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One Step In Changing Education Chain...

A Project Report On

DRONZA STORE

UDP Project

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Guided by

Asst. Prof. Ashish Solanki

Head of the Department

Mr. Saurabh Trivedi

In fulfillment for the award of the degree of

BACHELOR OF COMPUTER APPLICATION

Red & White Institute of Engineering & Technology SURAT, GUJARAT

2023-2024

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CERTIFICATE

This is to certify that the Project report, submitted for the project entitled **Dronza Store** has been carried out by **Paladiya Dishant HareshBhai (2214103230), Makrubiya Fenil HiteshBhai (2214103286), Donga Vansh HasmukhBhai (2214103318), Shankar Aryan ArvindBhai (2214103319)** at Computer Department of Red & White Institute of Engineering & Technology, Surat for fulfillment of BCA degree to be awarded by Swarrnim Startup & Innovation University. This Project work has been carried out under my supervision and is to my satisfaction.

Place: Surat Date:

Internal Guide	Head of the Department	External Faculty
Mr. Ashish Solanki	**Mr. Saurabh Trivedi**	
(Ass. Prof., RNW**)**		

Before tasking the project work for foundation , it is quite necessary to have an exact idea the work " **PROJECT**". The project consists of seven letters each letter each letter has its own significance as follow.

- 'P' For Planning
- 'R' For Resource
- 'O' For Operation
- 'J' For Joints Efforts
- 'C' For Communication
- 'T' For Task of Working

We happy to Hand Over this project to the store the **Red and White Institute of Engineering And Technology.**

In a computer application studies, the partial training is very important. We can improve theoretical knoledge by reading and attempt class but it is imperfect Without getting partial knowledge.Begin it student,we should see every side of technical unit.it perform vital role in developing software and situation opportunities and problem.

Acknowledgement

With immense pleasure and a sense of fulfilment, our team member present this report on the project entitled **Dronza Store**.

We would like to express our sincere gratitude towards **Asst.Prof. Ashish Solanki**, for having faith and giving a chance to pursue our project under his esteemed guidance. We would great pleasure to thanking him for giving us the chance to work under their prestige guidance. He gave us the technological lookout towards framing our definition and providing the road map to work on it. We would like to thank him for providing various sources of research material for our work. His creative ideas and insight has been an inspiration throughout our research period for project. Apart from that, his valuable and expert suggestion on preparing our document has been of great help. We would also like to express our gratitude towards our **H.O.D. Mr. Saurabh Trivedi**.

We would like to thank all the faculty member of our college and all friends, who have been a source of inspiration and motivation that helped us during our project period. We would also like to thank all those people who have helped us in our project work in any possible way.

Lastly, we heartily appreciate our family members for their motivation, love and support in fulfilling our academic goal.

From,

Paladiya Dishant HareshBhai (Enr No: 2214103230)

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I N D E X

1. Introduction

1.1 Project Summary

- This project aims to develop an autonomous multi-purpose drone capable of surveillance, delivery, and environmental monitoring.

- The drone will integrate GPS-based navigation, AI-powered object detection, and real-time video streaming to enhance efficiency and automation.

- It will also feature obstacle avoidance using LiDAR and ultrasonic sensors for safe operation.

- The drone will be equipped with a high-resolution camera, a payload delivery system, and a robust flight controller like Pixhawk.

- It will support both manual and automated flight modes, with communication through Wi-Fi, RF, or 4G/5G networks.

- The software stack includes Python, C++, and AI frameworks like TensorFlow for intelligent processing.

- This project has applications in security, agriculture, disaster response, and logistics.

- Challenges such as battery life and regulatory compliance will be addressed with optimized power management and adherence to aviation laws.

- The expected outcome is a fully functional prototype with potential for commercial deployment.

- The primary goal is to create a first-response drone that is both portable and capable of stable flight, particularly in challenging environments.

- This includes the ability to carry medical supplies or equipment weighing up to 1 kg.

- The project aims to fabricate a prototype of the designed drone and conduct tests to evaluate its performance under various loads and conditions.

- This will help identify any operational issues before full deployment.

1.2 Project Technical Profile

Fields	Descriptions
Project Title	**Dronza (***unmanned aerial vehicles (UAVs)***)**
Definition	A drone project involves the development and use of unmanned aerial vehicles (UAVs) to perform tasks such as aerial data collection, monitoring, delivery, or inspection.
Project Guide	Assit . Prof. Ashish Solanki
Front End	Html, Css, React
Back End	PHP
Programming Language	Reat Js
Operating System	Microsoft Windows 11
Submitted By	1 DISHANT H. PALADIYA (2214103230) 2 FENIL H. MAKRUBIYA (2214103286) 3 VANSH H. DONGA (2214103318) 4 ARYAN A. SHANKAR (2214103319)

Hardware & Software Requirement:

At Development Time…

- **Hardware Requirement:**

  - Intel® Core™ i5-3340M CPU @ 2.70GHz
  - Android Devices (For Testing)
  - Minimum 8.0 GB DDR3 RAM
  - 64-bit Operating System
  - 128 GB Hard Disk Drive

- **Software Requirement:**

  - xAMPP
  - Working Internet Connection
  - Visual Studio
  - Sublime Text
  - Fire Fox

2. Scope & Planning

2.1 Requirement Analysis for Drone

1. Requirement Gathering

➢ **Definition**: Requirement gathering for a drone project involves identifying, documenting, and validating the needs of stakeholders (users, clients, technical teams) to ensure the drone system meets its intended objectives. This process lays the foundation for the formal definition of the project and is conducted through discussions, interviews, brainstorming, and prototyping.

Steps in Requirement Gathering

1. Identify Stakeholders:

➢ Users: Individuals or organizations using the drone (e.g., farmers, emergency responders).

➢ Technical Teams: Engineers and developers responsible for drone design and functionality.

➢ Regulators: Authorities ensuring compliance with aviation laws and safety standards.

2. Establish Project Goals:

➢ Define the purpose of the drone (e.g., delivery, surveillance, mapping).

➢ Set measurable objectives like payload capacity, flight duration, and operational range.

3. Techniques:

➢ Conduct interviews with users to understand their needs.

➢ Use brainstorming sessions with experts to explore innovative features.

➢ Prototype testing to refine functionalities based on user feedback.

4. Document Requirements:

➢ Functional requirements: Payload capacity, camera quality, flight stability.

➢ Non-functional requirements: Battery life, durability, environmental impact.

➢ Regulatory requirements: Compliance with airspace laws and safety protocols.

2. Requirement Analysis for Drone Project:

➢ **Definition**: Requirement analysis for a drone project involves studying and refining the gathered requirements to ensure they are specific, actionable, and aligned with project goals. This phase includes analyzing existing systems and workflows to create a detailed Software Requirements Specification (SRS) document.

Steps in Requirement Analysis

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- Regulatory requirements: Compliance with airspace laws and safety protocols.

2.2 Feasibility Study for Drone

1. Technical Feasibility

➢ Technical feasibility evaluates whether the drone project can be implemented using existing technology, equipment, and expertise.

The following points outline its assessment:

1. Technology and Equipment:

➢ The proposed drone system will utilize state-of-the-art components such as GPS, advanced sensors, high-capacity batteries, and AI-based navigation systems.

➢ The drones will be equipped to handle specific tasks like delivery, surveillance, or mapping, ensuring they meet user requirements efficiently.

2. Software and Hardware:

➢ The drones will operate on robust software platforms compatible with various devices (e.g., mobile apps or desktop systems) and internet services.

➢ Hardware components such as motors, propellers, and cameras are selected to ensure optimal performance under diverse conditions.

3. Personnel and Expertise:

➢ The project will leverage skilled personnel for development, testing, and operation.

➢ Training programs for drone pilots and maintenance staff will ensure smooth operations.

4. Conclusion:

➢ The project is technically feasible as it uses proven technologies and methodologies to achieve its objectives.

2. Economic Feasibility

Economic feasibility assesses whether the benefits of the drone project justify its costs.

Below are the key considerations:

1. Cost-Benefit Analysis:

➢ Initial costs include drone manufacturing, software development, regulatory compliance, and training programs.

➢ Benefits include reduced operational expenses (e.g., replacing manned vehicles), faster delivery times, and improved efficiency in applications like agriculture or disaster response.

2. Profitability:

➢ The project is expected to generate revenue through applications like delivery services or data collection for industries such as agriculture or infrastructure.

Cost savings from automation (e.g., replacing manual inspections) further enhance economic viability.

3. Balancing Costs and Operations:

➢ While some high-end features may increase costs (e.g., advanced AI systems), they provide significant operational advantages.

➢ A balance between operational efficiency and economic feasibility is maintained to ensure the project remains cost-effective.

4. Conclusion:

➢ Based on the cost-benefit analysis, the drone project is economically feasible as it offers long-term profitability and value to stakeholders.

3. Operation Feasibility:

➢ **Definition**: Operational feasibility assesses whether the drone system will function effectively and be accepted by users once implemented. It evaluates the practicality of operations, user comfort, and the ability to address constraints like range, payload, and regulatory compliance.

1. User Acceptance:

➢ Drones are designed to be user-friendly, requiring minimal training for operators.

➢ Simple interfaces and automation ensure ease of use for both technical and non-technical users.

2. Operational Constraints:

➢ Range limitations: Current drones can operate within a flight distance of approximately 17.5 miles (~28 km), which is sufficient for many delivery and surveillance tasks.

➢ Payload capacity: Drones are optimized for specific weights (e.g., 5 lbs or 20 lbs) depending on the application.

3. Regulatory Compliance:

➢ Compliance with aviation laws is critical for operational feasibility.

➢ Autonomous operations are increasingly feasible as regulations relax over time.

4. Behavioral Feasibility:

➢ Users are likely to accept drones for applications like delivery or emergency response due to their efficiency and speed.

➢ Resistance to adoption is minimal when proper training and awareness programs are conducted.

4. Management Feasibility for Drone

➢ **Definition**: Management feasibility evaluates whether the project aligns with organizational goals and management approval. It involves reviewing all aspects of feasibility and ensuring managerial support for implementation.

1. Managerial Review:

➢ All levels of management assess technical, economic, and operational feasibility before approving the project.

➢ Managers evaluate the project's alignment with organizational objectives, such as cost reduction or service improvement.

2. Decision-Making:

➢ Managers balance conflicting feasibilities (e.g., operational efficiency vs. cost).

➢ Approval is based on a thorough analysis of benefits, risks, and resource requirements.

3. Support Systems:

➢ Management ensures adequate resources (personnel, funding) are available for successful implementation.

➢ Training programs are supported to prepare staff for drone operations.

5. Legal Feasibility for Drone

Definition: Legal feasibility examines whether the proposed drone system complies with relevant laws and regulations, including data protection, aviation regulations, and privacy laws.

1. Regulatory Compliance:

➢ The drone project will adhere to aviation laws governing UAV operations, including registration, flight permissions, and safety standards set by aviation authorities (e.g., FAA in the U.S. or DGCA in India).

