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A Report on

Advanced Web Programming Project
E-Commerce Website

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INTRODUCTION

With the increasing adoption of online shopping, e-commerce platforms have become essential for businesses and consumers alike. E-commerce websites offer a convenient way for buyers to browse and purchase items from a variety of sellers, all within a secure, accessible digital environment. The primary purpose of this project is to build an e-commerce website with user-friendly account management features tailored to both buyers and sellers.

This platform will support two main user roles:

1. Buyers – Users looking to purchase items from available listings.
2. Sellers – Users interested in listing and selling products on the platform.

The website design prioritizes a responsive and engaging user experience, accessible across various devices and screen sizes, with features like secure login, real-time error feedback, and intuitive navigation. The primary goal is to facilitate a smooth and secure experience for users, offering a reliable platform for managing transactions and user accounts. This project represents a streamlined approach to e-commerce, focusing on usability, security, and visual appeal.

PROBLEM STATEMENT

Despite the rise in online shopping platforms, many e-commerce websites face challenges related to usability, accessibility, and security.

Common issues include:

- **Complex Registration and Login Systems:** Users may face confusing registration and login processes, with inadequate error handling, which can lead to frustration and abandoned sign-ups.
- **Poor Mobile Compatibility:** With a growing number of users accessing websites on mobile devices, it is essential to have a responsive design that looks and functions well on all screens. Many existing platforms lack optimal mobile responsiveness.
- **Weak User Role Management**: Most e-commerce websites lack a clear distinction in account management between buyers and sellers, leading to inefficiencies in how users interact with the platform.
- **Security Concerns:** Online platforms are frequent targets of unauthorized access and data breaches. A lack of secure authentication systems can compromise user trust and discourage use.

To address these issues, this project aims to create an e-commerce website with robust, easy-to-use account management and secure login functionality, supported by a responsive, user-friendly interface. This design seeks to improve usability, security, and satisfaction for both buyers and sellers.

PROPOSED SOLUTION

This e-commerce website offers a streamlined, efficient solution for online shopping with the following features:

1. **User Registration and Authentication**:

- Provides a secure and intuitive sign-up and login system for both buyers and sellers.
- Supports real-time form validation, with password matching checks and error messages for missing or invalid data.
- Ensures data integrity with HTTPS communication, secure password storage, and appropriate form validation to prevent unauthorized access.

2. **Role-Based Account Management**:

- Distinguishes between buyers and sellers during the registration process, allowing for customized experiences based on user roles.
- Buyers have access to browsing and purchasing functionalities, while sellers can create and manage product listings.
- The design caters to role-specific needs, ensuring that both types of users have the tools and resources they need to operate effectively within the platform.

3. **Error Handling and User Feedback**:

- Real-time error messages during registration and login improve the user experience by guiding users through the correct inputs.
- Clear and specific error messages provide helpful feedback, reducing frustration and input errors.

4. **Responsive and Aesthetic Design**:

- A modern, minimalist interface is implemented using Bootstrap to ensure the site is both visually appealing and functional across different devices.
- The use of mobile-friendly layout adjustments guarantees a seamless user experience on both desktop and mobile screens.
- The color scheme, button designs, and form styling are designed to create a professional and inviting atmosphere for users.

5. **Enhanced User Experience with Animation and Feedback**:

- Subtle animations, like button scaling and form control color changes, enhance user interaction and provide feedback that the system is responsive to their inputs.
- The smooth, interactive UI keeps users engaged and improves overall satisfaction with the platform.

Overall, this solution focuses on combining user experience design with robust security practices, meeting the diverse needs of buyers and sellers while ensuring data security and accessibility. By addressing common issues with e-commerce platforms, this website aims to stand out as a reliable and user-centric shopping destination.

OBJECTIVES

1. Create an Accessible and User-Friendly Registration and Login System for Both Buyers and Sellers

- Clear Role Selection: Allow users to select whether they are registering as a buyer or a seller, ensuring that the system adapts to their role appropriately after registration.
- Role-based Dashboard: Upon logging in, users should be redirected to dashboards that are specific to their role (e.g., sellers to product management, buyers to browsing).

2. Ensure Data Security by Implementing Secure Password Requirements and Real-Time Error Messages

- Password Requirements: Enforce strong password policies with clear instructions on length, complexity, and security. Display real-time feedback on password strength.
- Password Hashing: Use secure hashing algorithms (e.g., bcrypt) to store passwords securely in the database.
- Error Messaging: Provide real-time error messages during login and registration to inform users about issues like incorrect passwords or invalid email format.

3. Provide a Clear and Interactive Interface That Guides Users Smoothly Through Registration, Login, and Account Management

- Simple Registration Flow: Use a multi-step form to guide users through the registration process, starting with basic details and then collecting additional information.
- Helpful Tooltips: Display tooltips or additional information on fields (e.g., password requirements) to ensure users understand how to complete forms correctly.
- Responsive Design: Ensure the interface adapts well to both desktop and mobile devices, keeping the layout user-friendly and easy to navigate.

4. Implement Real-Time Form Validation for Registration and Login

- Instant Feedback: Provide real-time validation on fields like email (e.g., correct format) and password (e.g., strong enough), letting users know if something is wrong before they submit the form.
- Guided Input: Use visual indicators like green/red checkmarks to show when input is valid or invalid, improving the overall user experience.

SOFTWARE REQUIREMENTS

1. **Frontend:**
    - HTML5 and CSS3 fo5r structure and styling.
    - JavaScript for client-side validation.
    - Bootstrap 5 for responsive design.

2. **Backend:**
    - PHP for server-side scripting.
    - XAMPP for local server and MySQL database support (for development purposes).

3. **Database:**
    - MySQL for storing user data, including credentials and account information.

4. **Environment:**
    - Browser compatibility (Chrome, Firefox, Safari).
    - Code Editor (e.g., Visual Studio Code).

5. **Additional Libraries:**
    - Bootstrap CDN for quick and easy styling.
    - JavaScript for error handling and form validation.

WEB PAGES OVERVIEW

1. Login Page (login.html)

Purpose: This page is the user login interface, allowing both buyers and sellers to securely enter their credentials and access the main platform.

Key Features:

- Username and Password Fields: Required fields for user login, with placeholders and basic validation.
- Responsive Styling: Designed using Bootstrap for a consistent and responsive UI across different devices.
- Error Handling: Directs users to a login failure page if the credentials are incorrect.
- Role-Based Redirection: Once a user logs in, they are redirected to a page based on their user role (Buyer or Seller).

2. Login Failed Page (login_failed.html)

Purpose: To notify users that their login attempt has failed due to incorrect credentials.

Key Features:

- Error Message: Displays a user-friendly message indicating the login failure.
- Return Button: A button to return to the login page and attempt another login.

3. Signup Page (Signup.html)

Purpose: This page allows new users to create an account, either as a Buyer or Seller, to access the platform.

Key Features:

- Registration Form: Includes fields for username, password, password confirmation, and role selection (Buyer or Seller).
- Validation: Validates the password match before submission and checks for existing usernames in the backend.
- Role Selection Dropdown: Allows users to specify their account type (Buyer or Seller).
- Error Display: If the username already exists, an error message is displayed, and the user is redirected back to the signup page with their entered username preserved.

4. Login Processing Script (login.php)

Purpose: Handles the login authentication for users.

Key Features:

- Session Management: Starts a session to keep track of the user's login status and store user details.
- Database Query: Verifies the entered username and password with the database records.
- Role-Based Redirection: Redirects users to either the seller/home.php or buyer/home.php page based on their account type.
- Error Redirection: Redirects to the login_failed.html page if the login attempt fails.

5. Signup Processing Script (Signup.php)

Purpose: Handles user registration by saving new user details in the database.

Key Features:

- Username Check: Searches the database to ensure the chosen username is unique.
- User Insertion: If the username is unique, inserts the new user into the database with the chosen username, password, and role.
- Error Handling and Redirect: If the username already exists, the user is redirected to Signup.html with an error message and their inputted username. If the signup is successful, the user is redirected to the login.html page.

6. Seller and Buyer Home Pages (seller/home.php and buyer/home.php)

Purpose: These pages (though not provided in the code) are expected to serve as landing pages for Sellers and Buyers after a successful login.

Key Features (based on assumptions):

- Role-Specific Content: Displays content relevant to the user's role (e.g., listing management for Sellers, product browsing for Buyers).
- Session-Based Access: Ensures that only authenticated users with the correct role access these pages.

