April 2023**

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Finally, as one of the team members, I would like to appreciate all my group members for their support and coordination, I hope we will achieve more in our future endeavours.

With Sincere Regards,  
Bhumit Navadiya  
Gopal Malaviya

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# Chapter 1

## Introduction

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### **1. Online Auction Application (TheBidSpot) Introduction:**

The online auction app is a robust on-demand platform that facilitates online bidding and auctions. It is marketplace platform like eBay and Catawiki that brings together buyers and sellers and offers great deals for them. You can sell or buy almost every product online using an auction app.

Unlike traditional auction places, an online auction app lists all the products that a seller wants to sell. Then the interested buyers bid on them. And the person with the highest bidding gets the product. The auction are held for a specific time so that the seller can get the best price in a short time.

The bidders compete against each other, with each subsequent bid being higher than the previous bid. Once an item is placed for sale, the auctioneer will start at a relatively low price to attract a large number of bidders.

Online auctions are popular with sellers because the huge number of potential bidders makes it easier for them to get a good price for virtually any item they have to sell. Buyers like having a wide range of products to choose from and being able to find just about anything they're searching for to buy.

# Chapter 2

## About The System

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### 2. About System

#### 2.1 Purpose

The purpose of Online Auction System is, . It is a popular method for buying and selling products and services. Online Auction System s helps to customer to sell and buy product in best price. It is developed with the objective of making the system reliable, easier and fast. This application is used to sell the anything on the website from house.

It developed with the objective of making the system reliable, easier and fast. The application is made as simple as surfing a website. There by non-technical persons can also interact with the processing on the application easily.

#### 2.2 Objective

Online Auction System s helps to customer to sell and buy product in best price. It is developed with the objective of making the system reliable, easier and fast. This application is used to sell the anything on the website from house. This application is used to sell the anything on the website from house.

Some of the key objectives are:

- This portal gives selling/purchasing of product online.
- User Friendly Interface
- Security and Privacy
- Compatibility
- Flexibility

## 2.3 Scope

- This auction website works online. The bidder and seller can participate in auction from anywhere at any time through online auction.
- Those who wish to take part in bidding or sell products at the site have to register at the site as customer. Only authenticated customers can take part in selling or in bidding.
- This will store bidders record and bidding record.
- Auction winners get an Email notification.

## 2.4 Tools and Technologies

### Technologies:

- React js
- Node + npm (Package Manager)
- JavaScript fundamentals + ES6
- JSX (JavaScript XML)
- HTML + CSS + Bootstraps

### Tools:

- Git + CLI (Command Line Interface)
- Firebase
- Visual studio code

### In Details:

#### React js

- React js is JavaScript library for building user interfaces.
- React makes it painless to create interactive UIs.
- Design simple views for each state in your application, and React will efficiently update and render just the right components when your data changes.



## **Node and npm**

- NPM is a package manager for Node.js packages, or modules if you like.
- The NPM program is installed on your computer when you install Node.js
- A package in Node.js contains all the files you need for a module.
- Modules are JavaScript libraries you can include in your project.

## **JavaScript fundamentals + ES6**

- JavaScript is one of the most confusing languages for developers and it ignores small errors that can create a problem in your project if you won't notice them earlier. So make sure that you first clear your basic concept about JavaScript and then you move to the advanced version of ECMAScript5 and ECMAScript6.
- Higher-order function, callback function, arrow function, state (how state and setState() function works) scope, class & constructors, extends and inheritance, map, reduce, filter, promises, modules, closures, const, let (difference between var, let and const) and other features of ES5 and ES6.

## **JSX (JavaScript XML)**

- In React you will work with JSX that looks like HTML and you can consider it like HTML-flavored JavaScript. It is the easiest way to add HTML code inside JavaScript or you can say it is the extension of the Javascript language syntax.
- 

## **HTML + CSS + Bootstraps**

- The Bootstrap framework is built on Hypertext Markup Language (HTML), cascading style sheets (CSS) and JavaScript. Web developers using Bootstrap can build websites much faster without spending time worrying about basic commands and functions.

## **Git + CLI (Command Line Interface)**

- Git (version control) is another must-have skill a developer should have to store their project on GitHub. It helps developers to work and collaborate with each other and it allows them to track and host

different versions of project files. You should have good knowledge that how Git and these code hosting platforms work. Developers use the command of Git to track the version of your files, so learn how to use all the commands such as push, pull, add, commit, etc. Also learn about merging, branching, handling merging conflicts, etc.

- Everything in React you will be doing with the help of CLI (Command-line interface). Installing packages, using NPM, creating a react app, running react application, and a lot of things so you really need to make a habit of using CLI. Below is an example of running a react application using CLI.

## **Firebase**

- Firebase is a Backend-as-a-Service (BaaS) app development platform that provides hosted backend services such as a realtime database, cloud storage, authentication, crash reporting, machine learning, remote configuration, and hosting for your static files.

## Chapter 3

### Analysis

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#### 3. Analysis

The UML has been developed to offer a standardised notation to define Object Oriented Models. However, to effectively apply the UML notation, it must be employed with an Object-oriented Analysis and Design method. Object-oriented analysis and design (OOAD) refers to a group of methodologies to produce business component based software. The methodology summaries the life cycle of system development identifying the deliverables and tasks in an object-oriented project. Using a combination of UML notation and process, the life cycle of system development can be reduced, the system can be easily maintained, and the modules reusability can be improved.

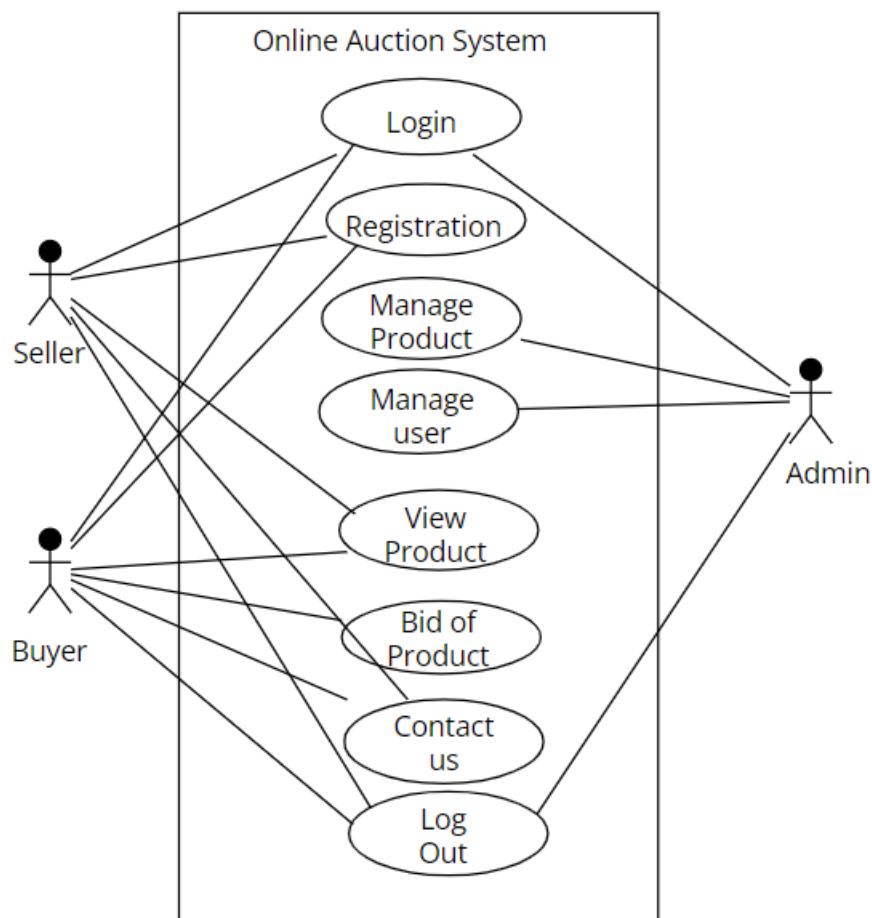
Conventionally, requirements analysis comprised of finding functions and relevant data that will be supported by the software system. The entity-relationship diagrams will describe the data that the system will handle, while data flows will describe the functions.