➢ Compliance with local regulations regarding drone usage in specific areas (e.g., no-fly zones) will be ensured.

2. Data Protection:

➢ The system will not collect personally identifiable information (PII) from users without explicit consent.

➢ Any data collected during operations (e.g., flight logs or performance metrics) will be anonymized to protect user privacy.

2.3 Timeline Chart

When Scheduling of a software project is done. The planner begins with a set of tasks to be performed. It automated tools are used; the work breakdown is input as a task network or task outline. Effort, duration and start date are then input for each task. In addition, tasks may be assigned to specific individuals.

Work Tasks	Month	Dec		Jan				Feb				Mar			
	Week	3	4	1	2	3	4	1	2	3	4	1	2	3	4
1. Requirement Gathering and Analysis															
1.1 Requirement Gathering															
1.2 Identifying Needs															
1.3 Requirement Analysis															
2. Scope and Planning															
2.1 Information Gathering															
2.2 Problem Specification															
2.3 Feasibility Study															
2.4 Risk analysis															
2.5 Scheduling Chart															
3. Designing															
3.1 Database Design															
3.2 Use Case Design															
3.3 Data Flow Diagram															
3.4 Document Data Model Diagram															
3.5 Data Dictionary															
3.6 User Interface															
4. Coding & Logic Development															
4.1 Coding for Modules															
4.2 Implement Logic for Application															
4.3 Add Security for App data															
4.4 Finalize Application															
5. Testing & Reviewing															
5.1 Testing of Application															
5.2 Review Application & Bug Fixings															
6. Documentation															

2.4 Future Development

❖ **Smart Search Bar**:

- **Autocomplete & Suggestions** (e.g., brand, model, features).
- **Fuzzy Search** to handle typos and misspellings.

❖ **Advanced Filtering UI**:

- **Multi-Select Filters** (e.g., brand, flight range, battery life).
- **Range Sliders** for price, flight time, weight.
- **Toggle Filters** for availability (e.g., "In Stock" only).

❖ **Live Search Preview**: Show instant results as users type.

❖ **AI-Based Recommendations**: Suggest drones based on user history.

❖ **Natural Language Processing (NLP)**: Allow searches like **"Best drone under $500 with 4K camera"**.

❖ **Voice Search**: Enable users to search using voice commands.

2.5 Technologies Details

➢ This drone project will be developed using **HTML, CSS, Bootstrap, Javascript and React** for the front end and **PHP** for the back end.

➢ The application is designed to work seamlessly on web browsers and mobile devices, including Android and iOS.

➢ **Front-End and Back-End Overview**

➢ Front end and back end are generalized terms that refer to the initial and final stages of handling a system. Together, they ensure smooth interaction between users and the drone system.

1. Front End:

➢ The front end is responsible for collecting input from users (e.g., flight commands, location tracking) and processing it to conform to specifications that the back end uses.

➢ It serves as an interface between the user and the drone system, enabling users to interact with functionalities like live video streaming, GPS navigation, or automated flight modes.

➢ In this project, **HTML**, **CSS**, and **React** are used to create a responsive, interactive, and visually appealing interface.

2. Back End:

➢ The back end is responsible for storing, retrieving, and processing data at the base level.

➢ In this project, **PHP** is employed to manage server-side logic, handle database operations (e.g., storing flight logs or user preferences), and ensure secure data processing.

➢ It supports features like encryption for sensitive data and seamless communication between drones and remote controllers.

3. Purpose of Combining Front End and Back End

➢ The combination of these two ends ensures:

➢ The front end provides a user-friendly experience by enabling users to access various functionalities of the drone system.

➢ The back end supports secure data management, retrieval, and processing to ensure reliability during operations.

➢ By integrating HTML, CSS, React, and PHP technologies, this drone project delivers a robust system capable of handling complex interactions while maintaining secure data storage and efficient performance.

❑ **Main Programming Language:**

- ❖ Programming Language: React

❑ Different Programming Environment:

- ❖ Front end: React
- ❖ Back end: PHP

❑ Other Tools:

- ❖ HTML
- ❖ CSS
- ❖ BOOSTRAP
- ❖ JAVASCRIPT
- ❖ JSON
- ❖ API

❑ React:

➢ React is a popular JavaScript library used for building dynamic and interactive user interfaces (UIs). In this drone project, React is utilized as the **front-end technology** to create a responsive and user-friendly web application that facilitates seamless interaction between users and the drone system.

❖ Key Features of React:

1. Component-Based Architecture:

➢ React applications are built using reusable components, such as buttons, navigation bars, or dashboards.

➢ These components simplify development and enhance maintainability by avoiding repetitive code.

2. JSX (JavaScript XML):

➢ JSX allows developers to write HTML-like syntax directly within JavaScript code, making it easier to structure UI elements intuitively.

➢ This feature bridges the gap between JavaScript logic and HTML markup.

3. Virtual DOM:

➢ React employs a virtual DOM, which efficiently updates and renders changes without reloading the entire page.

➢ This ensures faster performance and smoother user experiences.

➢ **4. Scalability**:

➢ React's modular approach makes it suitable for scaling applications, such as expanding drone functionalities or integrating new features like live video streaming or GPS tracking.

❖ **Advantages of Using React in Drone Project:**

➢ **Interactive UI**: React enables the creation of visually appealing interfaces for controlling drones, viewing flight data, or managing operations.

➢ **Efficiency**: The component-based structure and virtual DOM ensure high performance, even for complex functionalities.

➢ **Cross-Platform Compatibility**: React supports rendering on both web browsers and mobile devices, ensuring accessibility across Android and iOS platforms.

By leveraging React for the front end, this drone project delivers an efficient and scalable system that enhances user interaction while maintaining robust performance.

❑ PHP:

➢ PHP (Hypertext Preprocessor) is a widely-used server-side scripting language designed for web development. In this drone project, PHP serves as the **back-end technology**, responsible for managing server-side operations, data processing, and database interactions.

❖ **Key Features of PHP:**

1. Dynamic Web Page Generation:

➢ PHP enables the creation of dynamic web pages that can respond to user inputs in real-time, making it ideal for applications requiring frequent updates, such as live flight data or user commands for drone operations.

2. Database Integration:

➢ PHP seamlessly connects with various databases (e.g., MySQL) to store and retrieve data efficiently.

➢ This is crucial for managing operational data, user preferences, and flight logs within the drone system.

3. Server-Side Processing:

➢ As a server-side language, PHP processes requests from the front end and returns the appropriate responses.

➢ It handles tasks like user authentication, data validation, and secure data storage.

4. Cross-Platform Compatibility:

➢ PHP runs on various platforms (Windows, Linux, macOS), making it versatile for deployment in different environments.

Advantages of Using PHP in Drone Project:

1. Ease of Use: PHP's straightforward syntax allows developers to quickly implement features and functionalities without extensive overhead.

2. Robust Community Support: A large community of developers provides extensive resources, libraries, and frameworks that can enhance the functionality of the drone application.

3. Security Features: PHP includes built-in security features to protect against common vulnerabilities (e.g., SQL injection), ensuring that sensitive user data is handled securely.

➢ By leveraging PHP for the back end, this drone project can efficiently manage data processing and storage while providing a reliable foundation for the application's operational needs.

➢ This integration ensures that users have a seamless experience when interacting with the drone system through the front-end interface built with HTML, CSS, and React.

❖ **APIs:**

➢ An application programming interface (API) is a way for two or more computer programs to communicate with each other.

➢ It is a type of software interface, that offers a service to other pieces of software. A document or standard that describes how to build or use such a connection or interface is called an API specification.

➢ A computer system that meets this standard is said to implement or expose an API.

➢ The term API may refer either to the specification or to the implementation.

➢ In contrast to a user interface, which connects a computer to a person, an application programming interface connects computers or pieces of software to each other.

➢ It is not intended to be used directly by a person (the end-user) other than a computer programmer who is incorporating it into the software.

➢ An API is often made up of different parts which act as tools or services that are available to the programmer.

➢ A program or a programmer that uses one of these parts is said to call that portion of the API. The calls that make up the API are also known as subroutines, methods, requests, or endpoints.

➢ An API specificationdefines these calls, meaning that it explains how to use or implement them.

➢ One purpose of APIs is to hide the internal details of how a system works, exposing only those parts a programmer will find useful and keeping them consistent even if the internal details later change.

➢ An API may be custom-built for a particular pair of systems, or it may be a shared standard allowing interoperability among many systems.

❖ JSON:

➢ JSON (JavaScript Object Notation, pronounced) is an open standard file format and data interchange format that uses human-readable text to store and transmit data objects consisting of attribute–valuepairs and arrays (or other serializable values).

➢ It is a common data format with diverse uses in electronic data interchange, including that of web applications with servers.

➢ JSON is a language-independent data format. It was derived from JavaScript, but many modern programming languages include code to generate and parse JSON-format data. JSON filenames use the extension. json. Any valid JSON file is a valid JavaScript (.js) file, even though it makes no changes to a web page on its own.

➢ Douglas Crockford originally specified the JSON format in the early 2000s. He and Chip Morningstar sent the first JSON message in April 2001.

❖ HTML:

➢ HTML (HyperText Markup Language) is the fundamental building block of web development, responsible for structuring and displaying content in a web browser.

➢ In this drone project, HTML is used to design the front-end interface, ensuring users can interact seamlessly with the drone system.

❖ Key Features of HTML

1. Web Page Structuring:

➢ HTML provides a structured format for displaying drone-related information, including flight status, live camera feeds, and control options.

➢ It helps in organizing content using headings, paragraphs, lists, and tables.

2. Forms for User Interaction:

➢ HTML forms enable users to input commands for controlling drones, such as setting waypoints, adjusting speed, or capturing images.

➢ Input elements like buttons, checkboxes, and text fields improve user experience.

3. Integration with CSS and JavaScript:

➢ HTML works seamlessly with CSS for styling and JavaScript for dynamic functionalities, making the drone interface visually appealing and interactive.

➢ Enhances real-time updates for drone status and navigation.

4. Cross-Browser Compatibility:

➢ HTML is compatible with all modern web browsers, ensuring accessibility for users on different devices, including desktops, tablets, and smartphones.

❖ **Advantages of Using HTML in Drone Project:**

1. Ease of Development:

➢ HTML is easy to learn and implement, making the development of drone-based web applications faster and more efficient.

2. Seamless User Interface:

➢ Provides a clean and structured front-end that allows users to interact smoothly with the drone control system.

3. Lightweight and Fast Loading:

➢ HTML pages are lightweight and load quickly, ensuring an efficient experience for drone operators.

4. Supports Multimedia:

➢ HTML supports embedding videos, images, and live drone camera feeds, enhancing user engagement.

❖ CSS:

➢ CSS (Cascading Style Sheets) is essential for styling the front-end of the drone application, ensuring an engaging and visually appealing user experience.