SELLERS

1. Product Management Page

- Purpose: This page allows sellers to view and manage the products they have listed on the website.
- Key Features:
    - Displays a list of the seller's products.
    - For each product, shows the product name, price, image, and provides options for editing or deleting the product.
    - A "Show More" link to view more details about each product.
    - If no products are listed, a message prompts the seller to add products, with a link to a product launch page.

2. Profile Update Popup

- Purpose: This popup prompts the seller to update their profile when certain information is missing or incomplete.
- Key Features:
    - Displays a list of missing fields that need to be updated before proceeding with certain actions (like launching products).
    - Includes a button linking to the profile edit page for the seller to update their details.

3. Orders Management Page

- Purpose: This page displays the orders received by the seller, allowing them to manage and update the status of each order.
- Key Features:
    - Shows a table of orders, including order ID, buyer information, total amount, order date, and current status.
    - Allows sellers to update the status of each order (e.g., Pending, Shipped, Delivered, Cancelled).
    - Provides an option to update the status for each order with a dropdown menu.
    - If no orders are received, a message indicates that the seller has not yet received any orders.

4. Launch Product Button

- Purpose: This feature helps sellers add products to their inventory.
- Key Features:
    - If the seller has missing profile information, clicking the "Launch Product" button will display the profile update popup to ensure the profile is complete before proceeding.

5. Order Status Update

- Purpose: This feature allows sellers to update the status of orders from Pending to Shipped, Delivered, or Cancelled.
- Key Features:
    - A form is provided with a dropdown to select the new order status.
    - The status can be updated for each order.

6. Popup for Missing Profile Information

- Purpose: Displays a warning when the seller's profile information is incomplete, preventing certain actions until the profile is updated.
- Key Features:
    - Displays a list of missing fields, prompting the seller to complete their profile.

7. General UI and Design

- Purpose: The design ensures the user experience is intuitive, with a dark theme and modern layout that is easy to navigate.
- Key Features:
    - Responsive design with clean and simple layout for product and order management.
    - Interactive features like hovering effects, popup notifications, and clickable buttons.
    - Product cards and order tables are styled for readability and user interaction.

These features are specifically aimed at giving sellers the tools they need to manage their inventory and orders efficiently on the e-commerce platform, while also ensuring that their profile is complete and up-to-date before they can launch products or proceed with managing orders.

BUYER

1. Product Browsing Page

- **Purpose**: This page allows buyers to browse and search for products listed by sellers.
- **Key Features**:
    - Displays a variety of product categories for easy browsing.
    - Shows product details including name, price, image, seller information, and ratings.
    - A search bar and filter options to help buyers narrow down product choices based on price, ratings, or category.
    - Each product has a "View Details" link for more in-depth information.

2. Product Details Page

- **Purpose**: This page provides detailed information about a selected product.
- **Key Features**:
    - Displays high-quality product images with zoom-in options.
    - Includes a detailed product description, size/variant options, and available stock.
    - Buyer can see seller ratings and reviews for the product.
    - An "Add to Cart" button to add the product to the shopping cart.

3. Cart Management

- **Purpose**: This feature allows buyers to view and manage items they intend to purchase.
- **Key Features**:
    - Displays all items added to the cart with product name, price, quantity, and total cost.
    - Option to edit quantity or remove items from the cart.
    - Shows a summary of total cost, including any applicable taxes or shipping fees.
    - An "Proceed to Checkout" button to initiate the purchasing process.

4. Order History Page

- **Purpose**: This page allows buyers to view their past and current orders.
- **Key Features**:
    - Displays a list of past orders with details including order ID, product(s) purchased, total amount, order date, and current status (e.g., Pending, Shipped, Delivered).
    - Includes a "Track Order" button to view the current status of shipped orders.
    - Option to view detailed order information for each past order.

5. Profile Management

- **Purpose**: This feature lets buyers manage their personal information and order preferences.
- **Key Features**:
    - Allows buyers to update personal details, including shipping address, payment methods, and contact information.
    - Option to change the password or delete the account.
    - Allows buyers to manage their notification preferences (e.g., receive updates about new products or discounts).

6. Ratings and Reviews

- **Purpose**: Enables buyers to rate and review products they've purchased.
- **Key Features**:
    - After purchase, buyers can rate products based on quality, shipping time, and overall satisfaction.
    - Option to write detailed reviews with pros and cons to help future buyers.
    - Display of seller's ratings and reviews for buyers to make informed decisions.

7. General UI and Design

- **Purpose**: The design ensures a smooth, intuitive, and visually pleasing shopping experience for buyers.
- **Key Features**:
    - A modern, clean layout that is easy to navigate.
    - Interactive features like smooth hover effects, clickable buttons, and category filters.
    - Responsive design that adapts to various screen sizes, providing an optimal experience on both desktop and mobile devices.
    - Clear visual cues for actions like adding to cart, checking out, and order status.

These features are tailored to give buyers an easy and convenient way to browse products, make purchases, track their orders, and interact with sellers on the e-commerce platform. The interface should be intuitive, ensuring a smooth and satisfying user experience from product discovery to order delivery.

DATABASE TABLES AND DIAGRAMS

4 tables have been used in this E-commerce Website –
Users, Orders, Product, Cart.
The schema of each of these tables have been is given below.

Database:

User:

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
1	**userid**	int(11)			No	*None*		AUTO_INCREMENT	Change Drop More
2	**username**	varchar(255)	utf8mb4_general_ci		No	*None*			Change Drop More
3	**password**	varchar(255)	utf8mb4_general_ci		No	*None*			Change Drop More
4	**usertype**	enum('Buyer', 'Seller', '', '')	utf8mb4_general_ci		No	*None*			Change Drop More
5	**createddate**	timestamp			No	current_timestamp()		ON UPDATE CURRENT_TIMESTAMP()	Change Drop More
6	**mobile**	int(15)			No	*None*			Change Drop More
7	**email**	varchar(255)	utf8mb4_general_ci		No	*None*			Change Drop More
8	**address1**	varchar(255)	utf8mb4_general_ci		No	*None*			Change Drop More
9	**address2**	varchar(255)	utf8mb4_general_ci		No	*None*			Change Drop More
10	**country**	varchar(255)	utf8mb4_general_ci		No	*None*			Change Drop More
11	**impath**	varchar(255)	utf8mb4_general_ci		No	./shared/profileimages/default-profile-image.jpg			Change Drop More

Orders:

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
1	**user_id**	int(11)			No	*None*			Change Drop More
2	**total_amount**	decimal(10,2)			No	*None*			Change Drop More
3	**items**	varchar(255)	utf8mb4_general_ci		No	*None*			Change Drop More
4	**quantity**	int(255)			No	*None*			Change Drop More
5	**order_id**	int(11)			No	*None*		AUTO_INCREMENT	Change Drop More
6	**order_date**	timestamp			No	current_timestamp()		ON UPDATE CURRENT_TIMESTAMP()	Change Drop More
7	**status**	enum('Pending', 'Processing', 'Shipped', 'Delivere...	utf8mb4_general_ci		No	Pending			Change Drop More
8	**Suser_id**	int(11)			No	*None*			Change Drop More
9	**Smobile**	int(15)			No	*None*			Change Drop More
10	**Semail**	varchar(255)	utf8mb4_general_ci		No	*None*			Change Drop More
11	**Saddress1**	varchar(255)	utf8mb4_general_ci		No	*None*			Change Drop More
12	**Saddress2**	varchar(255)	utf8mb4_general_ci		No	*None*			Change Drop More
13	**Scountry**	varchar(255)	utf8mb4_general_ci		No	*None*			Change Drop More
14	**Bmobile**	int(15)			No	*None*			Change Drop More
15	**Bemail**	varchar(255)	utf8mb4_general_ci		No	*None*			Change Drop More
16	**Baddress1**	varchar(255)	utf8mb4_general_ci		No	*None*			Change Drop More
17	**Baddress2**	varchar(255)	utf8mb4_general_ci		No	*None*			Change Drop More
18	**Bcountry**	varchar(255)	utf8mb4_general_ci		No	*None*			Change Drop More