Use case diagram, class diagram and sequence diagram were selected for the user's requirements analysis; Class Diagrams were selected to represent the classes' static structure.

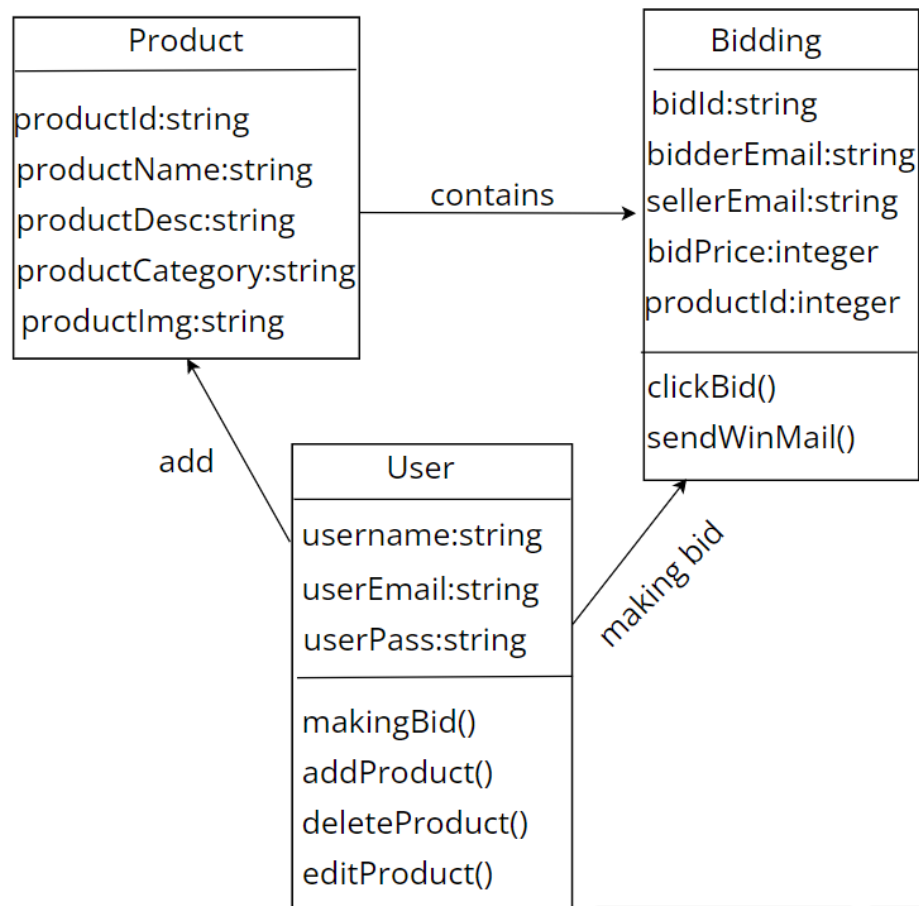
Therefore, this work designs and implements the online web based auction system (OAS) using UML. Where in the proposed OAS, the UML offering several diagrams to enable the new functions to be updated and added easily such as: use case, sequence, class diagrams, and user interfaces. The proposed OAS will help the bidders to bid in fast and increase their chances to make a successful bid by suggesting a bid price, and help the seller to achieve maximum profit.

This paper presents an analysis and design of our auction system which we call TheBidSpot. We employ UML to show the architectural model, subsystems, use cases, domain modelling, activity diagrams, database schema, website navigation, user interface, and system sequence diagrams.