❖ Key Features of CSS

1. Enhanced User Interface Design:

➢ CSS allows for styling HTML elements, making the drone system interface visually attractive and user-friendly.
➢ Custom fonts, colors, buttons, and layouts improve the overall design.

2. Responsive Web Design: **:**

➢ CSS media queries enable the drone interface to adapt to different screen sizes, ensuring compatibility across mobile, tablet, and desktop devices.

3. Animations & Transitions:

➢ CSS animations enhance user interaction, such as hover effects, smooth transitions, and loading indicators for real-time drone data.

4. Grid and Flexbox Layouts:

➢ Ensures proper alignment and organization of drone-related data, such as flight logs, live video feeds, and control buttons.

❖ **Advantages of Using CSS:**

1. Improved User Experience: Creates a visually appealing interface that enhances usability.

2. Faster Page Load: External CSS files reduce inline styling, making web pages load faster.

3. Better Maintainability: Styles can be updated easily without modifying HTML.

4. Cross-Browser Support: Ensures a consistent experience across different web browsers.

❖ JavaScript:

➢ JavaScript (JS) is the core programming language used for client-side interactivity, enhancing real-time communication and dynamic functionalities.

❖ **Key Features of JavaScript:**

1. Real-Time Drone Data Updates:

➢ JavaScript enables live data updates for drone flight statistics, altitude, and speed.

➢ AJAX and WebSockets can be used for real-time communication between the drone and the web application.

2. User Interaction and Controls:

➢ JavaScript handles user inputs, such as takeoff, landing, and direction commands through buttons or joystick interfaces.

3. API Integration:

➢ Allows integration with third-party drone APIs to fetch real-time GPS locations, weather conditions, and flight paths.

4. Event Handling & Form Validation:

➢ JavaScript ensures smooth event-driven interactions like button clicks, keyboard inputs, and error handling for user input validation.

5. Dynamic UI Manipulation:

➢ Enables content updates without refreshing the page (e.g., updating drone status without reloading).

❖ Advantages of Using JavaScript:

➢ **Enhanced Interactivity:** Provides dynamic and responsive interactions for controlling the drone.

➢ **Fast Processing:** JavaScript executes within the browser, reducing server load.

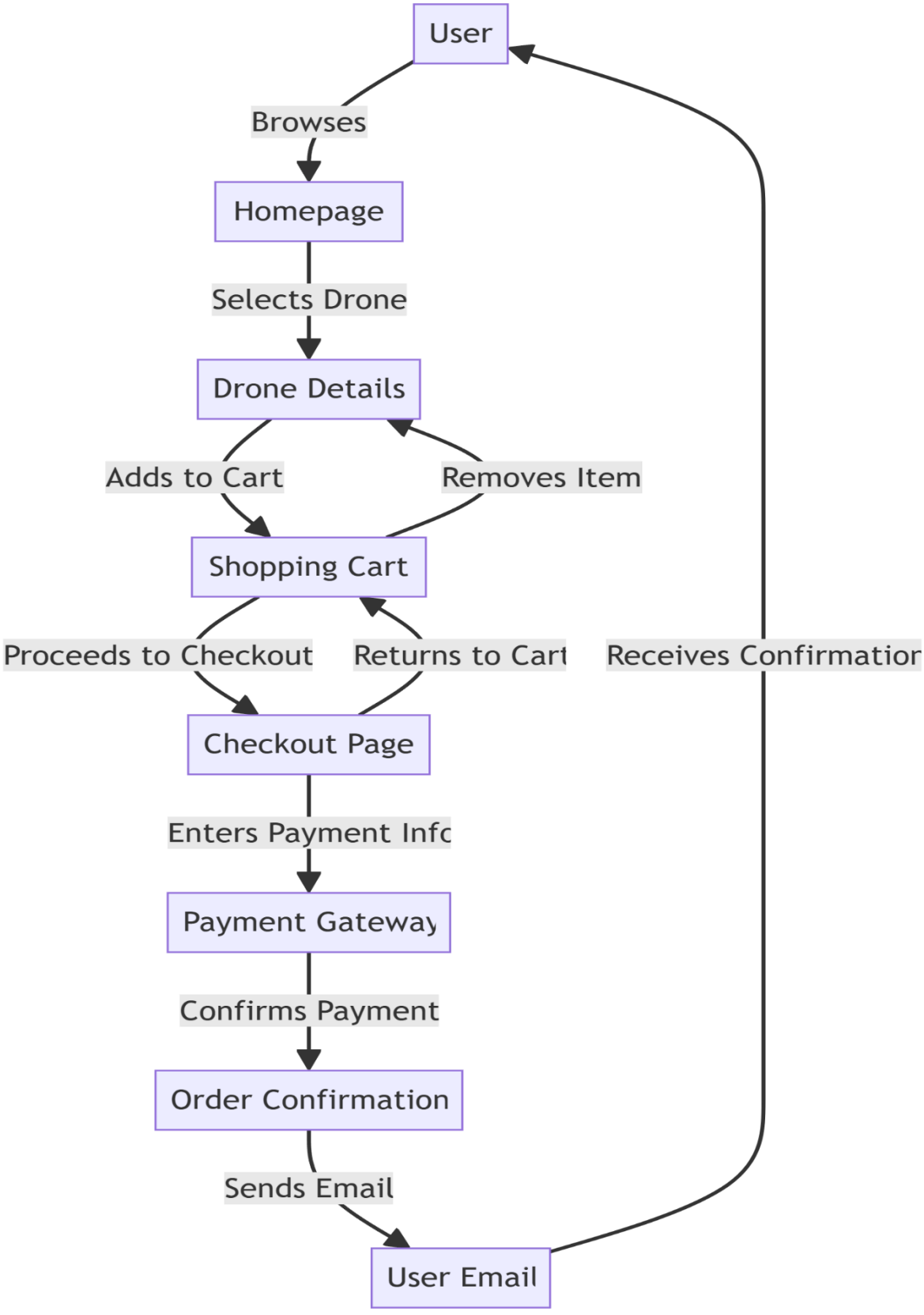
➢ **Seamless Integration:** Works with APIs, databases, and other technologies.

➢ **Improved Performance:** Asynchronous programming ensures smooth operations without delays.

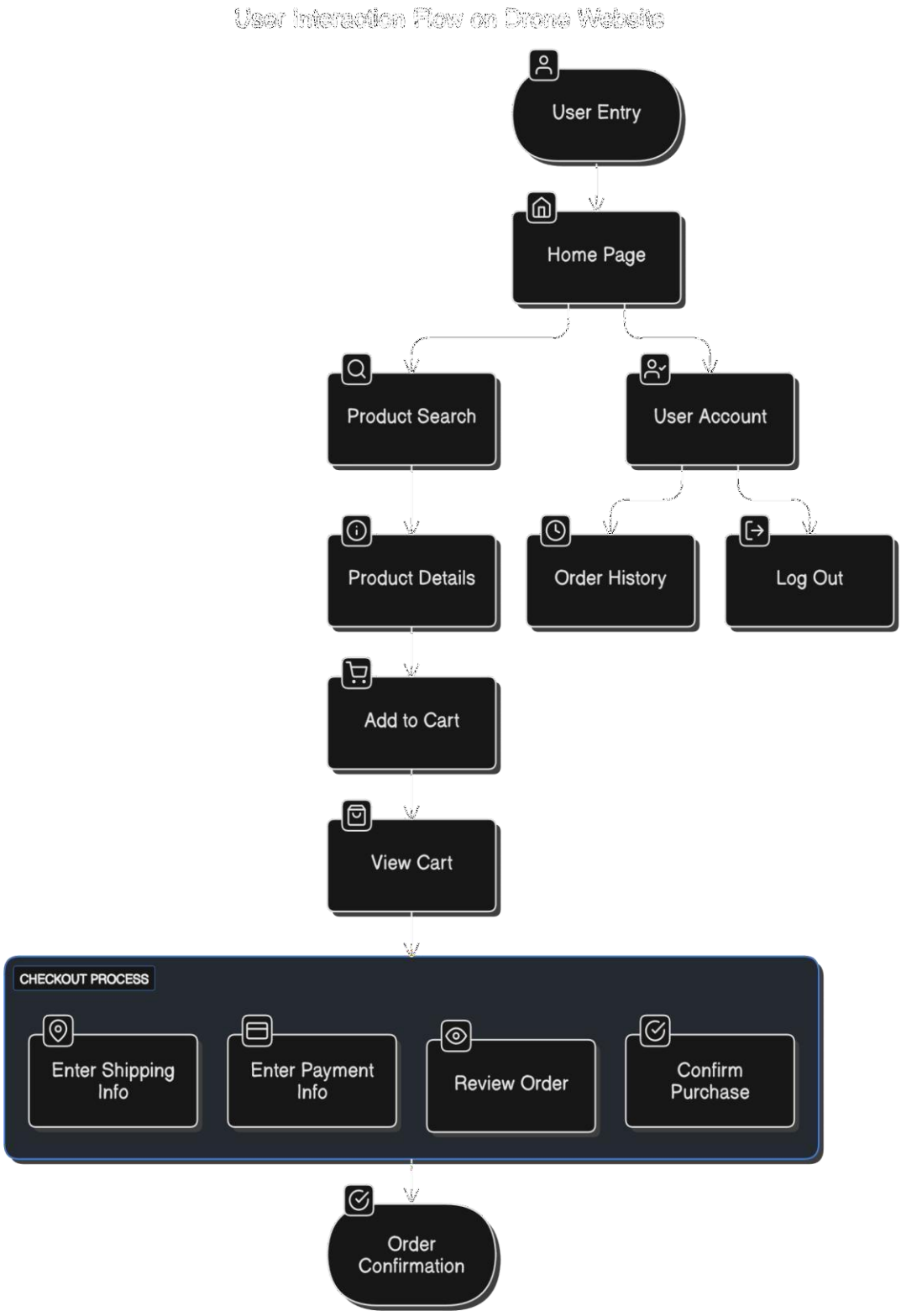
3. Designing

3.1 Data Flow Diagram

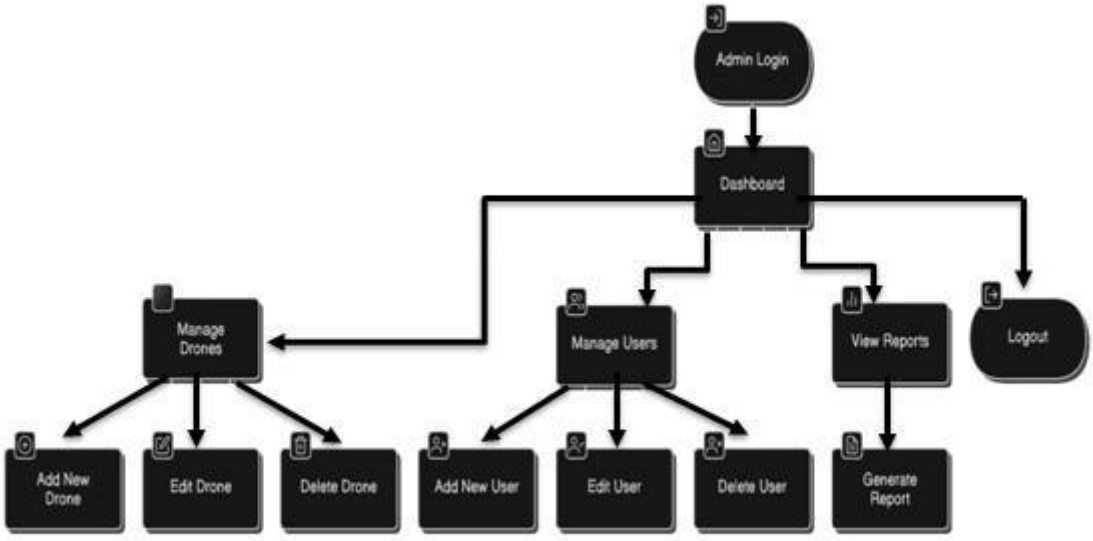
❖ **Context Level Data flow diagram (Level - 0):**