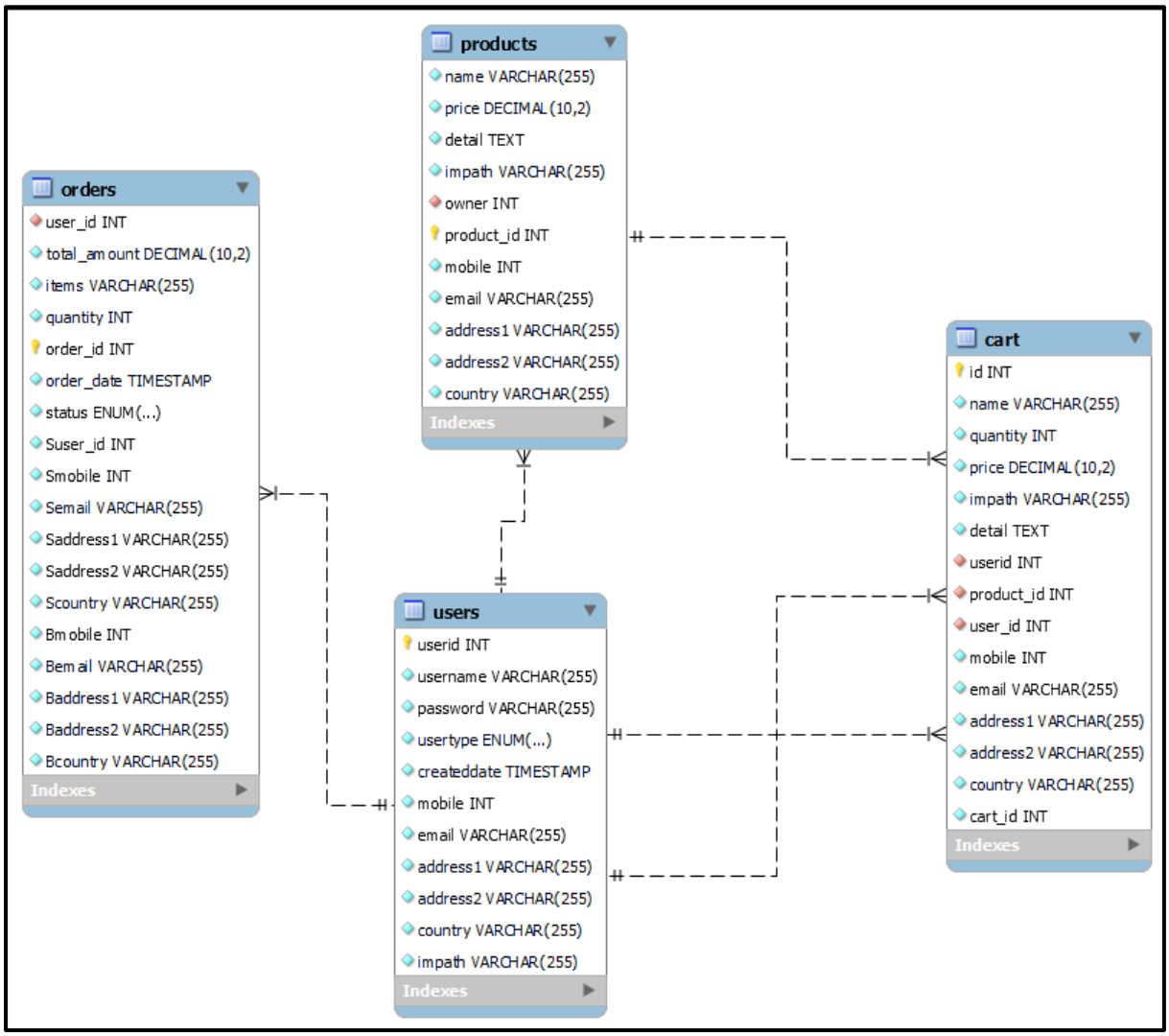
Product:

	#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
☐	1	**name**	varchar(255)	utf8mb4_general_ci		No	*None*			Change Drop More
☐	2	**price**	decimal(10,2)			No	*None*			Change Drop More
☐	3	**detail**	text	utf8mb4_general_ci		No	*None*			Change Drop More
☐	4	**impath**	varchar(255)	utf8mb4_general_ci		No	*None*			Change Drop More
☐	5	**owner**	int(11)			No	*None*			Change Drop More
☐	6	**product_id** 🔑	int(11)			No	*None*		AUTO_INCREMENT	Change Drop More
☐	7	**mobile**	int(15)			No	*None*			Change Drop More
☐	8	**email**	varchar(255)	utf8mb4_general_ci		No	*None*			Change Drop More
☐	9	**address1**	varchar(255)	utf8mb4_general_ci		No	*None*			Change Drop More
☐	10	**address2**	varchar(255)	utf8mb4_general_ci		No	*None*			Change Drop More
☐	11	**country**	varchar(255)	utf8mb4_general_ci		No	*None*			Change Drop More

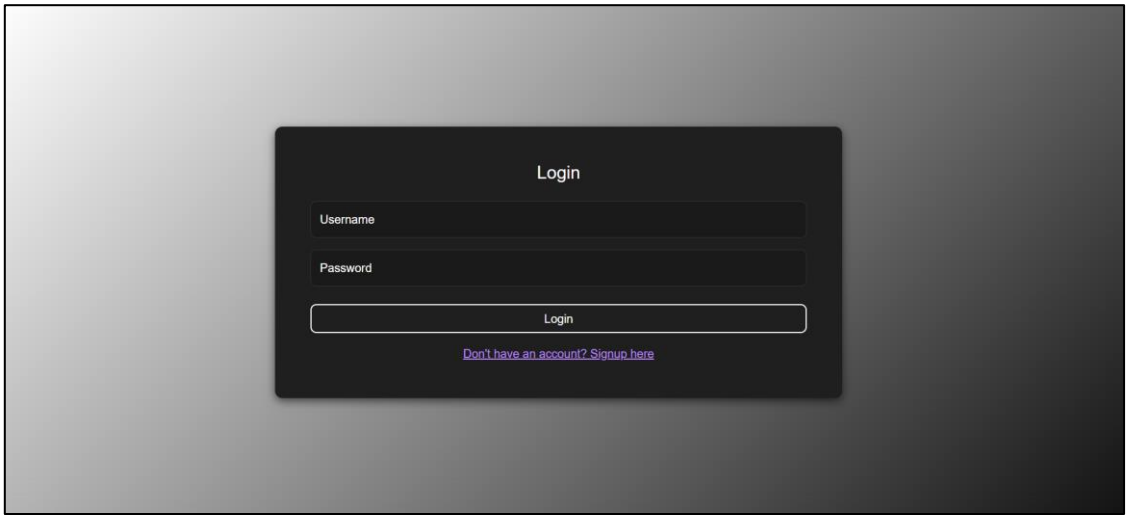
Cart:

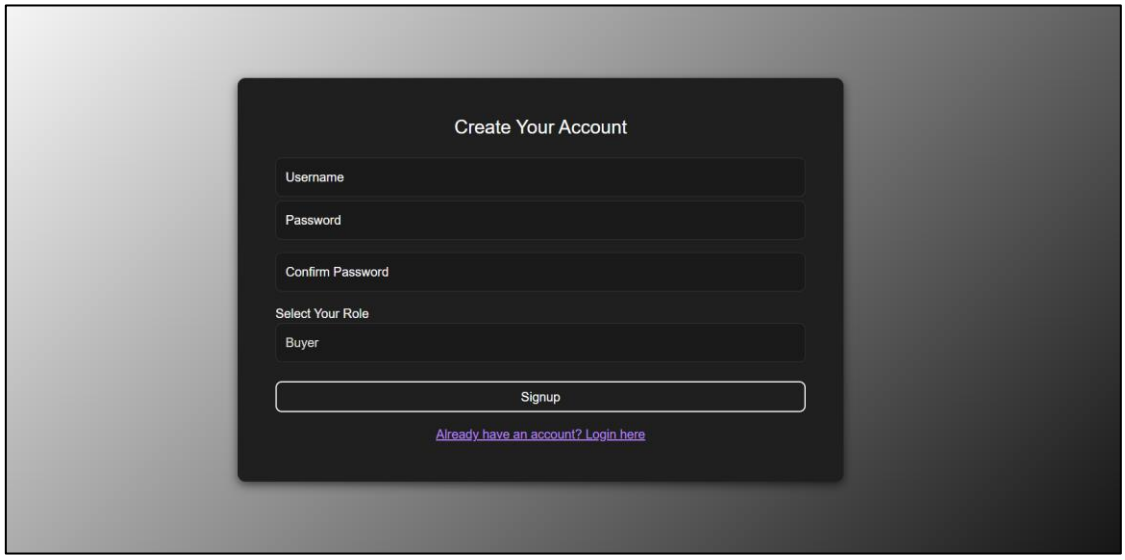
	#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
☐	1	**name**	varchar(255)	utf8mb4_general_ci		No	*None*			Change Drop More
☐	2	**quantity**	int(255)			No	*None*			Change Drop More
☐	3	**price**	decimal(10,2)			No	*None*			Change Drop More
☐	4	**impath**	varchar(255)	utf8mb4_general_ci		No	*None*			Change Drop More
☐	5	**detail**	text	utf8mb4_general_ci		No	*None*			Change Drop More
☐	6	**userid**	int(11)			No	*None*			Change Drop More
☐	7	**product_id**	int(11)			No	*None*			Change Drop More
☐	8	**user_id**	int(11)			No	*None*			Change Drop More
☐	9	**mobile**	int(15)			No	*None*			Change Drop More
☐	10	**email**	varchar(255)	utf8mb4_general_ci		No	*None*			Change Drop More
☐	11	**address1**	varchar(255)	utf8mb4_general_ci		No	*None*			Change Drop More
☐	12	**address2**	varchar(255)	utf8mb4_general_ci		No	*None*			Change Drop More
☐	13	**country**	varchar(255)	utf8mb4_general_ci		No	*None*			Change Drop More
☐	14	**cart_id** 🔑	int(255)			No	*None*		AUTO_INCREMENT	Change Drop More