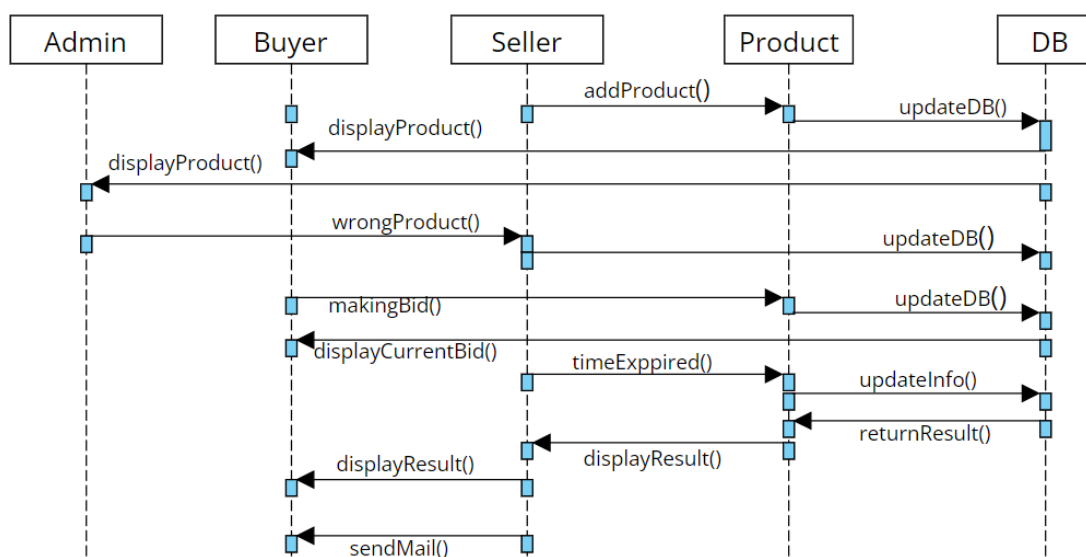
### 3.1 Use Case Diagram



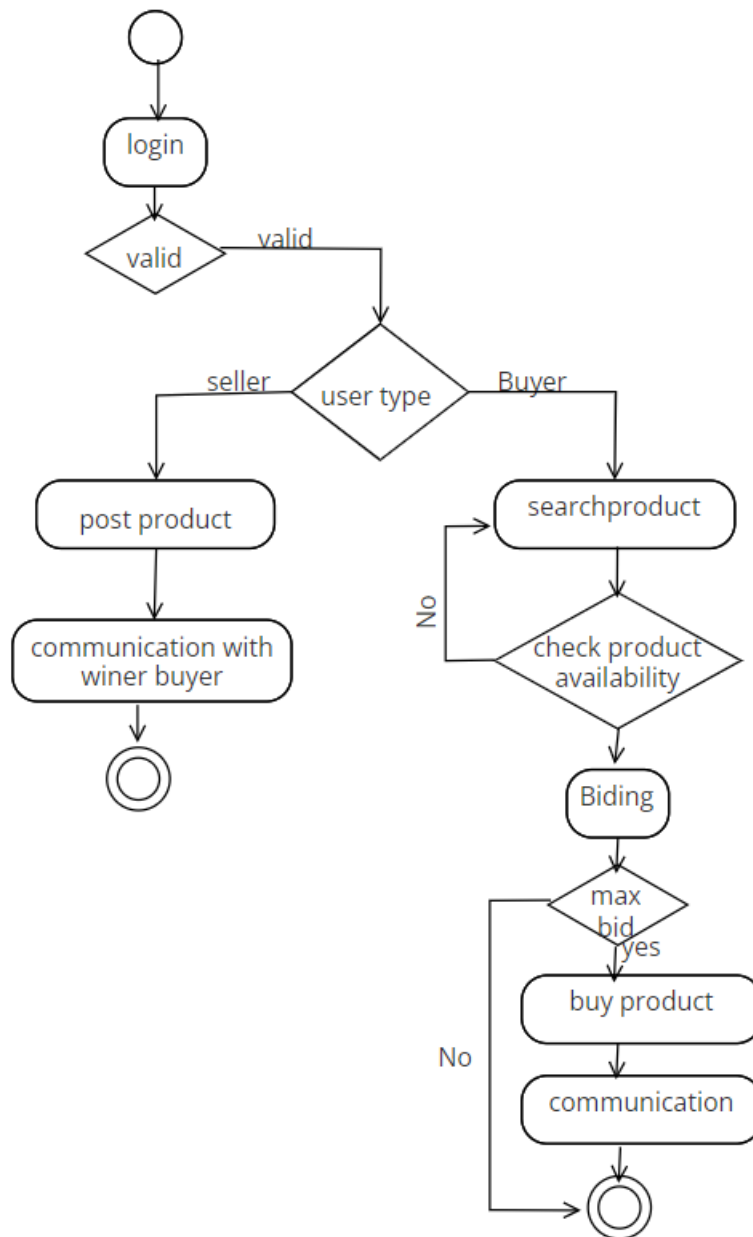
### 3.2 Class Diagram



### 3.3 Sequence Diagram:



### 3.4 Activity Diagram:



### **3.5 Functional Requirements:**

Functional requirements for the online auction management system have been developed to make sure that the functionalities and functional aspects of the system are met.

#### **R.1 Manage User**

##### **R.1.1 Sign up**

Description: User creates account by entering details

Input: Username, email address, password and re-password

Output: automatically login is done and redirect to home page

Processing: If email address is unique then user is transferred to home page

##### **R.1.2 Login**

Description: User login to the system by entering valid username and password

Input: email address and password

Output: user redirect to home page

Processing: email address and password validation

#### **R.2 Manage Product**

##### **R.2.1 Add Product**

Description: User should be able to add product to sell

Input: Product details given in form e.g. Name, Description, Price etc.

Output: Product is successfully added

Processing: If all the details asked is filled up correctly then property will be saved successfully.

##### **R.2.2 Edit Product**

Description: User should be able to edit product that is added by him/her to sell

Input: Product details given in form e.g. Name, Description, Price etc.

Output: Product is successfully edited

Processing: If all the details asked is filled up correctly then property will be edited successfully.

### **R.2.3 Delete Product**

Description: User should be able to delete product that is added by him/her

Input: Confirmation message

Output: Product is successfully deleted

Processing: When user confirm to delete property will be removed from the list

## **R.3 Search Product**

### **R.3.1 Search Product**

Description: User should be able to search product based on entered value

Input: enter value for searching product

Output: List of Products

Processing: Only those products will be fetched from the database those name is matched with entered value.

## **R.4 Sort Product**

### **R.4.1 Sort Product**

Description: User should be able to sort product based on various parameters like price, category etc.

Input: select appropriate filter for sort

Output: List of Products arranged accordingly

Processing: products list will be fetched from the database and sort according given parameter.



# Chapter 4

## System Design

### 4. System Design

#### 4.1 Database:

##### 4.1.1 Users Database:

Fields: Email, Name and UID (User ID)

FIELDS	TYPE	NULL	PRIMARY
Email	VARCHAR	NO	NO
Name	VARCHAR	NO	NO
UID	VARCHAR	NO	YES

onlineauctionapp-cce34	users	HCCxZ4kRy4NgH0xreU6Lm7D1IJM2
+ Start collection	+ Add document	+ Start collection
bids	HCCxZ4kRy4NgH0xreU6Lm7D1IJM2 >	+ Add field
items	SX1EcdWqGeQ9yT661s0jwCx4DQo1	email: "bhumit2@gmail.com"
users >	T2CFkQFW9i0g4Qrv7fnwZqobbuh1	isWarned: false
	auht55kKkoVVeYKE0n9owCNnWAY1	name: "Bhumit2"
	fnScssDLAid5quWarXCeRRGlYt2	timestamp: 20 March 2023 at 09:33:17 UTC+5:30

##### 4.1.2 Bids Database:

Fields: Email, Name and UID (User ID)

FIELDS	TYPE	NULL	PRIMARY
Email	VARCHAR	NO	NO
ItemID	VARCHAR	NO	NO
Price	NUMBER	NO	NO

onlineauctionapp-cce34	bids	530hQEHDnLbrinGUUWvK
+ Start collection	+ Add document	+ Start collection
bids >	530hQEHDnLbrinGUUWvK >	+ Add field
items	RWD4ku6Vot6KXuvl2Ij9	email: "gopal2@gmail.com"
users	aJ1aAGRowKoksA3GkkW9	itemId: "JcV89qcGWH6BXrwp5jL"
	rJtzkxaGsU0DpEnLBICR	price: 20100

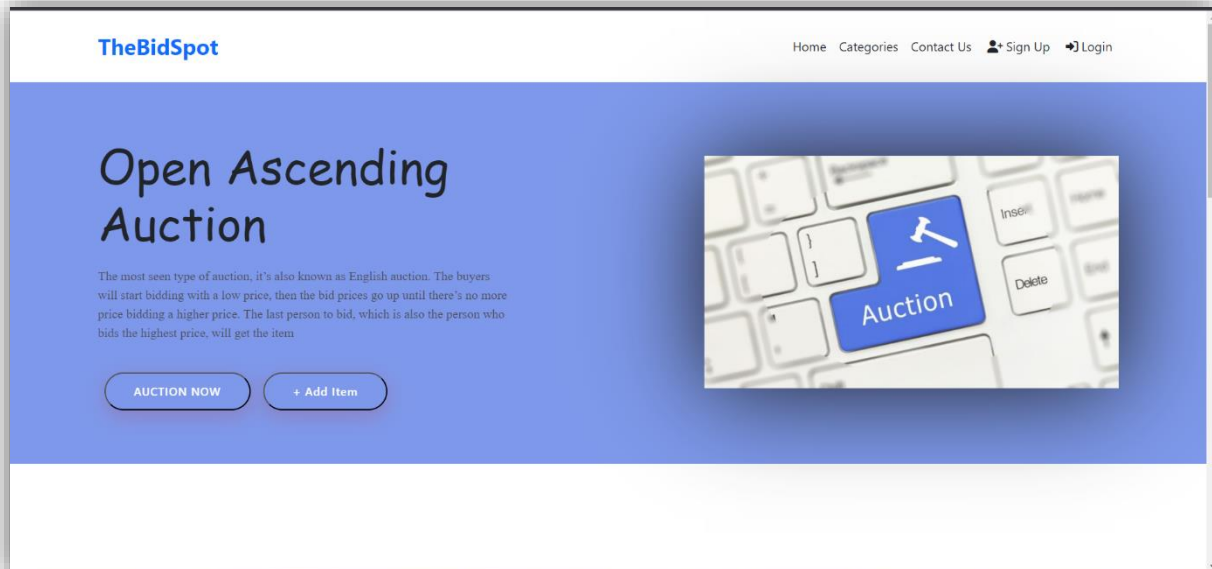
### 4.1.3 Items Database:

FIELDS	TYPE	NULL	PRIMARY
ItemDuration	NUMBER	NO	NO
CurrentPrice	NUMBER	NO	NO
email	VARCHAR	NO	NO
imgUrls	VARCHAR	NO	NO
itemCategory	VARCHAR	NO	NO
itemDec	VARCHAR	NO	NO
itemName	VARCHAR	NO	NO
startPrice	NUMBER	NO	NO
useRef	VARCHAR	NO	NO
timestamp	DATE	NO	NO

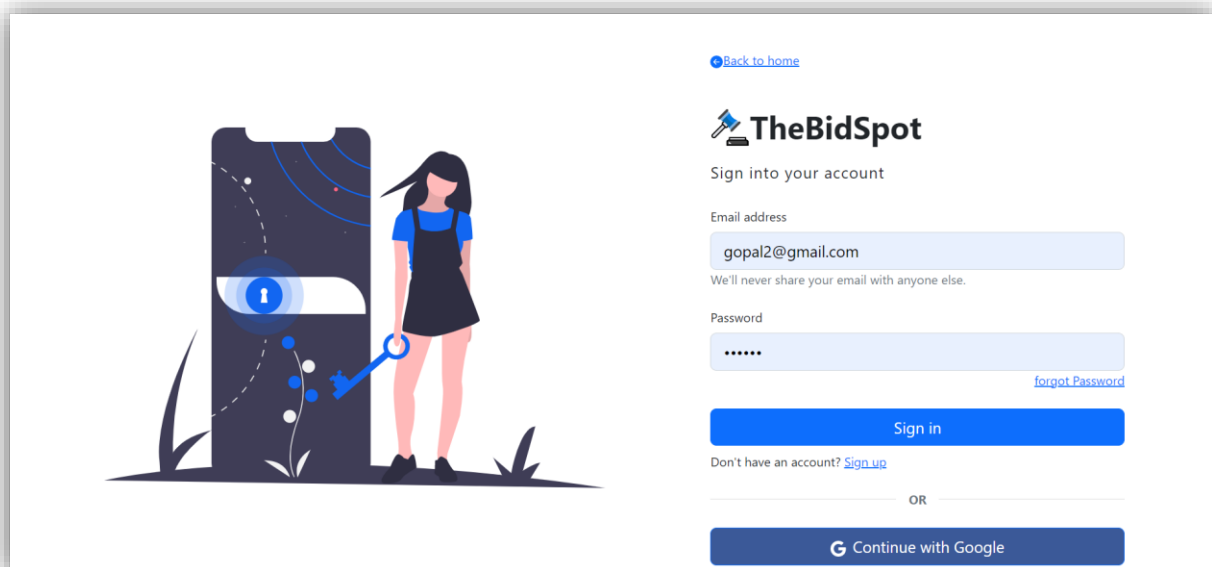
onlineauctionapp-cce34	items	1yYzMX0iDyWgUj03VE8l
+ Start collection	+ Add document	+ Start collection
bids	1yYzMX0iDyWgUj03VE8l >	+ Add field
items >	2jWjLI8RH1HBX5LScing	ItemDuration: "250"
users	HfJgnFTXwDUB36aYK8sg	currentPrice: "4000000"
	JcV89qcGWH6BXrwp5jL	email: "bhumit2@gmail.com"
	Ub8obJ5hK1p4i2qXS1x9	imgUrls
	erC1y4QKGSbz4ZSNC67	<ul style="list-style-type: none"> <li>"https://firebasestorage.googleapis.com/v0/b/onlineauctionapp-cce34.appspot.com/o/images%2FHCCxZ4kRy4NgH0xreU6Lm7D1IJMwatch1.jpg-18b6dd48-6c4b-45a0-bfab-4b6387767181?alt=media&amp;token=e51c2432-6756-4ba1-bbfa-10baa9c67ff4"</li> </ul>
		itemCategory: "Watches"
		itemDec: "Small" Daytona, reference 6240 Montre bracelet chronographe en acier   Stainless steel chronograph wristwatch with bracelet Vers 1966   Circa 1966"
		itemName: "Rolex"
		startPrice: "4000000"