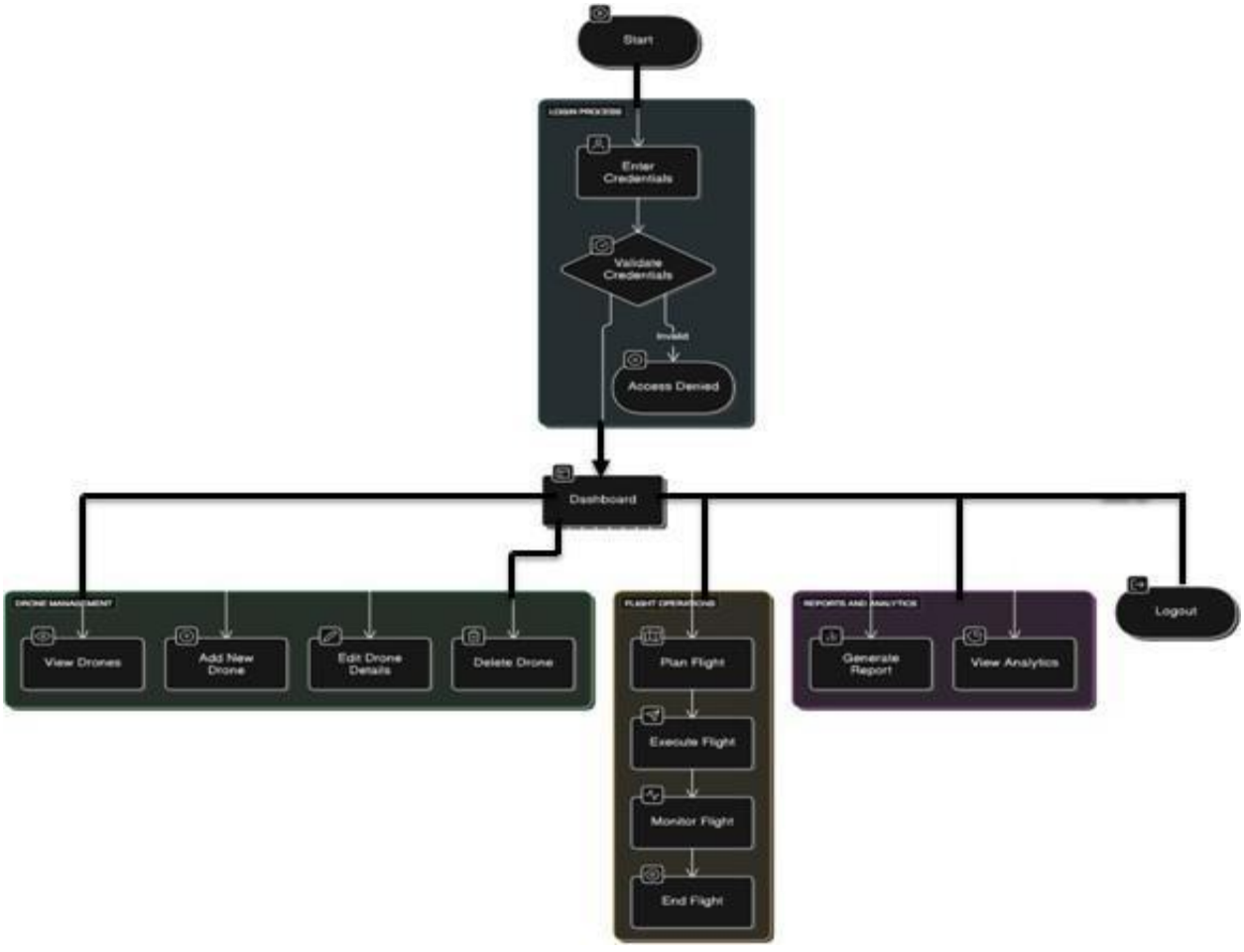
❖ **1st Level Data Flow Diagram: User Side**



❖ **2st Level Data Flow Diagram: Group Admin Side**

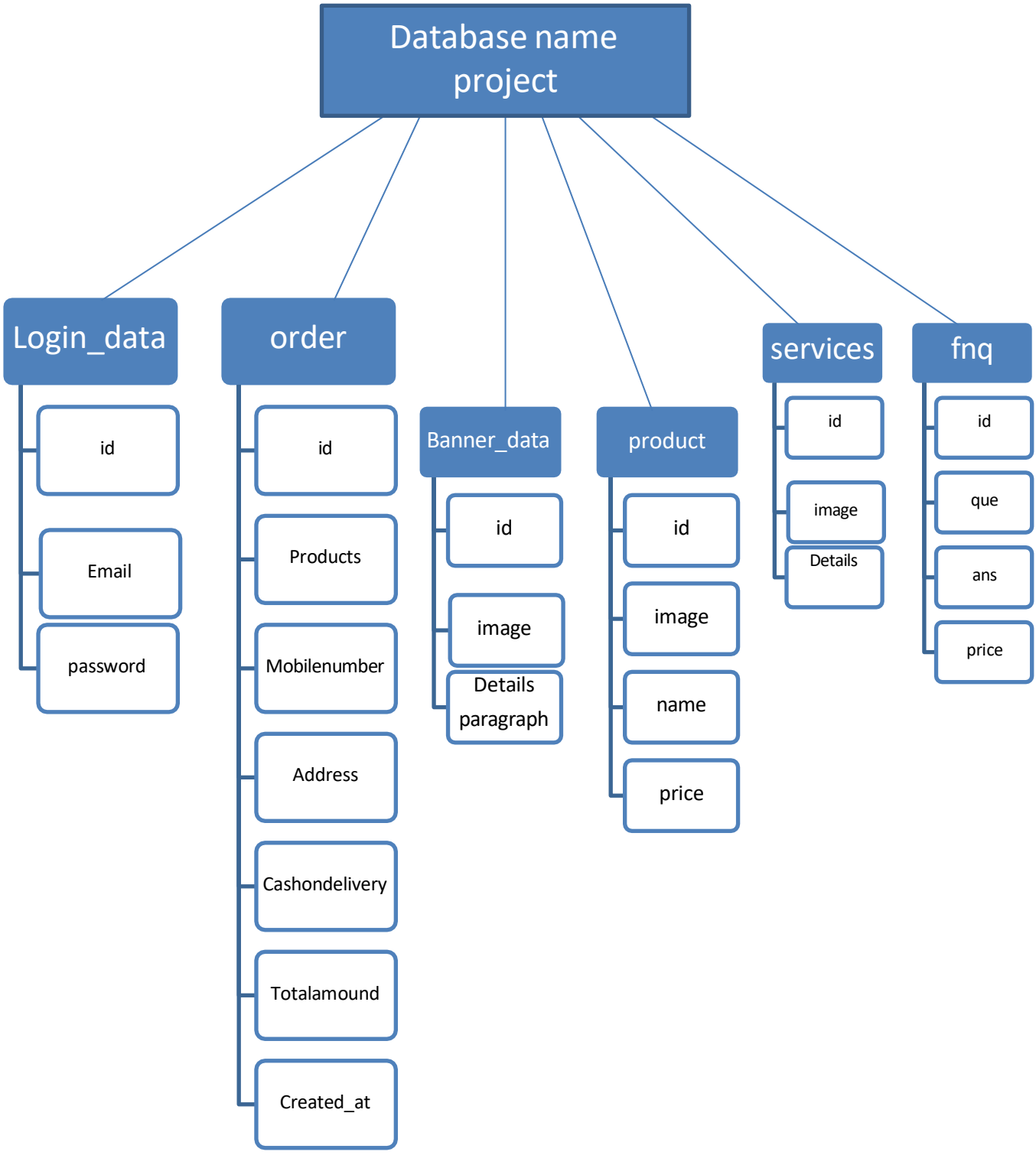


❖ **3rd Level Data Flow Diagram: Group Members Side**



3.2 Database Design

❖ **Database Design:**



3.3 Data Dictionary

Databse Name: *project*

Table Name: *login_data*

Description: *This Table contains all data of user.*

FIELD NAME	FIELD TYPE	DESCRIPTION
id<<PK>	Int	To Store Document ID
email	Varchar	To Store User Email
password	Varchar	To Store User Password

Example:-

Id	Email	Password
1	admin@gmail.com	admin@123

Table Name: *order*

Description: *This table contains all data of user order.*

FIELD NAME	FIELD TYPE	DESCRIPTION
id<<PK>>	Int	To Store Order ID
products	Varchar	To Store Products Information like name, price, image
mobileNumber	Int	To Store User Mobile Number
email	Varchar	To Store User Email
address	Varchar	To Store User Address
cashOnDelivery	tinyint	To Store transaction method
totalAmount	decimal	To Store transaction Amount
Created_at	Int	To Store

Example:-

Id	Products	Mobile number	Email	Address
1	Drone,2500,p1	4125639870	admin@gmail.com	xyc

Cash On Delivery	Total Amount	Created-at
1	2500	42698562

Table Name: *product*

Description: *This table contains all data of user purchase a product.*

FIELD NAME	FIELD TYPE	DESCRIPTION
id<<PK>>	Int	To Store Product Id
Image	Varchar	To Store Product Image
name	Varchar	To Store Product Name
price	Varchar	To Store Product Price

Example:-

Id	Image	Name	Price
1	p.Jpg	Drone1	1500

Table Name: service_data

Description: *This table contains data of provide our services.*

FIELD NAME	FIELD TYPE	DESCRIPTION
id<<PK>>	Int	To Store Service Data Id
image	Varchar	To Store Service Image
details	Varchar	To Store Service Details

Example:-

Id	Image	Details
1	P1.jpg	2 year repaire product free

Table Name: *fnq*

Description: *This table contains data of FNQ.*

FIELD NAME	FIELD TYPE	DESCRIPTION
Id<<PK>>	Int	To Store Fnq Id
que	Varchar	To Store Question Details
ans	Varchar	To Store Answer Details