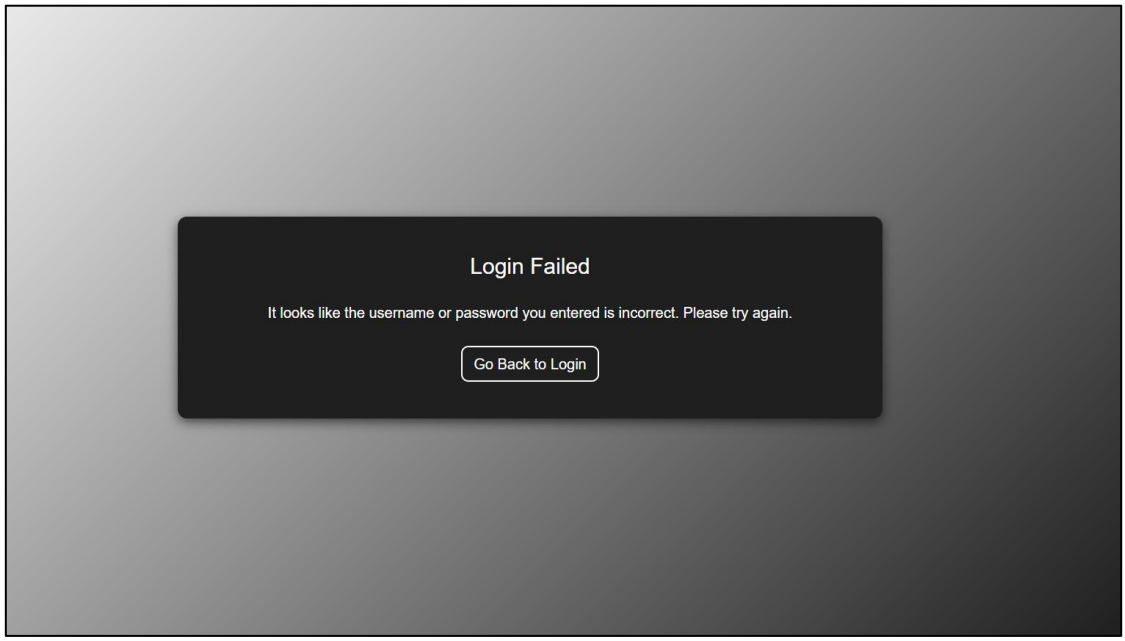
ENTITY-RELATIONSHIP DIAGRAM



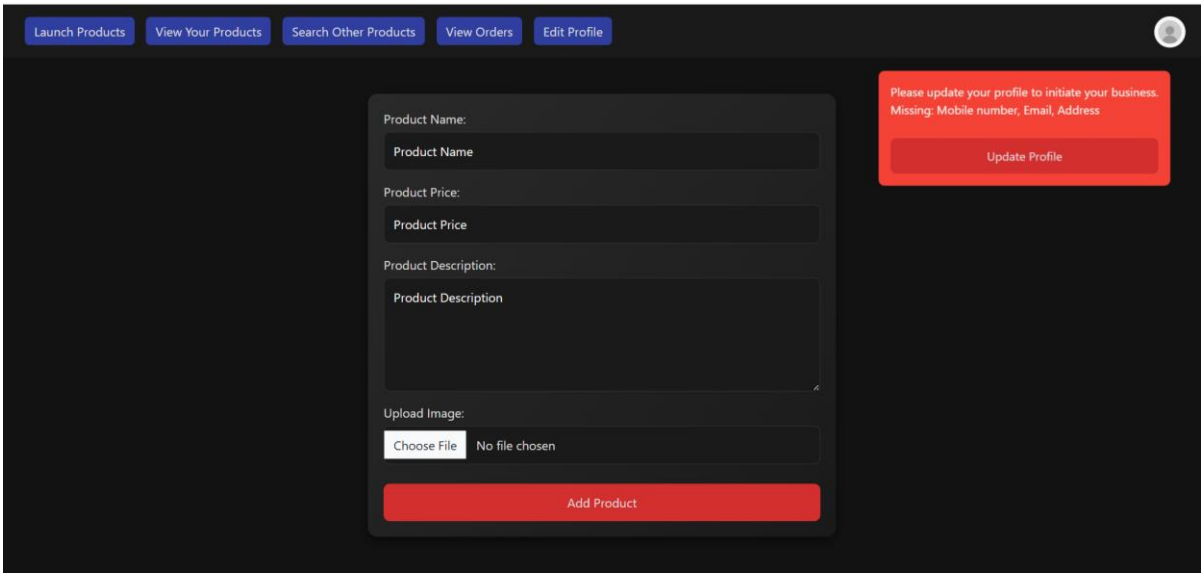
WEBSITE

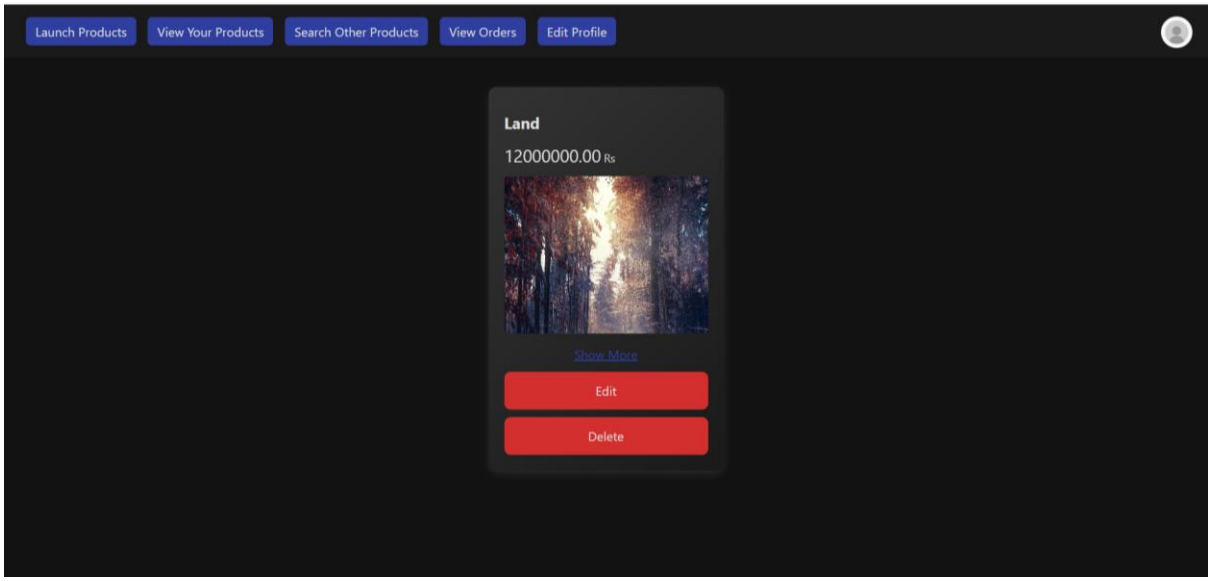

Login
Username
Password
Login
Don't have an account? Signup here

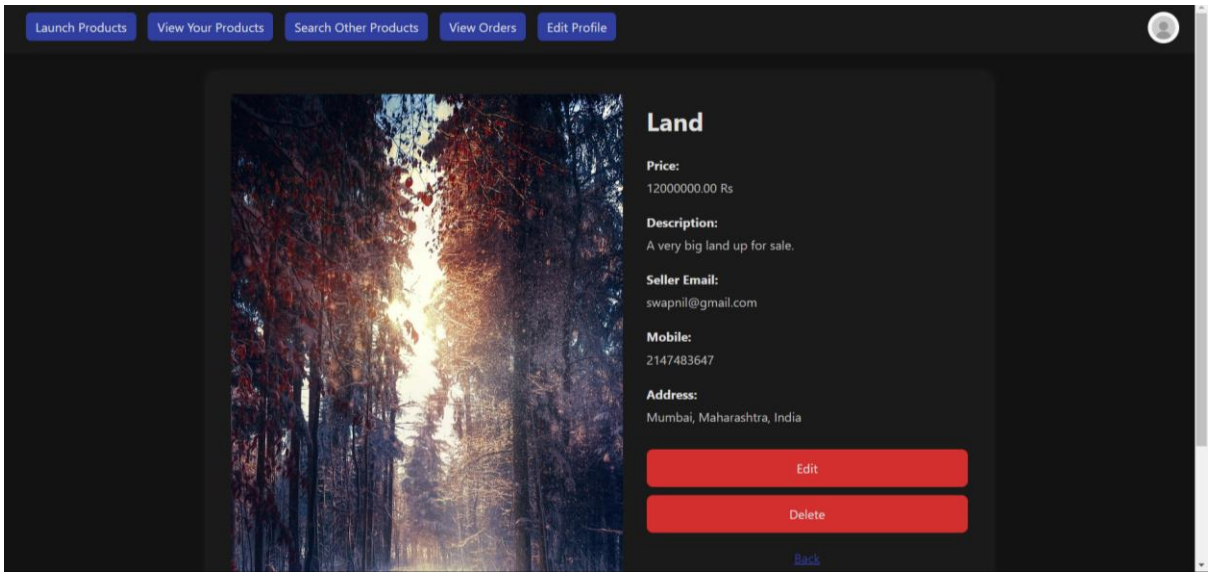

Create Your Account
Username
Password
Confirm Password
Select Your Role
Buyer
Signup
Already have an account? Login here

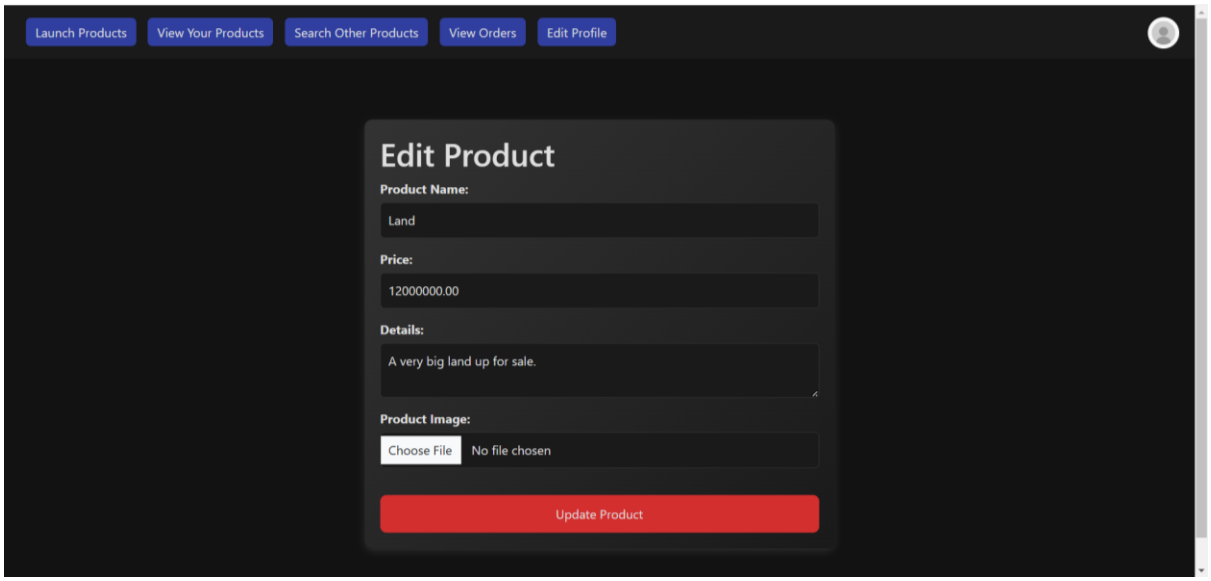

Login Failed
It looks like the username or password you entered is incorrect. Please try again.
Go Back to Login