## 4.2 Front-End Design

### 1. Home Page before login



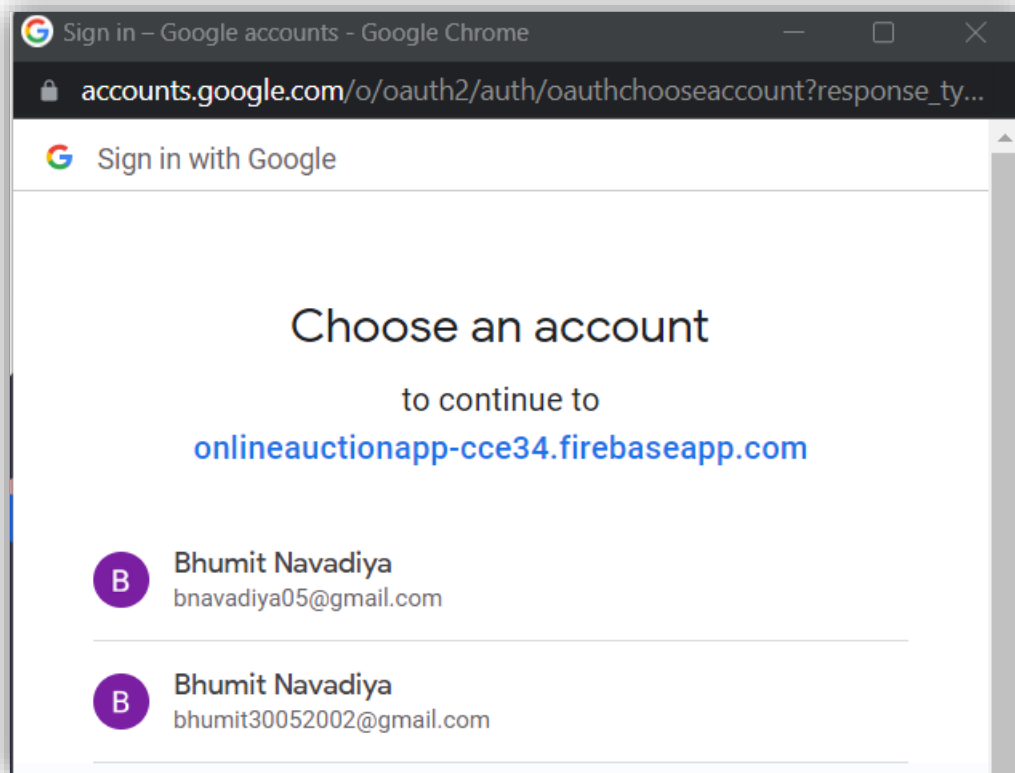
### 2. Login/Sign in page



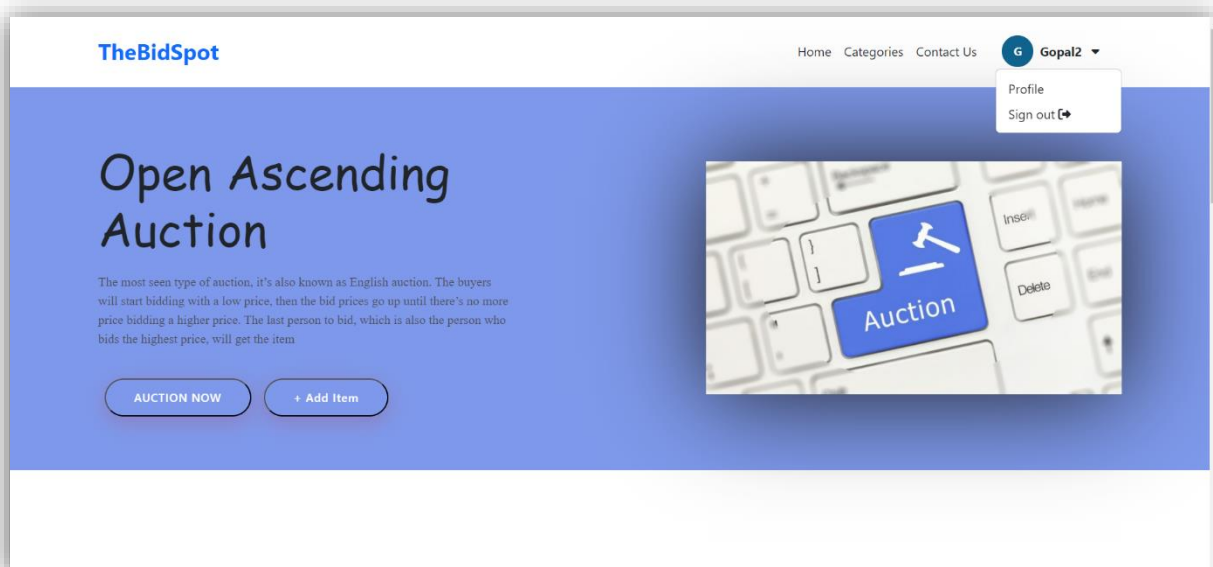
➔ There two options for sign in:

- 1) Manually enter email address and password
- 2) Using google authentication

### 3. When click continue with google

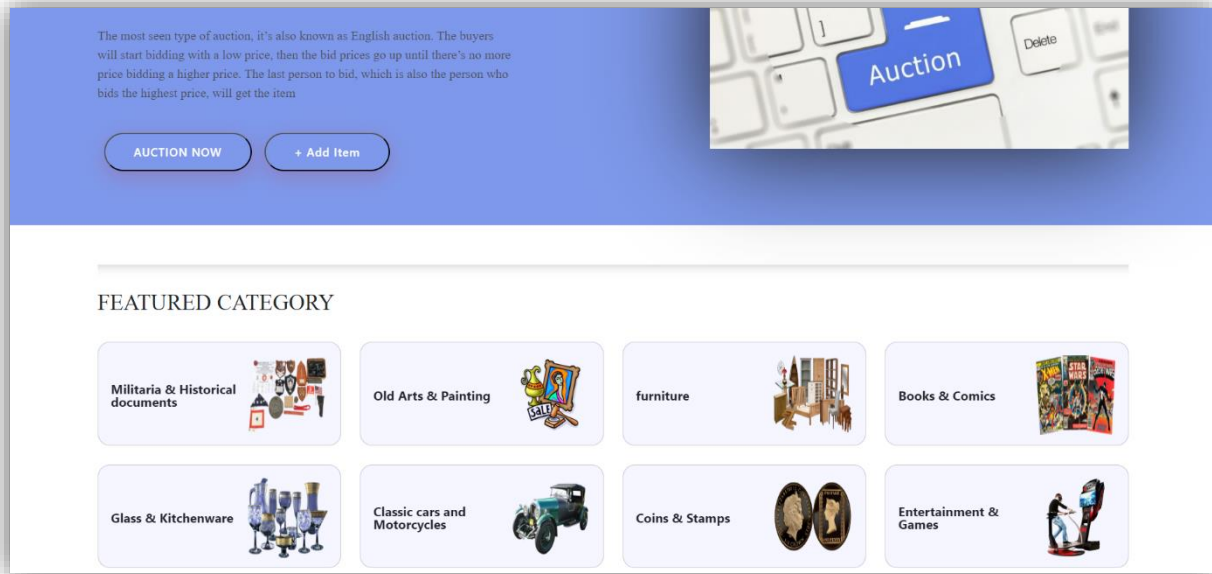


### 4. Home page after sign in

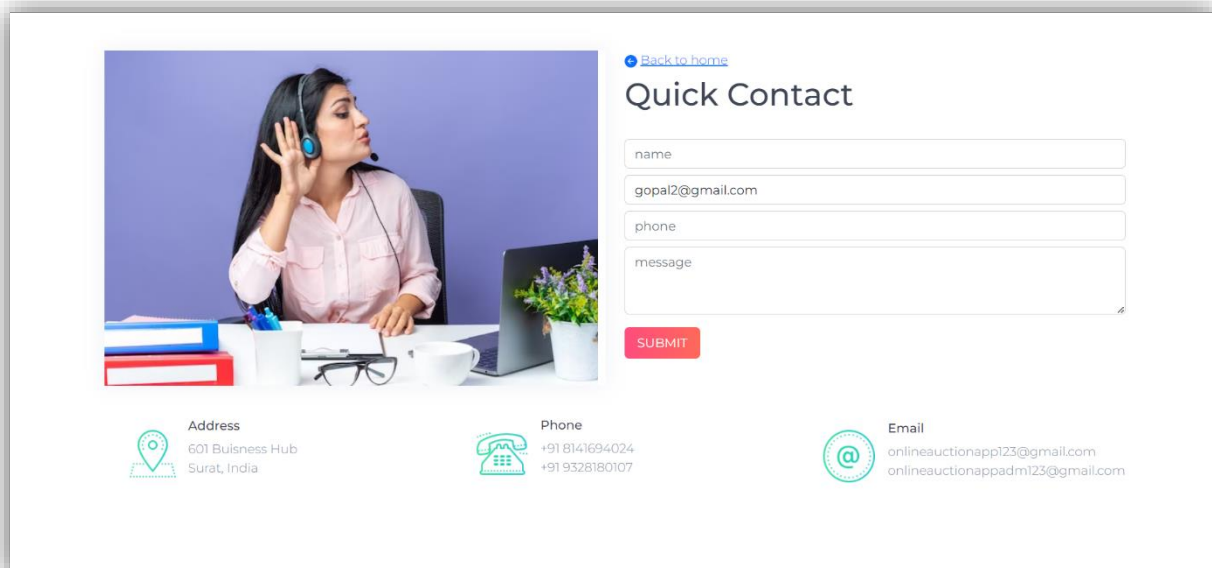


➔ User can sign out using this sign out option.