Example:-

Id	Que	Ans
1	Xyzz	Dbdc

Table Name: *banner_data*

Description: *This table contains data of Banner details.*

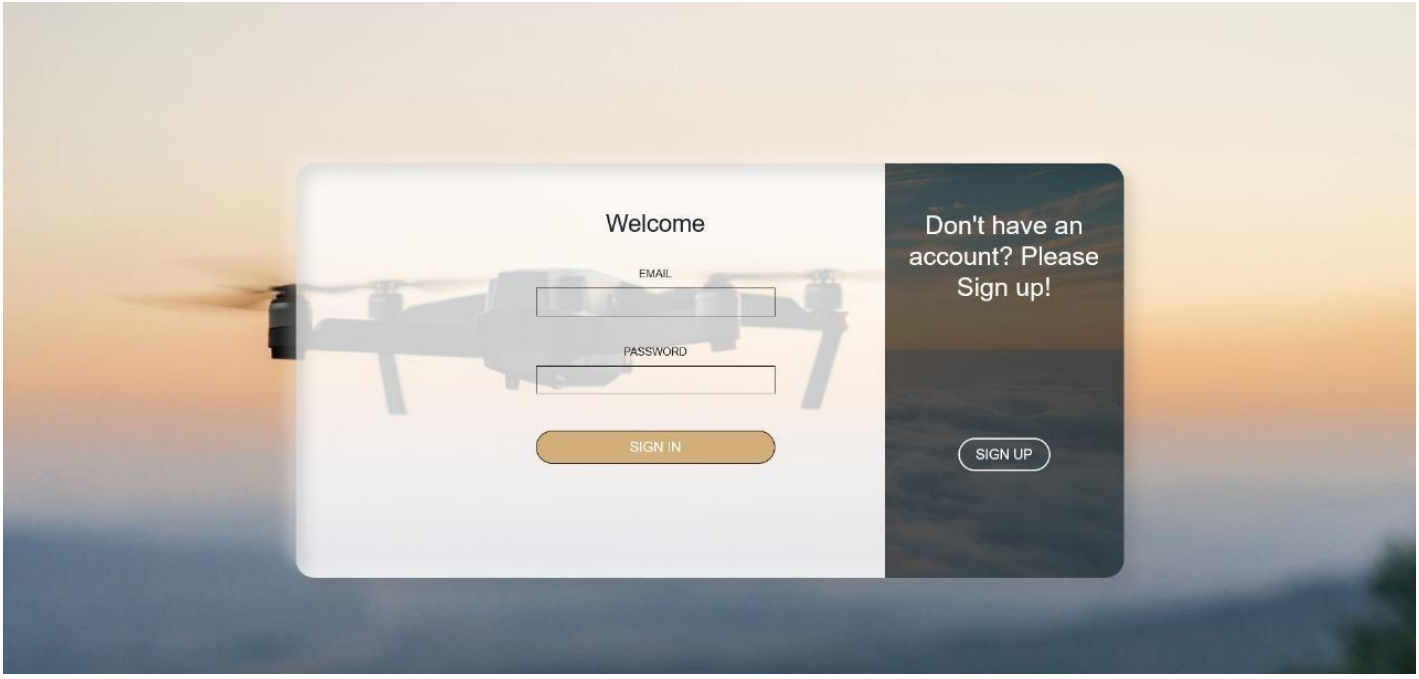
FIELD NAME	FIELD TYPE	DESCRIPTION
Id<<PK>>	Int	To Store Banner Id
image	Varchar	To Store Banner Image
details	Varchar	To Store Banner Details
paragraph	Varchar	To Store Banner Paragraph

Example:-

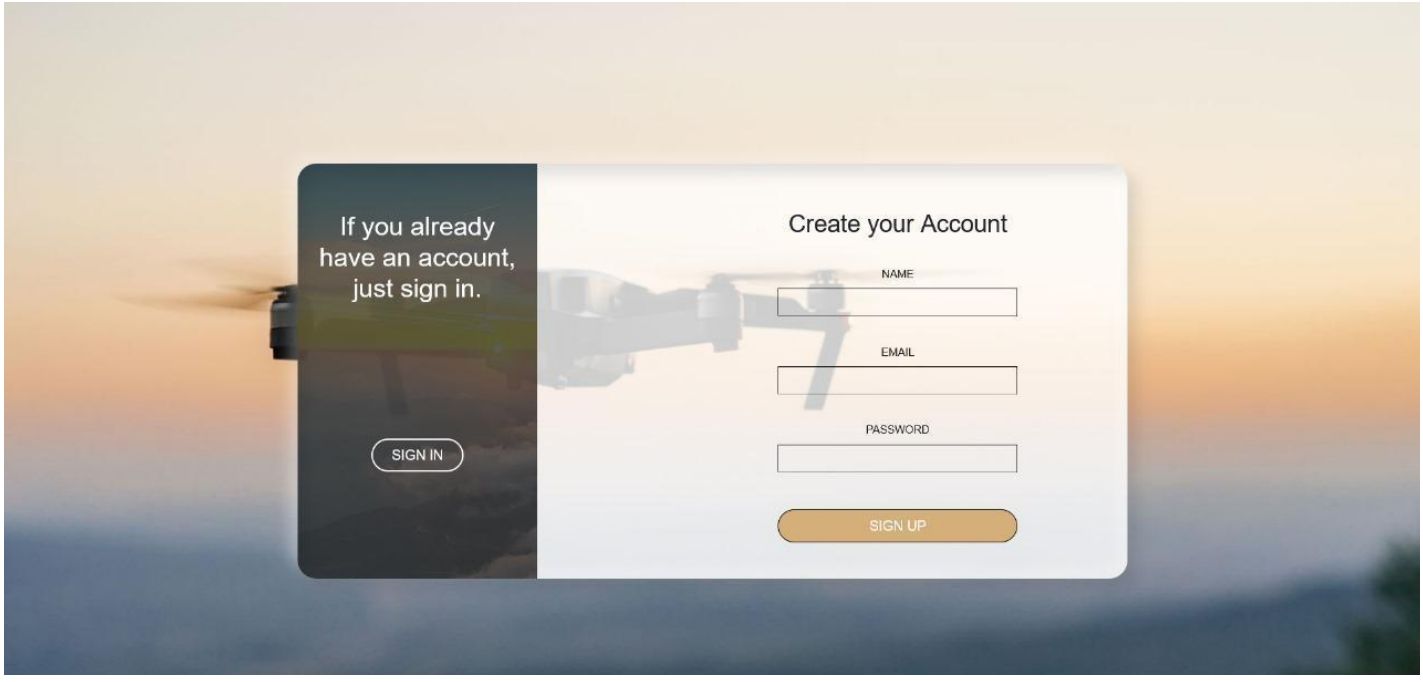
Id	Image	Details	Paragraph
1	B1.jpg	Banner1	Banner is good