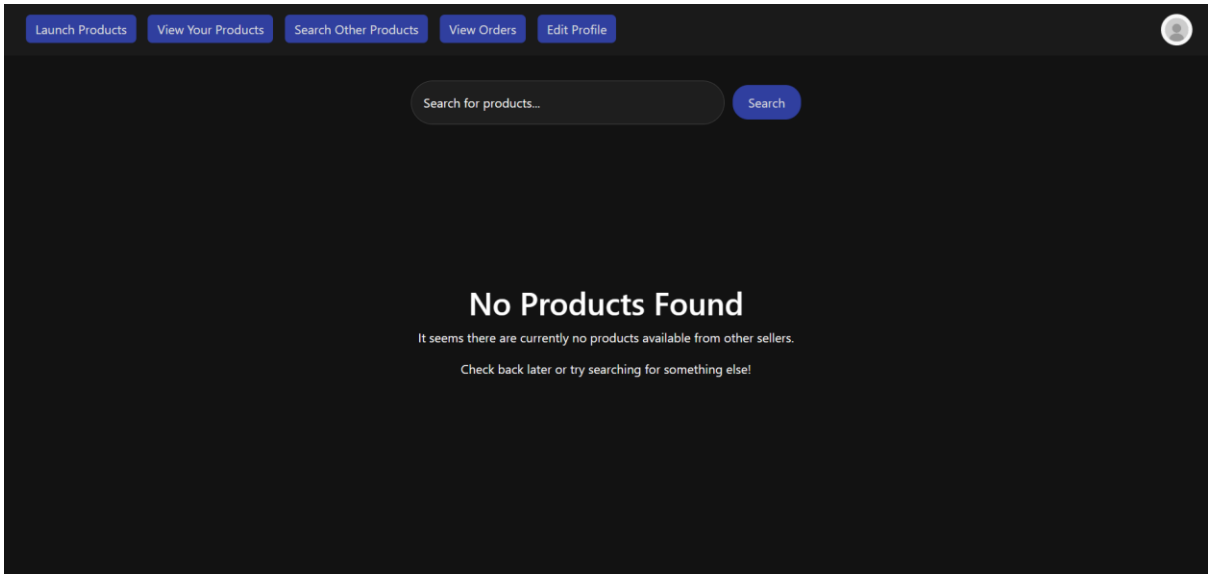
SELLER

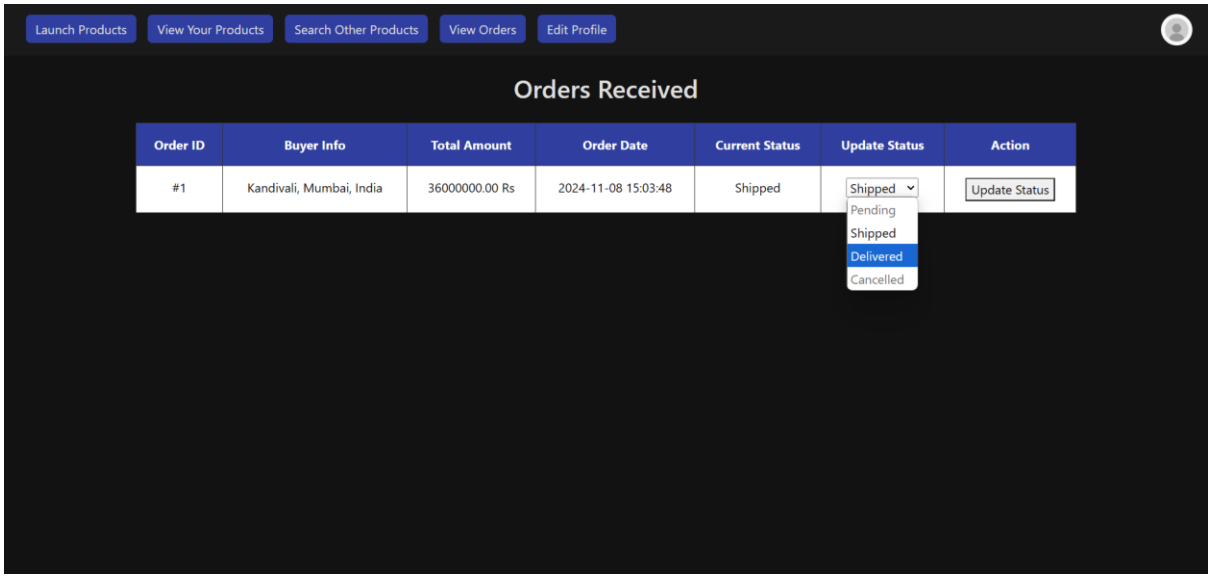

Launch Products
View Your Products
Search Other Products
View Orders
Edit Profile
Please update your profile to initiate your business.
Missing: Mobile number, Email, Address
Update Profile
Product Name:
Product Name
Product Price:
Product Price
Product Description:
Product Description
Upload Image:
Choose File
No file chosen
Add Product

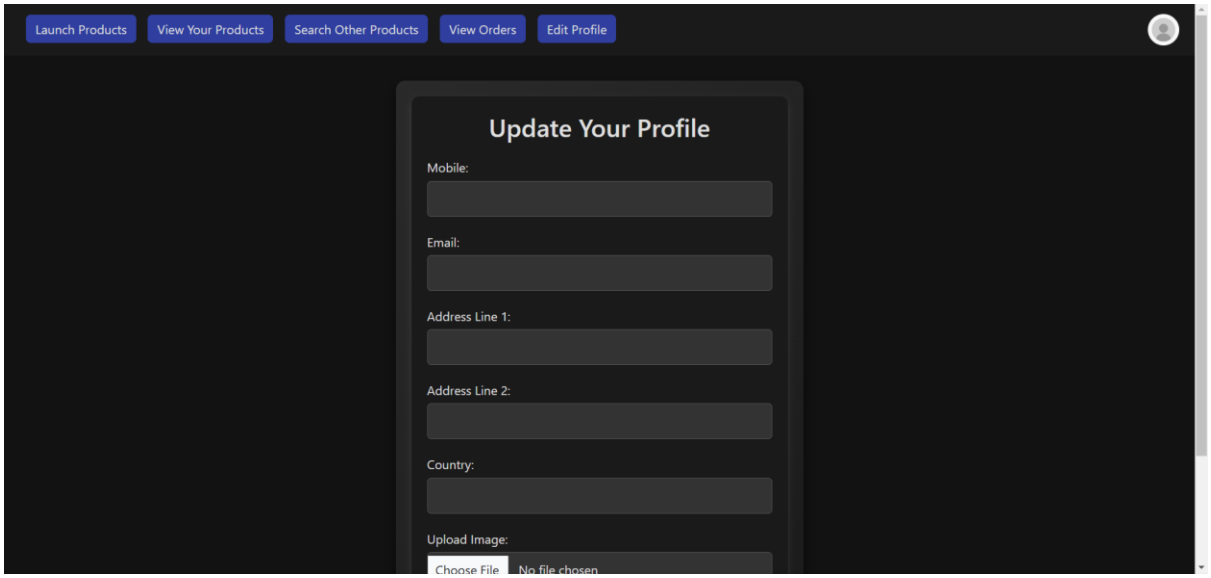

Launch Products
View Your Products
Search Other Products
View Orders
Edit Profile
Land
12000000.00 Rs
Show More
Edit
Delete

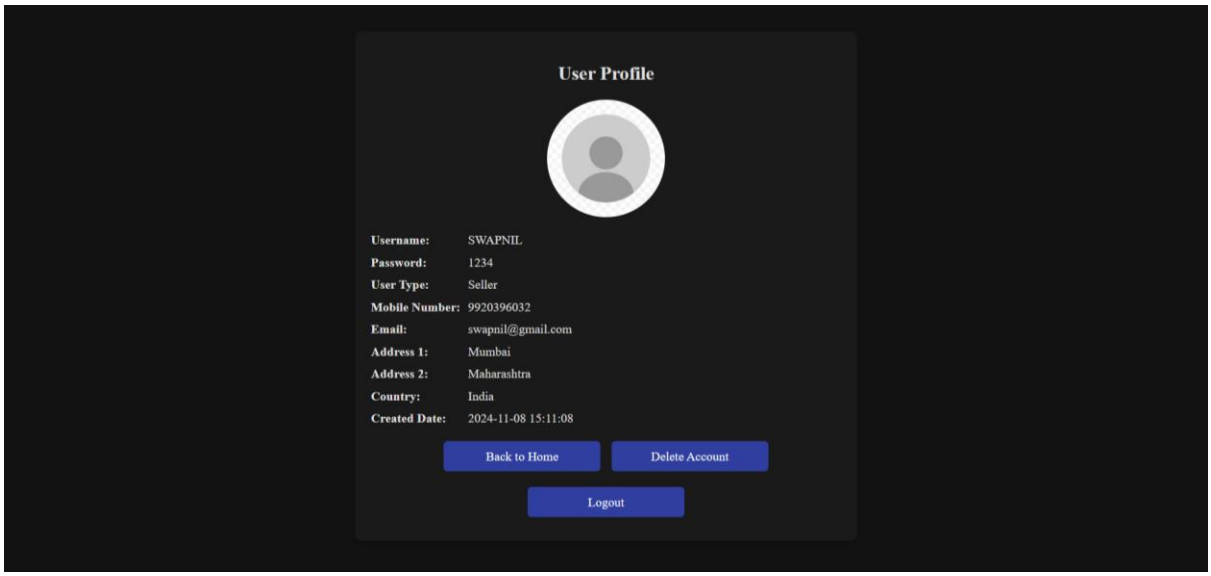

Launch Products
View Your Products
Search Other Products
View Orders