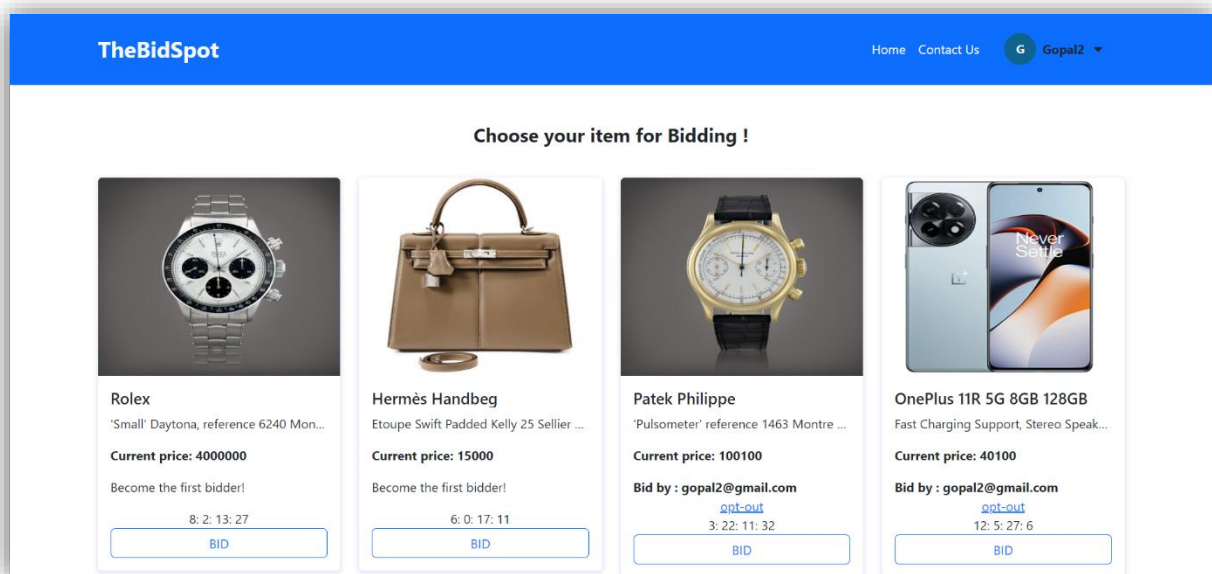
## ➔ Featured category section in home page.



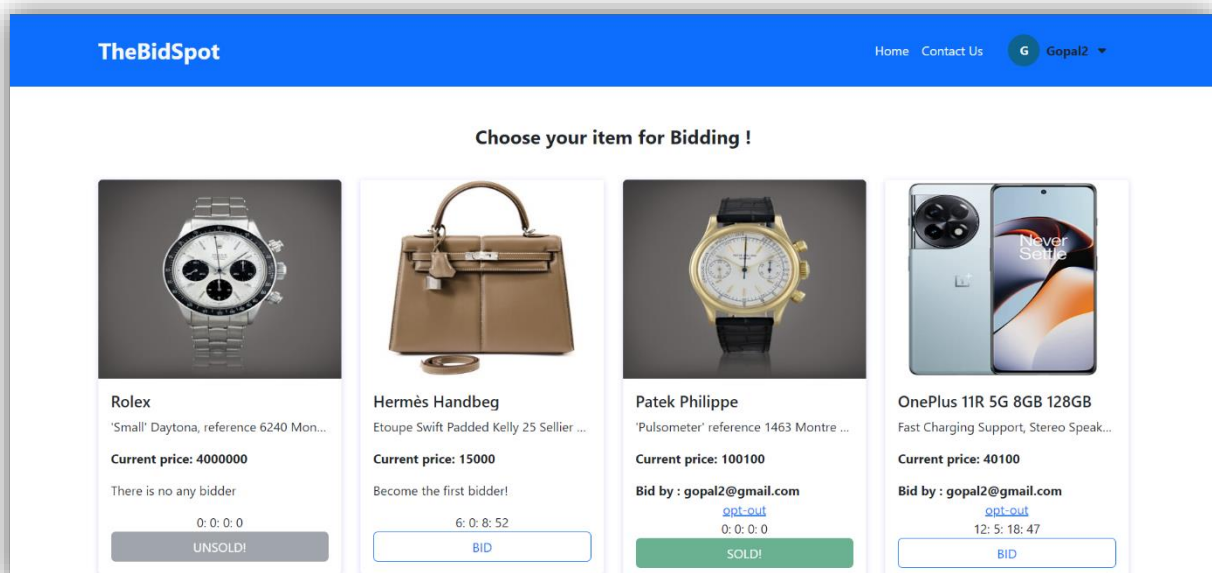
## 5. ContactUs page



## 6. AuctionNow page

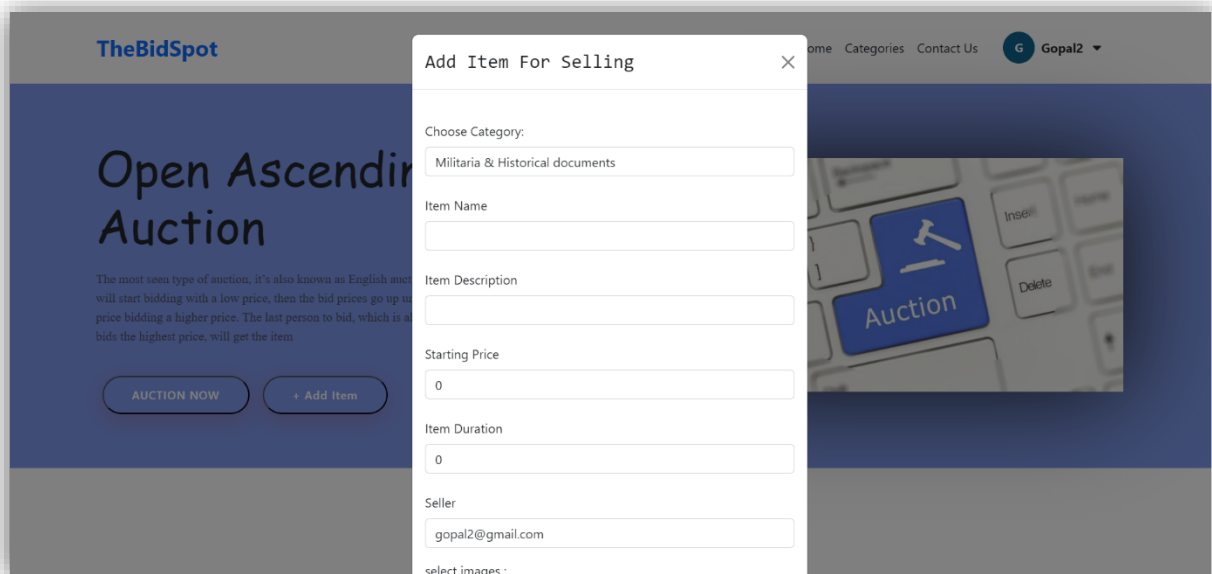


- ➔ User can be able to make bidding by click on *bid* button.
- ➔ Timer is displayed, for that time bidding is open for that particular item.
- ➔ Current bidder name is displayed.
- ➔ User can opt-out his/her bidding by clicking *out-out*.