3.4 User Interface

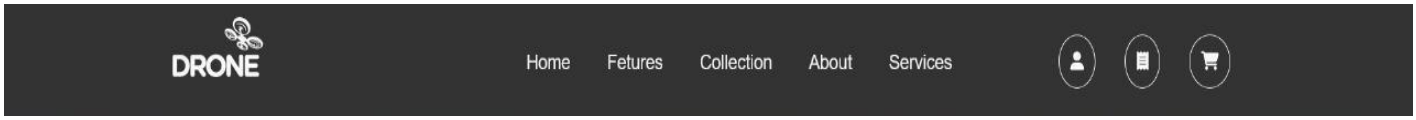
❖ **Sign In:**



❖ **Sign up:**



- **Header:**

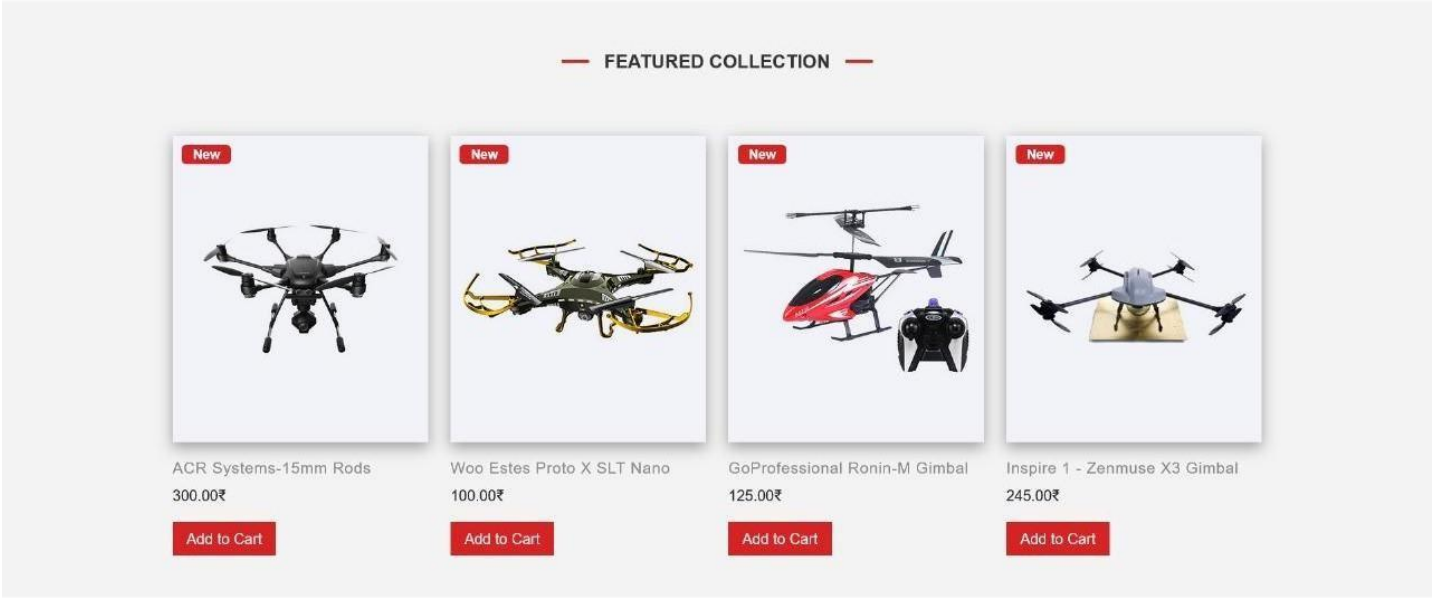


- **Banner:**

— You Will Love It. —

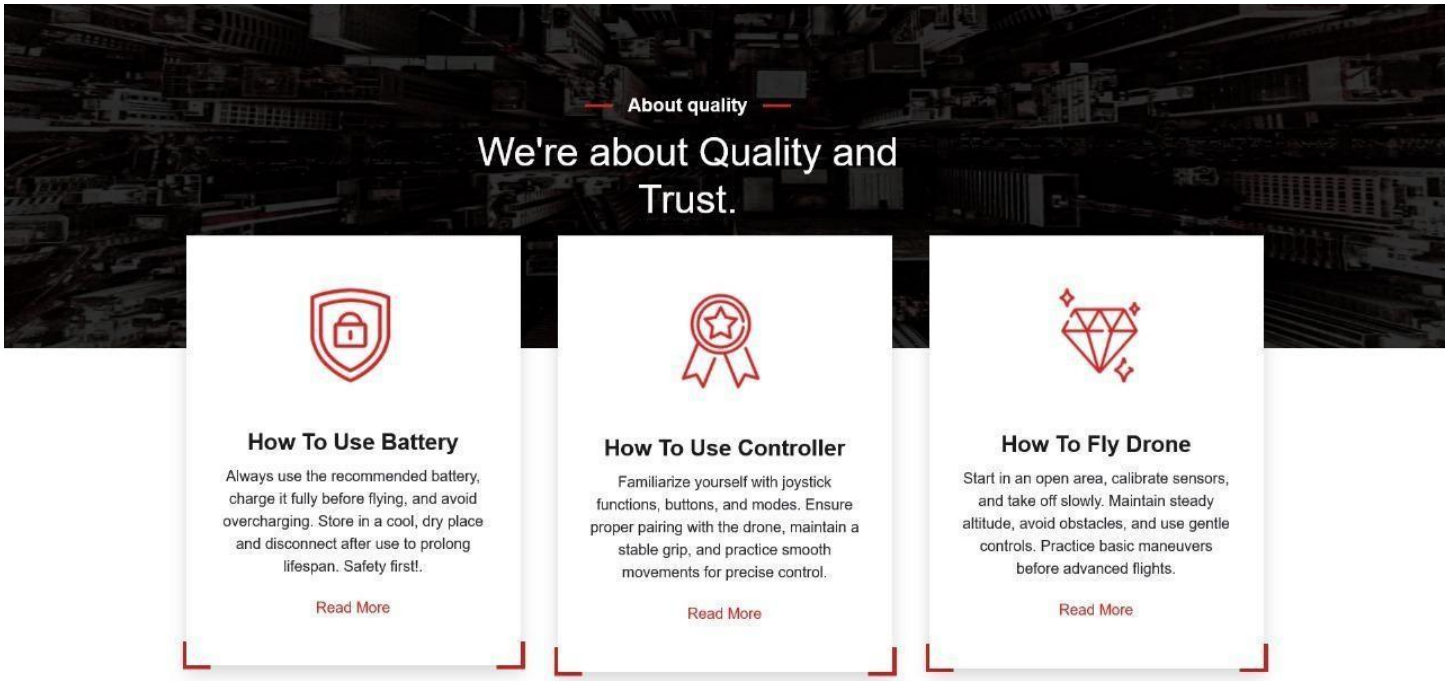
- **How it works:**

❖ Product:

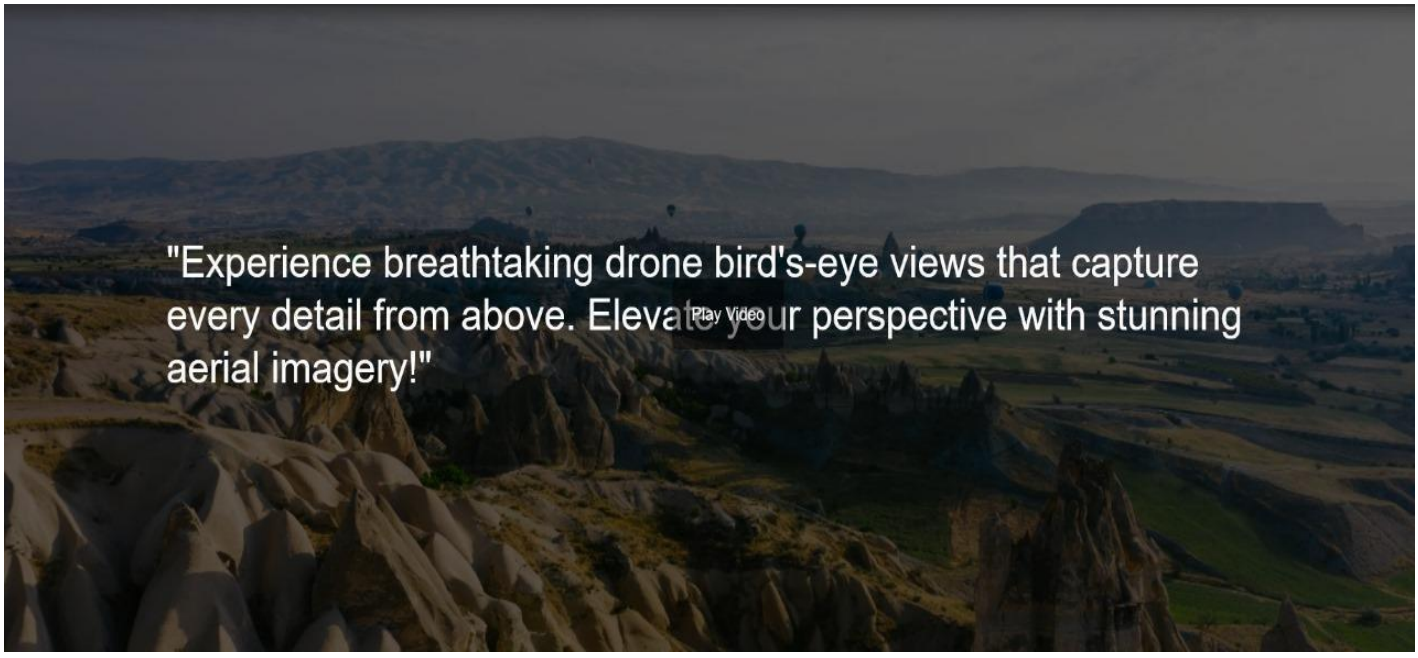


❖ Visibility:

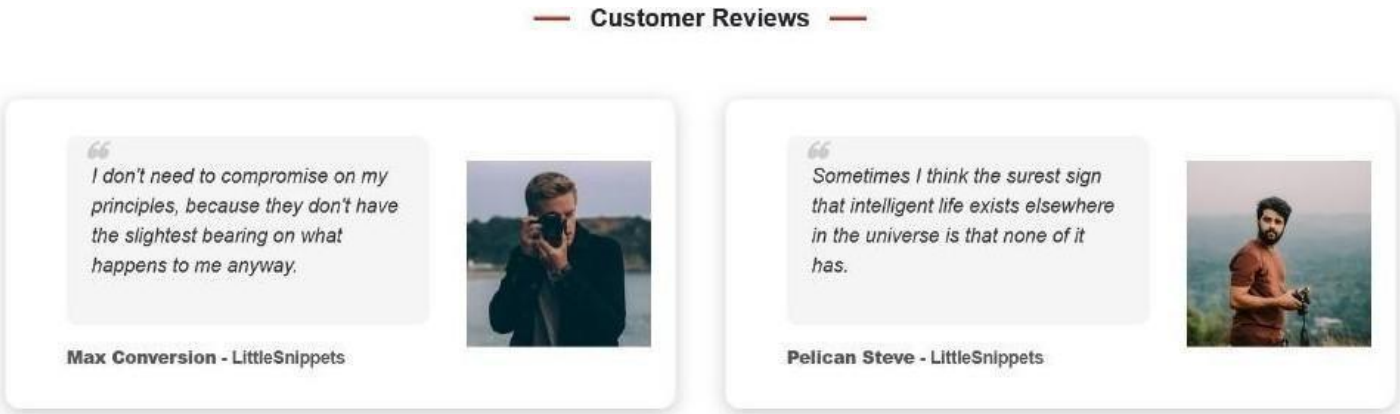
❖ About:


About quality
We're about Quality and Trust.
How To Use Battery
Always use the recommended battery, charge it fully before flying, and avoid overcharging. Store in a cool, dry place and disconnect after use to prolong lifespan. Safety first!.
Read More
How To Use Controller
Familiarize yourself with joystick functions, buttons, and modes. Ensure proper pairing with the drone, maintain a stable grip, and practice smooth movements for precise control.
Read More
How To Fly Drone
Start in an open area, calibrate sensors, and take off slowly. Maintain steady altitude, avoid obstacles, and use gentle controls. Practice basic maneuvers before advanced flights.
Read More

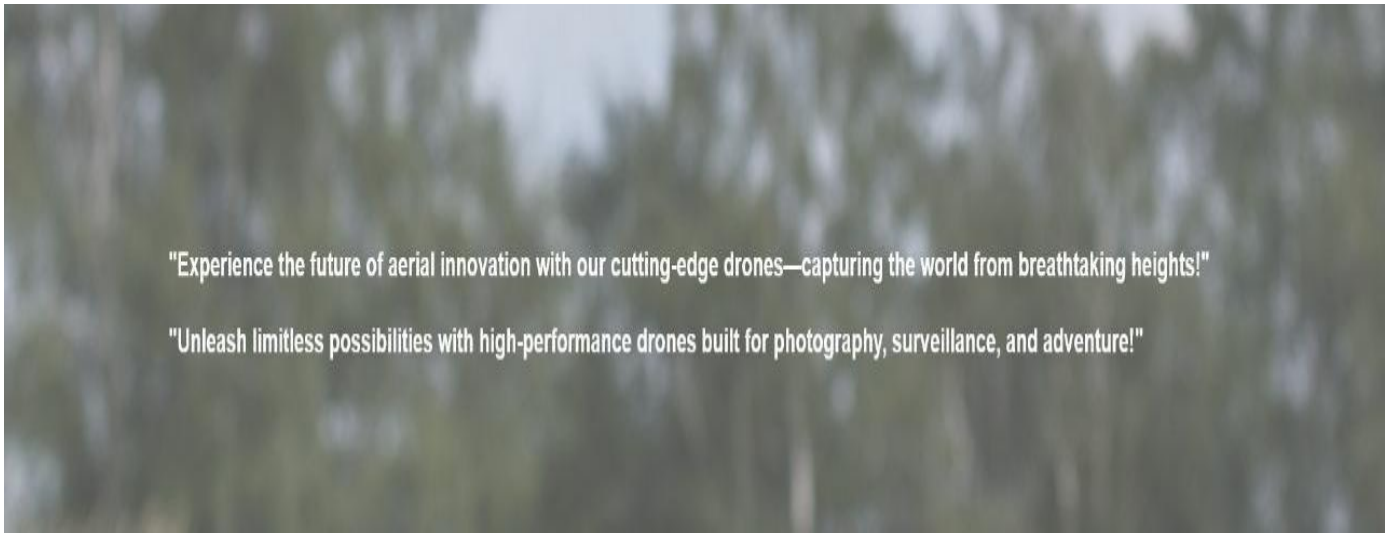
❖ Video:


"Experience breathtaking drone bird's-eye views that capture every detail from above. Elevate your perspective with stunning aerial imagery!"
Play Video

❖ Customer Reviews:



❖ Parallux:



- **Q & N:**

QUESTIONS & ANSWERS

POPULAR QUESTIONS ABOUT OUR DRONE LINEUP

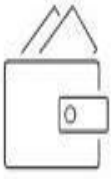
What is the most popular type of drone?