Edit Profile
Land
Price:
12000000.00 Rs
Description:
A very big land up for sale.
Seller Email:
swapnil@gmail.com
Mobile:
2147483647
Address:
Mumbai, Maharashtra, India
Edit
Delete
Back


Launch Products
View Your Products
Search Other Products
View Orders
Edit Profile
Edit Product
Product Name:
Land
Price:
12000000.00
Details:
A very big land up for sale.
Product Image:
Choose File
No file chosen
Update Product

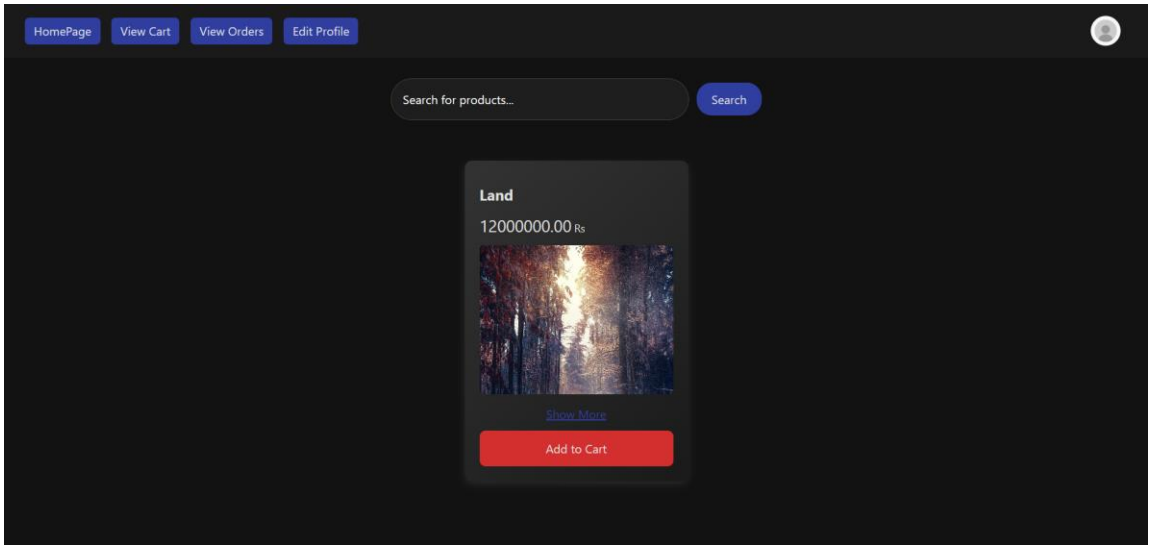

Launch Products
View Your Products
Search Other Products
View Orders
Edit Profile
Search for products...
Search
No Products Found
It seems there are currently no products available from other sellers.
Check back later or try searching for something else!