- ➔ If Time expired and there is no any bid then that item is *UNSOLD!*
- ➔ If time expired and there is at least one bid then item is *SOLD*

## 7. Add Item

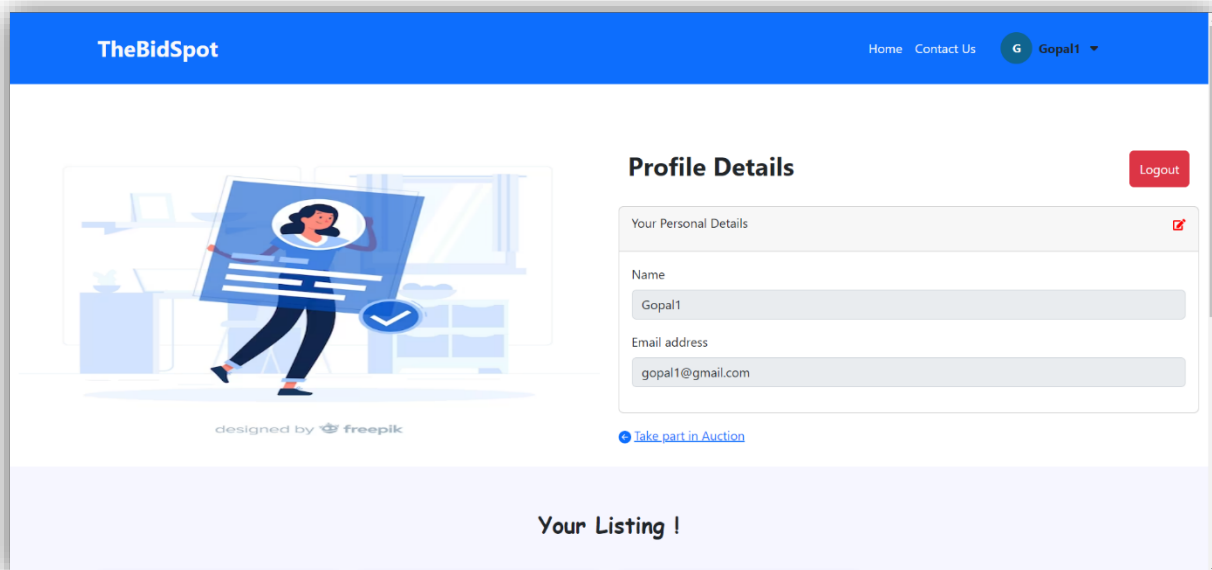


The screenshot shows a web application interface for 'TheBidSpot'. A modal window titled 'Add Item For Selling' is open over a background page that says 'Open Ascending Auction'. The modal contains the following fields and options:

- Choose Category:** A dropdown menu with 'Militaria & Historical documents' selected.
- Item Name:** An empty text input field.
- Item Description:** An empty text input field.
- Starting Price:** A text input field with '0' entered.
- Item Duration:** A text input field with '0' entered.
- Seller:** A text input field with 'gopal2@gmail.com' entered.
- select images :** A label at the bottom of the modal.

The background page also features a navigation bar with 'Home', 'Categories', and 'Contact Us', and a user profile 'Gopal2'.

## 8. Profile Page

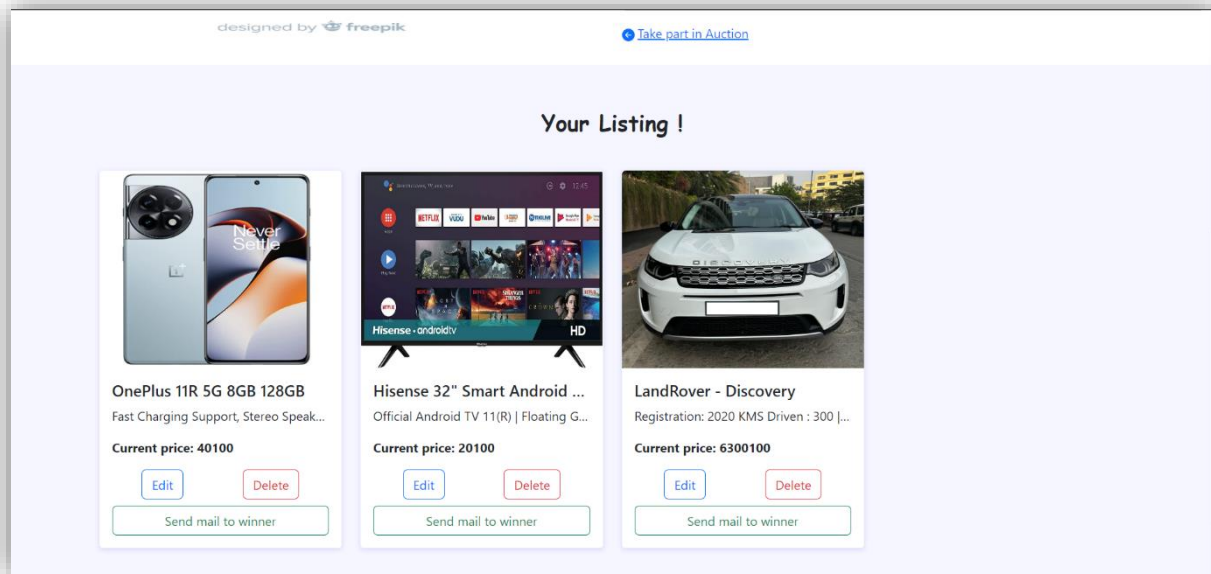


The screenshot shows a user profile page on 'TheBidSpot'. The page has a blue header with the site name and navigation links. The main content area is divided into two sections:

- Profile Details:** A section with a 'Logout' button and a 'Take part in Auction' link. It contains a form for 'Your Personal Details' with the following information:
  - Name:** Gopal1
  - Email address:** gopal1@gmail.com
- Your Listing !** A section below the profile details, currently empty.

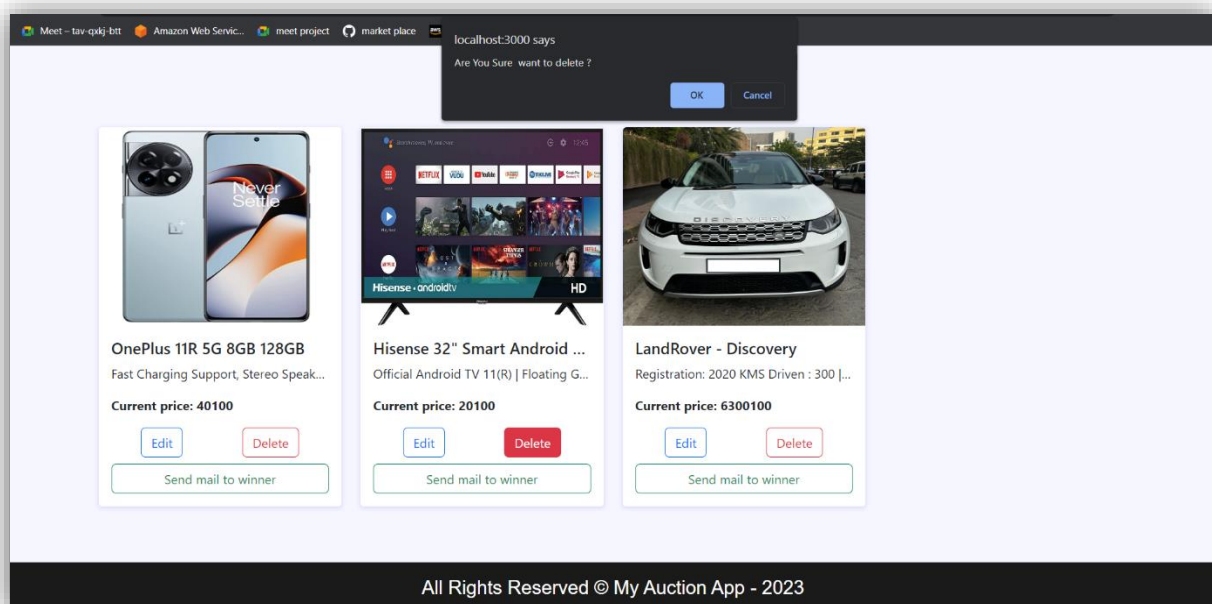
On the left side of the profile details, there is an illustration of a person holding a large screen displaying a profile picture and a checkmark, with the text 'designed by freepik' below it.