Which drone has greatest range?

Are drones a robot?

- **Q & N**
- **Services:**

Free Shipping Over $100

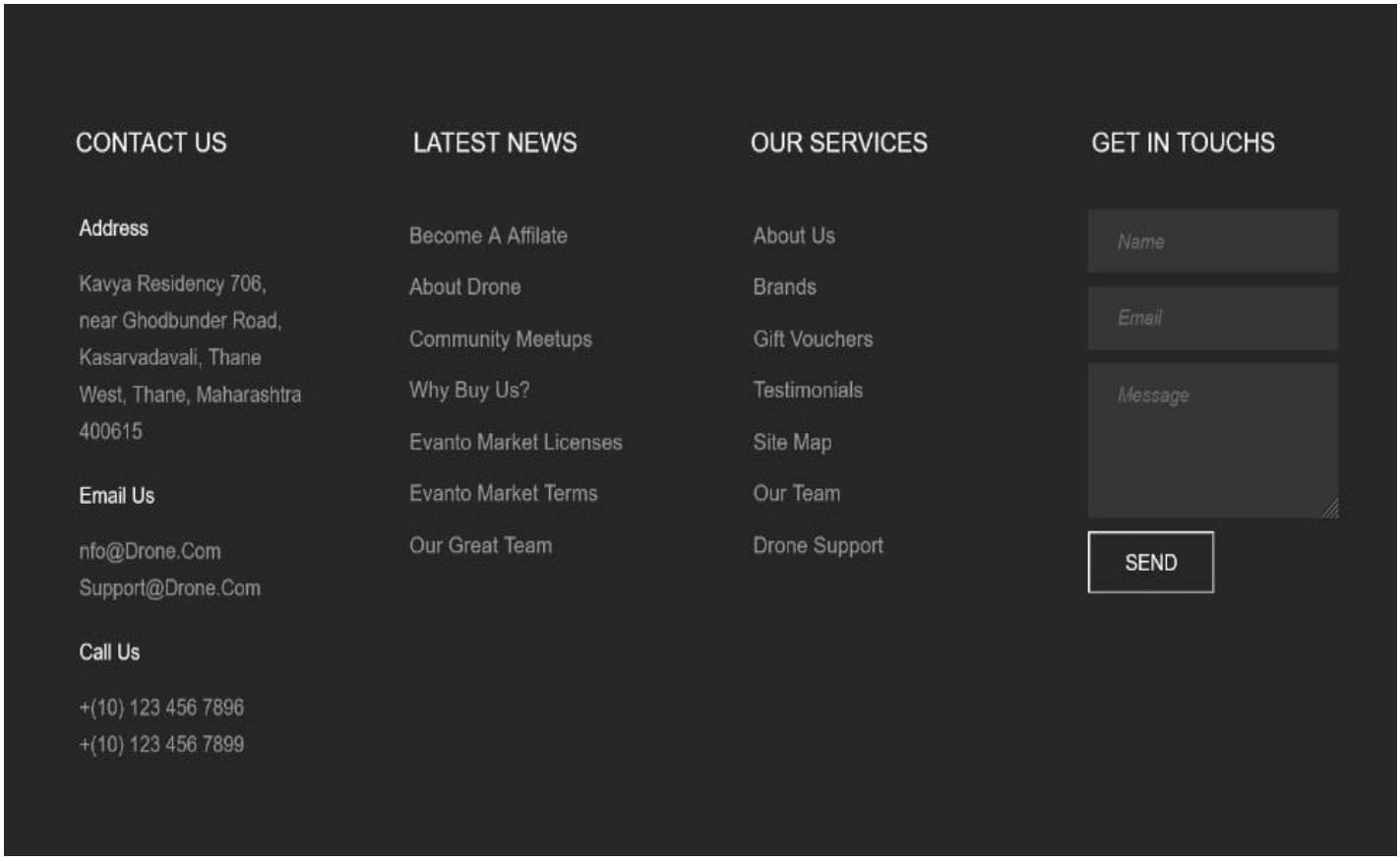


Money Back Guaratee

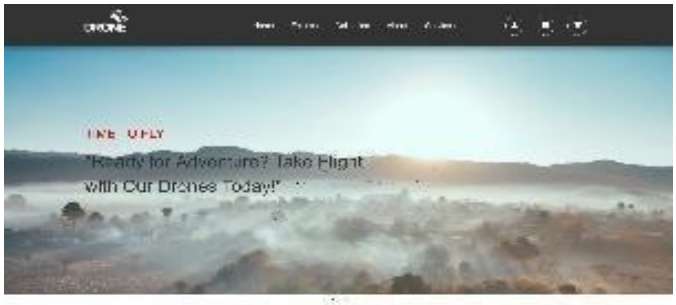
Dedicated Service Team

Online Support 24/7

- **Footer:**


CONTACT US
Address
Kavya Residency 706,
near Ghodbunder Road,
Kasarvadavali, Thane
West, Thane, Maharashtra
400615
Email Us
nfo@Drone.Com
Support@Drone.Com
Call Us
+(10) 123 456 7896
+(10) 123 456 7899
LATEST NEWS
Become A Affilate
About Drone
Community Meetups
Why Buy Us?
Evanto Market Licenses
Evanto Market Terms
Our Great Team
OUR SERVICES
About Us
Brands
Gift Vouchers
Testimonials
Site Map
Our Team
Drone Support
GET IN TOUCHS
Name
Email
Message
SEND

- **Full Home Page:**



❖ Your Order:

DRONE

Home Fetures Collection About Services

ID	Product	Email	Mobile Number	Total Amount	Address	Status
1		admin@gmail.com	6351793925	₹400.00	27,srushti row house	Pending
4		admin@gmail.com	6351793925	₹725.00	27,srushti row huse	Pending

CONTACT US

Address

Kavya Residency 706,
near Ghodbunder Road,
Kasarvadavali, Thane
West, Thane, Maharashtra
400615

Email Us

nfo@Drone.Com
Support@Drone.Com

Call Us

+(10) 123 456 7896
+(10) 123 456 7899

LATEST NEWS

Become A Affilate
About Drone
Community Meetups
Why Buy Us?
Evanto Market Licenses
Evanto Market Terms
Our Great Team