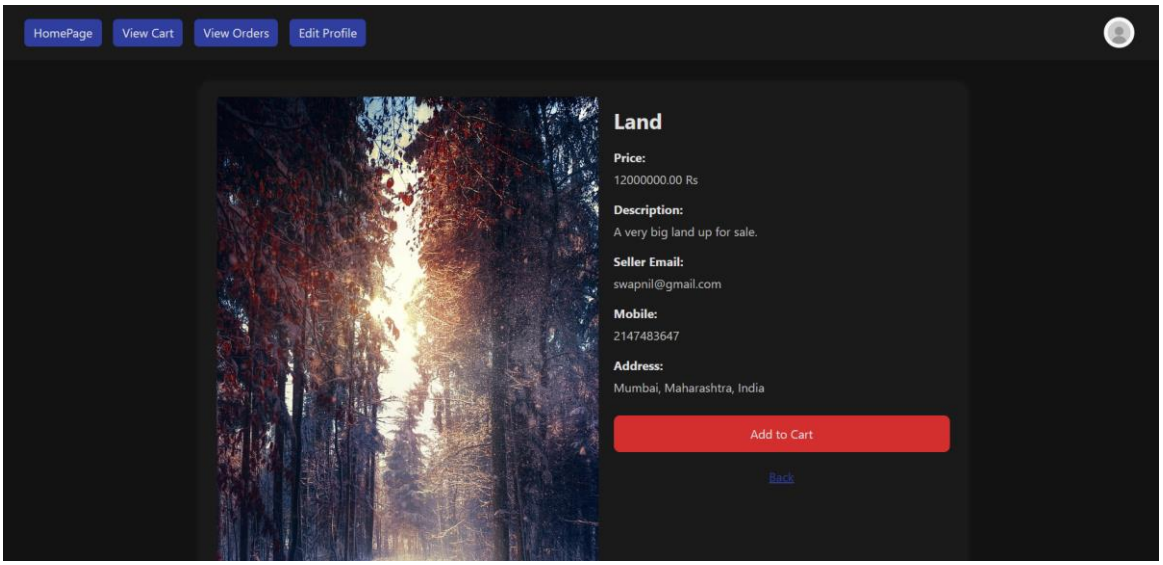

Launch Products
View Your Products
Search Other Products
View Orders
Edit Profile
Orders Received
Order ID
Buyer Info
Total Amount
Order Date
Current Status
Update Status
Action
#1
Kandivali, Mumbai, India
36000000.00 Rs
2024-11-08 15:03:48
Shipped
Shipped
Update Status
Pending
Shipped
Delivered
Cancelled

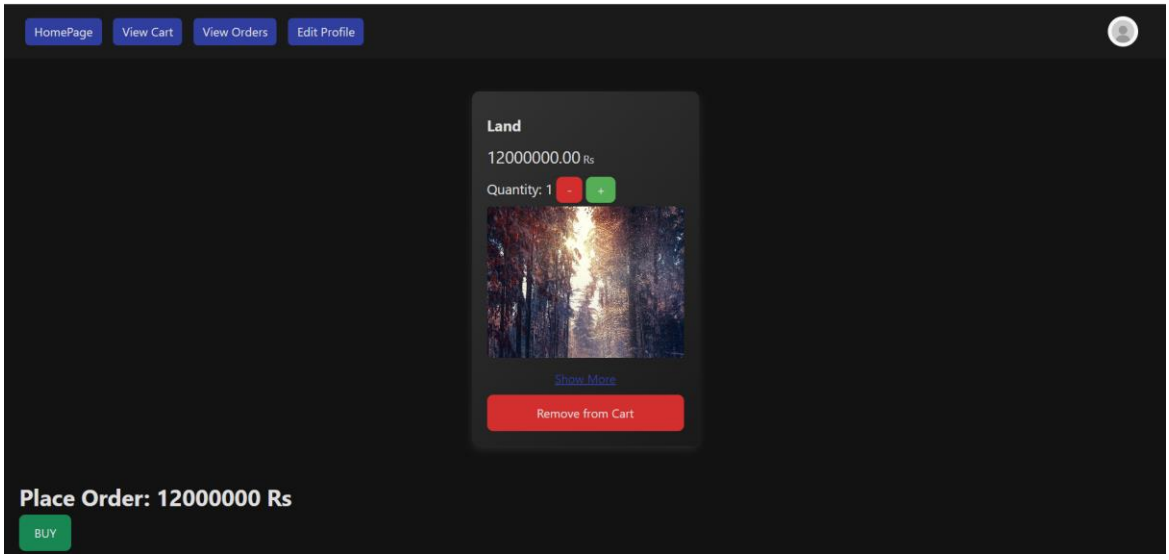

Launch Products
View Your Products
Search Other Products
View Orders
Edit Profile
Update Your Profile
Mobile:
Email:
Address Line 1:
Address Line 2:
Country:
Upload Image:
Choose File
No file chosen

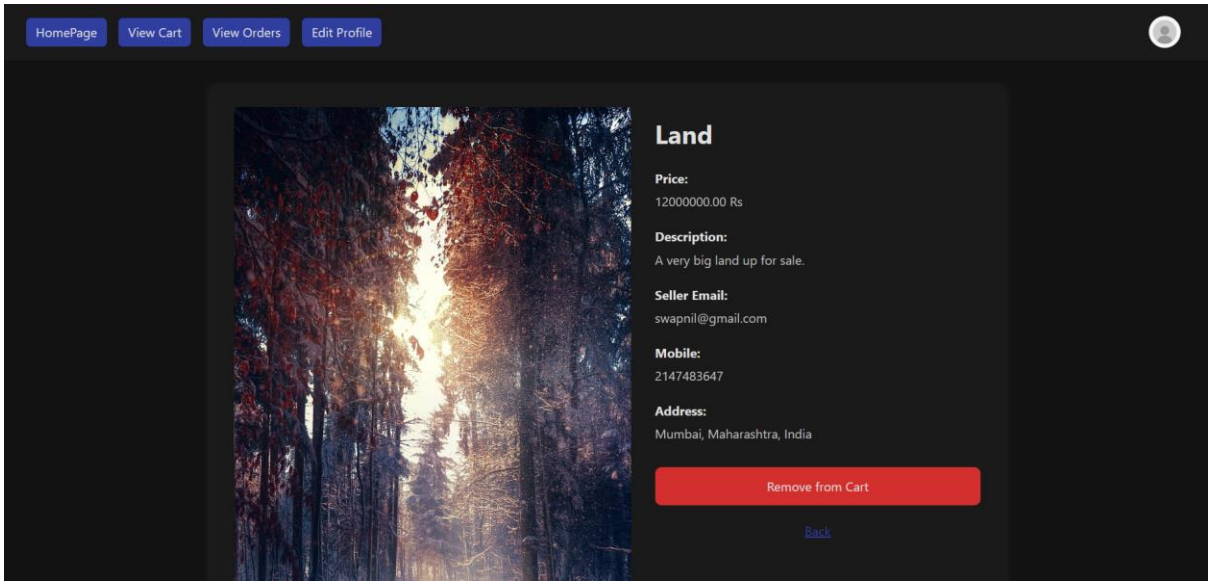

User Profile
Username: SWAPNIL
Password: 1234
User Type: Seller
Mobile Number: 9920396032
Email: swapnil@gmail.com
Address 1: Mumbai
Address 2: Maharashtra
Country: India
Created Date: 2024-11-08 15:11:08
Back to Home
Delete Account
Logout