- ➔ User can be able to edit his/her profile.
- ➔ User can be able to log out from the system by clicking *logout* button.



- ➔ In profile page, user can be able to show his/her added item to sell.
- ➔ Seller can send the mail to winner after ending the bidding by clicking *send mail to winner*.
- ➔ Seller can be able to delete or edit items that added by him/her by clicking *Delete* or *Edit* button.

## 9. Asking about confirmation for deleting item





## 10. for update item

Update Your Item

×

Choose Category:  
Militaria & Historical documents

Item Name  
Hisense 32" Smart Android 11 LED TV 32A4G

Item Description  
Official Android TV 11(R) | Floating Glass Display | Remote With

Starting Price  
20000

Item Duration  
300

Seller  
gopal1@gmail.com

select images :

# Chapter 5

## Implementation

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### 5. Implementation

This Online Auction System is a web-based application, which is to provide a user-friendly, reliable, and secure platform that allows seller and buyer to connect with each other in real-time.

Several pages are created as per need.

- Navbar
- Footer
- Home page
- Auction Now
- Add Item
- Profile

#### 5.1 Navbar

Navbar content is change before the login and after the login.

Before login: Home, Categories, Contact us, Sign up, And Login

After login: Home, Categories, Contact us, Username (Profile, sign out)

#### 5.2 Footer

Footer is loaded in all the pages.

Footer contains just one line,

*All Rights Reserved © My Auction App - 2023*

### 5.3 Home page

There are three section in this page:

- 1) *Hero section*: That shown some information about the auction and which type of auction that follow in this online auction system. And two button are there *Auction Now* and *Add Item*.
- 2) *Featured category*: In this section, shown all the category for products which are given in online application to sell the products.
- 3) *Contact us*: Using this section user can communicate with the online auction application's owner. And also user can send his/her new idea to upgrade the online auction application for making the best website for bidding.

### 5.4 Auction Now Page:

User, who want to buy something, can visit the auction now page.

In this page shown listing of all items which are added by seller to sell.

User can make his/her maximum bid for purchase that particular item.

User can be able to make bidding by click on bid button.

Timer is displayed, for that time bidding is open for that particular item.

Current bidder name is displayed.

User can opt-out his/her bidding by clicking out-out.

If Time expired and there is no any bid then that item is **UNSOLD!**

Id time expired and there is at least one bid then item is **SOLD**

## **5.5 Add Item**

User can able to add item in website to sell.

One form is open, user should have to add the all details which are asking in that form like item name, item price, duration, images etc.

## **5.6 Profile**

There are two section in this page:

- 1) User data: This section shown the user details like, username and email address. User can update his/her username, email address cannot able to update.
- 2) Added item list: This section shown user added item list which are added by him/his to sell. User can able to delete or edit the item.

## **5.7 Database**

For storing all the data, we have firebase as back-end. And this Database will store all the info regarding the user information and as well as all the Products data which are added by that particular user to sell.

## Chapter 6

# Testing

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### 6. Testing

For Online Auction Application (TheBidSpot) there are number of test cases that should be considered to ensure that the app is working correctly.

*Connectivity and reliability:* Test the connectivity of the app under different network conditions like low signal strength, packet loss, and network congestion. Ensure that the app can handle network fluctuations and reconnection without any interruptions.

*User Interface:* Test the user interface to ensure that it is easy to use and visually appealing. Ensure that the buttons and controls work as expected and that the interface is responsive.

*Device compatibility:* Test the app on different devices, platforms, and browsers to ensure that it works correctly across a range of devices.

*Security:* Test the app's security measures to ensure that it provides end to-end encryption and that user data is protected.

*Performance:* Test the app's performance under heavy loads to ensure that it can handle a large number of users and video streams simultaneously without slowing down.

*User experience:* Test the app from a user's perspective to ensure that it provides a smooth and enjoyable bidding experience.

*Make bidding:* Test the bidding functionality to ensure that current price is update or not in real time during the make bidding.

*Add product:* Test the add product functionality to ensure that newly added product is shown or not in real time to bidder.

**Tests:**

<b>TEST CONDITION</b>	<b>INPUT</b>	<b>OUTPUT</b>	<b>STATUS</b>
Make Bidding	Make bidding to ensure current price is updated or not	Current price is updated in real time.	PASS
Adding Item	Adding item to sell and ensure that item listing is updated or not in real time.	Listing is updated in real time with newly added item.	PASS
Send Mail to Winner	After ending bidding, seller send mail to winner.	Winner successfully getting mail from seller.	PASS
Send warning to User	Admin send warning mail to user for added wrong item	User successfully getting warning mail from admin	PASS

# Conclusion and Future Extensions

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## 7. Conclusion and Future Extensions

### 7.1 Conclusion

This paper discussed our experiences in designing an on-line auction system. Much of the existing auction software literature is dated and is of limited usefulness to researchers. Furthermore, most existing proposals do not adhere to sound UML standards. We provided a simple and elegant design for an online auction system based on UML. We presented an analysis and design for the auction system illustrating key system components using UML diagrams.

TheBidSpot is being used to facilitate our research into real-time shill bidding detection. TheBidSpot provides us the ability to conduct various types of testing using a combination of human users, simulated auctions and/or synthetic data

### 7.2 Future Extension

Future work involves further development of the auction system so that it has more functionality.

Currently, after completing bidding, seller send mail about item to winner. But in future we will implement the real time payment system, so buyer can make easily payment to seller.

And in the auction now page, currently, there is no any sorting or searching functionality, we will implement that functionality shortly in upcoming time.

# Chapter 8

## Bibliography

---

### **Bibliography**

For completing this project all the references are mentioned below

<https://legacy.reactjs.org/docs/getting-started.html>

<https://firebase.google.com/docs/web/setup>

[https://www.youtube.com/watch?v=pale4yx\\_Ha8](https://www.youtube.com/watch?v=pale4yx_Ha8)

[https://www.youtube.com/watch?v=\\_ou3KWsnZTI&t=21417s](https://www.youtube.com/watch?v=_ou3KWsnZTI&t=21417s)

For deploying:

<https://www.youtube.com/watch?v=IokPiSZpXDY&t=166s>