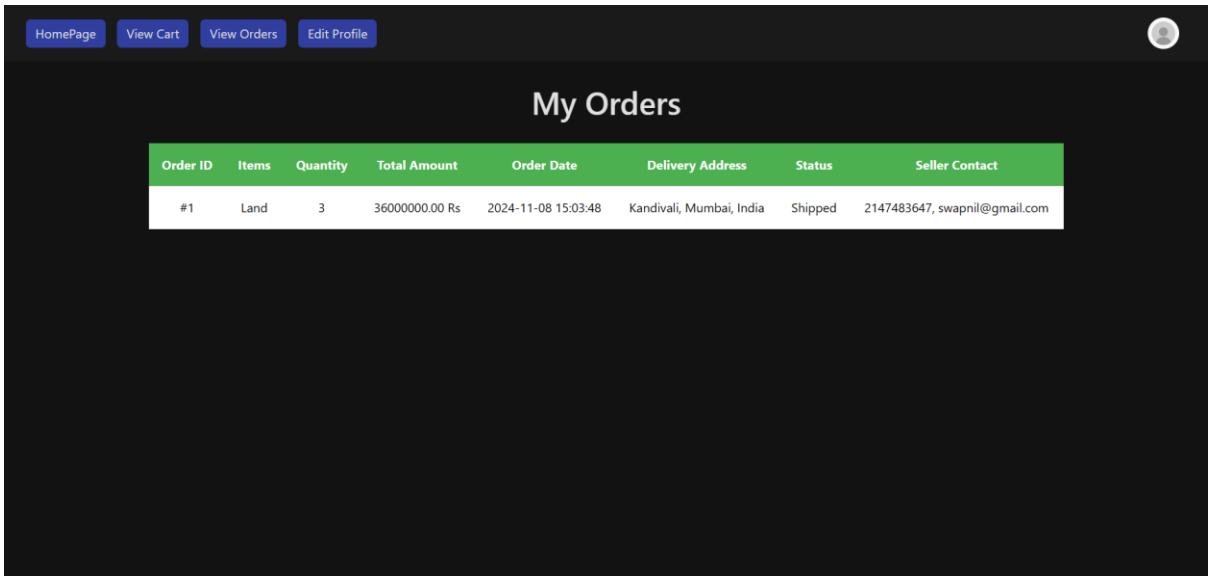
BUYER

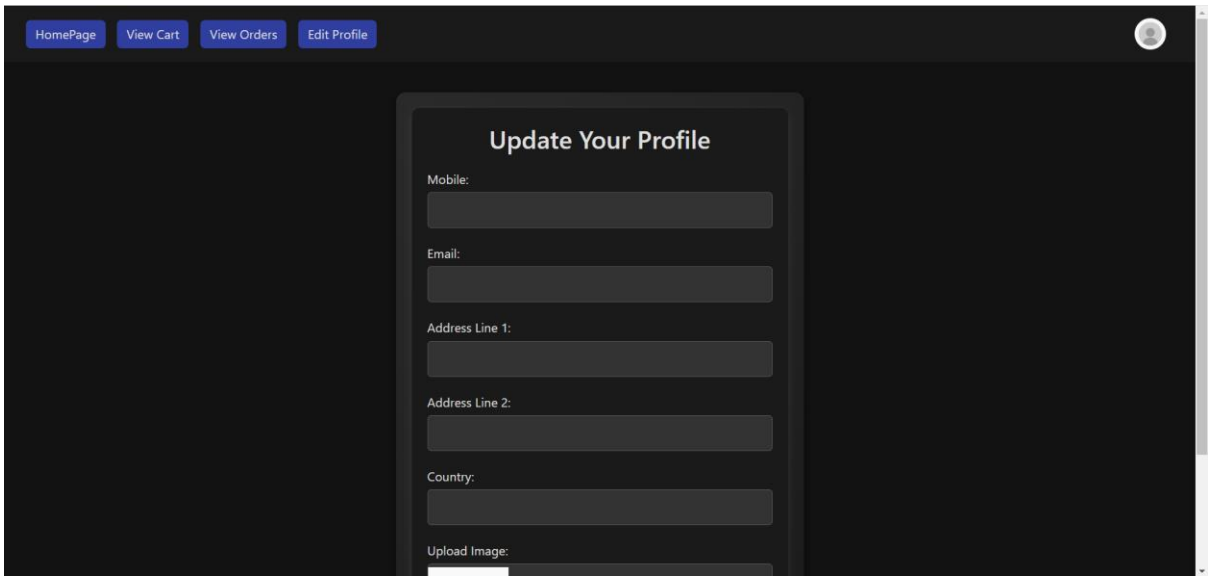

HomePage
View Cart
View Orders
Edit Profile
Search for products...
Search
Land
12000000.00 Rs
Show More
Add to Cart

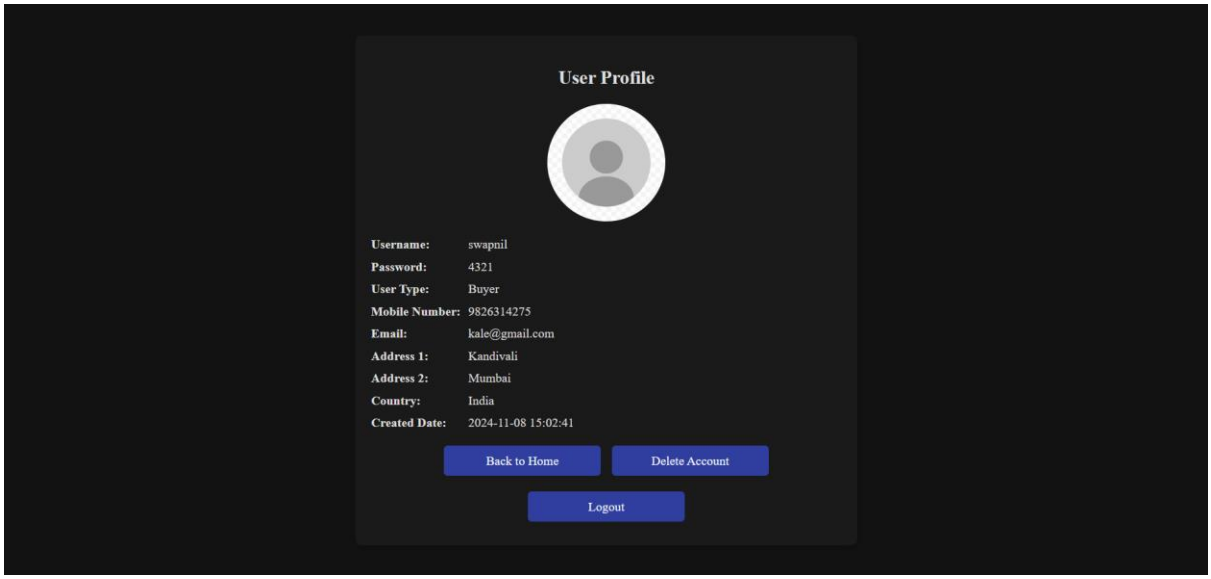

HomePage
View Cart
View Orders
Edit Profile
Land
Price:
12000000.00 Rs
Description:
A very big land up for sale.
Seller Email:
swapnil@gmail.com
Mobile:
2147483647
Address:
Mumbai, Maharashtra, India
Add to Cart
Back


HomePage
View Cart
View Orders
Edit Profile
Land
12000000.00 Rs
Quantity: 1
Show More
Remove from Cart
Place Order: 12000000 Rs
BUY


HomePage
View Cart
View Orders
Edit Profile
Land
Price:
12000000.00 Rs
Description:
A very big land up for sale.
Seller Email:
swapnil@gmail.com
Mobile:
2147483647
Address:
Mumbai, Maharashtra, India
Remove from Cart
Back


HomePage
View Cart
View Orders
Edit Profile
My Orders
Order ID
Items
Quantity
Total Amount
Order Date
Delivery Address
Status
Seller Contact
#1
Land
3
36000000.00 Rs
2024-11-08 15:03:48
Kandivali, Mumbai, India
Shipped
2147483647, swapnil@gmail.com


HomePage
View Cart
View Orders
Edit Profile
Update Your Profile
Mobile:
Email:
Address Line 1:
Address Line 2:
Country:
Upload Image:


User Profile
Username: swapnil
Password: 4321
User Type: Buyer
Mobile Number: 9826314275
Email: kale@gmail.com
Address 1: Kandivali
Address 2: Mumbai
Country: India
Created Date: 2024-11-08 15:02:41
Back to Home
Delete Account
Logout