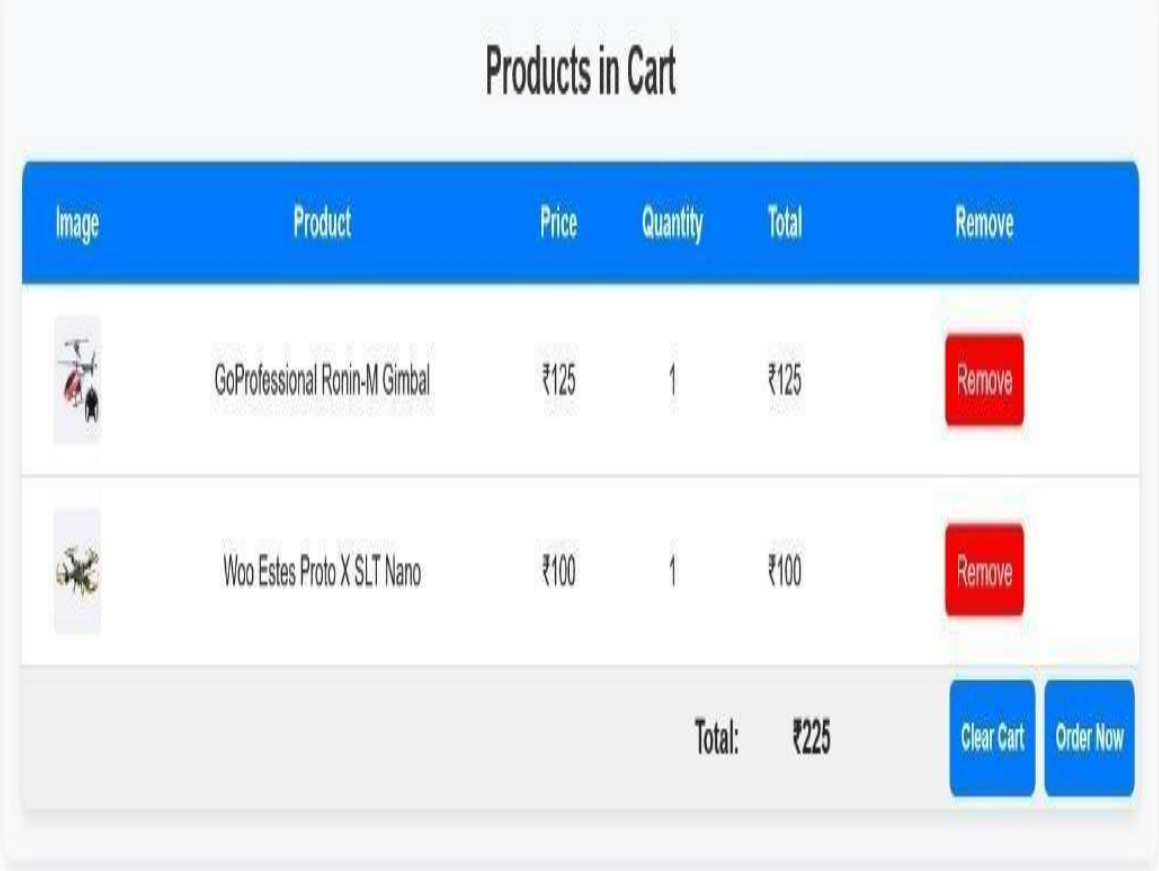
OUR SERVICES

About Us
Brands
Gift Vouchers
Testimonials
Site Map
Our Team
Drone Support

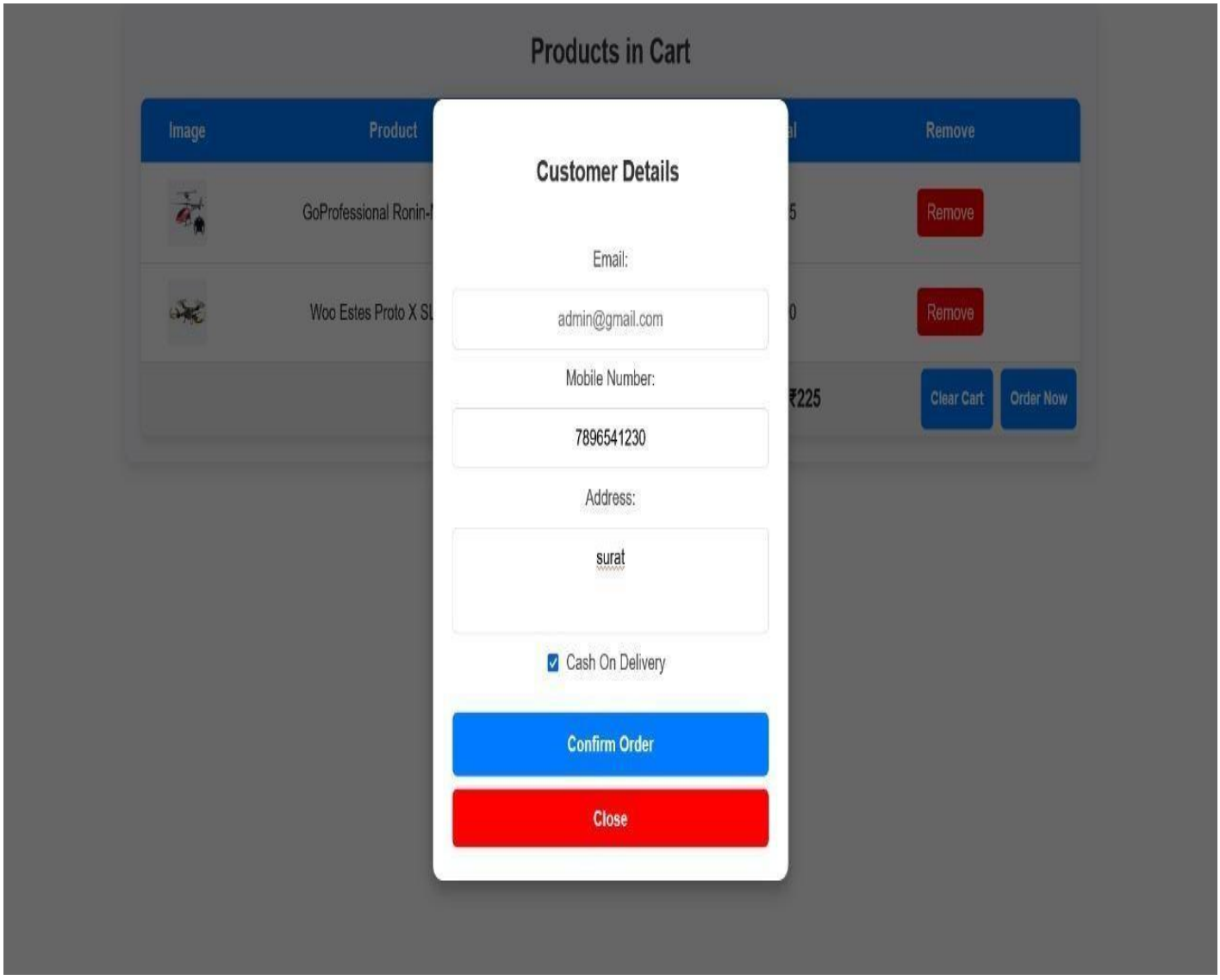
GET IN TOUCHS

Name
Email
Message
SEND

❖ Cart:

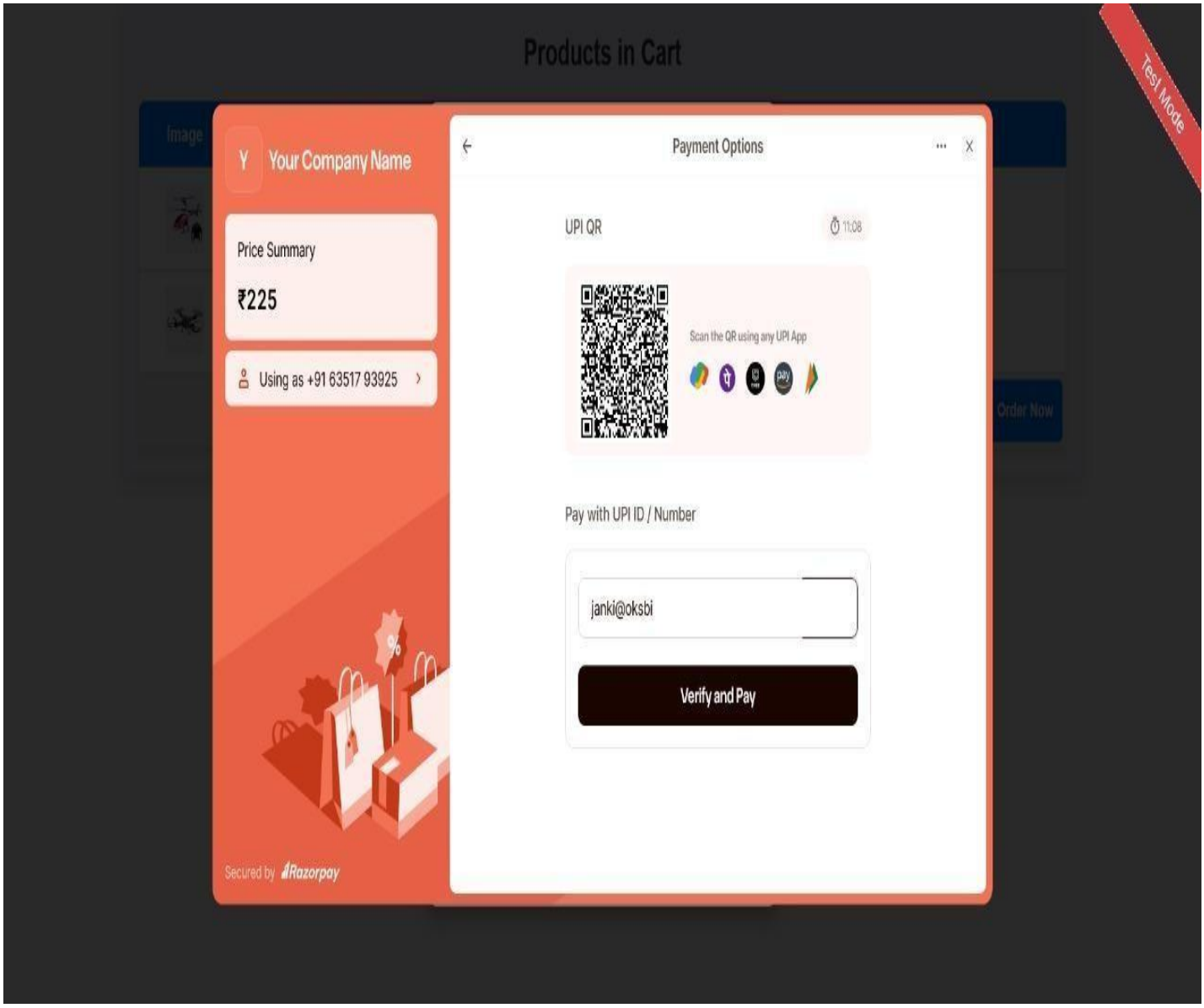

Products in Cart
Image
Product
Price
Quantity
Total
Remove
GoProfessional Ronin-M Gimbal
₹125
1
₹125
Remove
Woo Estes Proto X SLT Nano
₹100
1
₹100
Remove
Total:
₹225
Clear Cart
Order Now

- **Place Order As Cash On Delivery:**



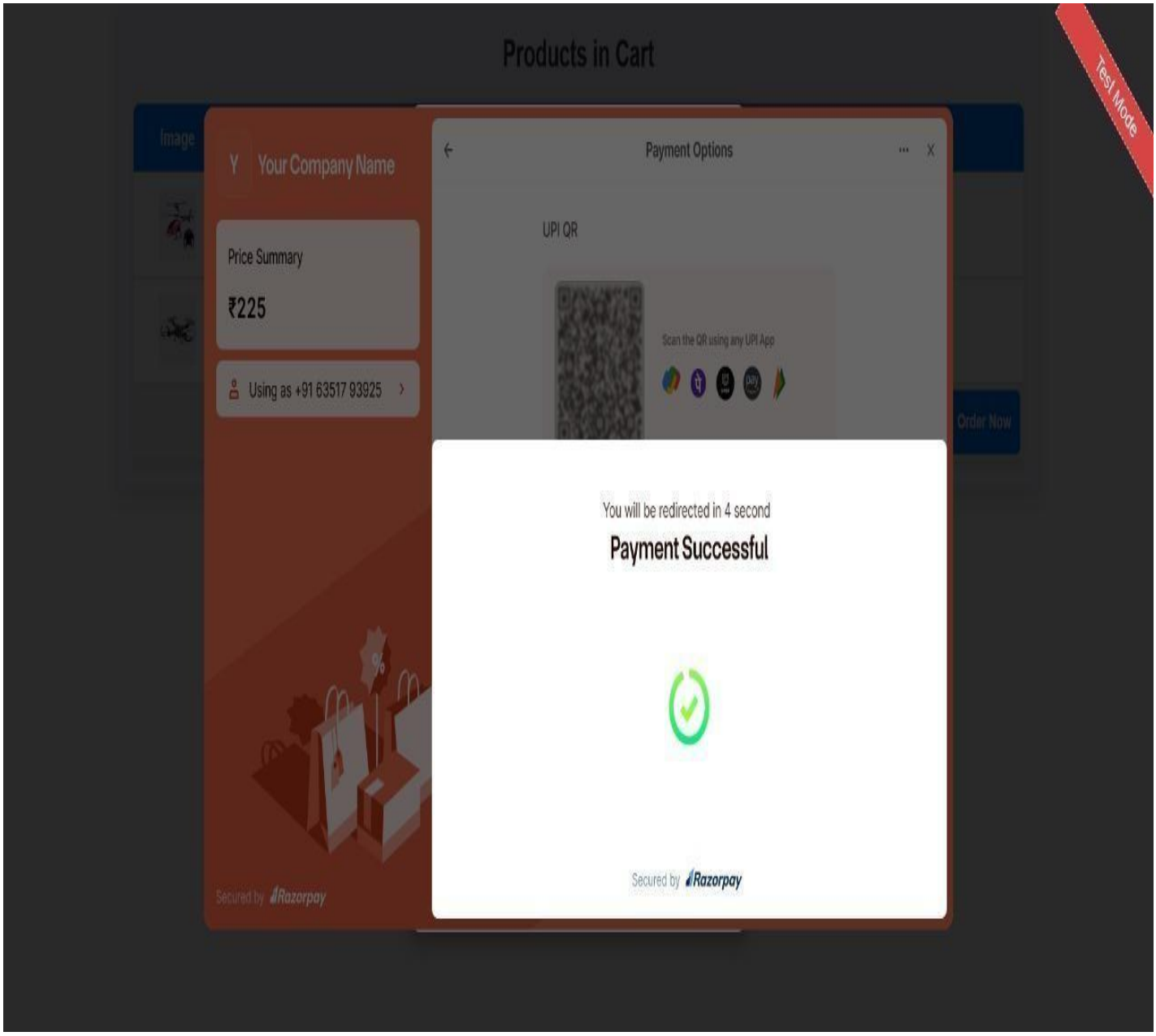
❖ Place Order With Razorpay (Online Payment) :

❖ Step One:



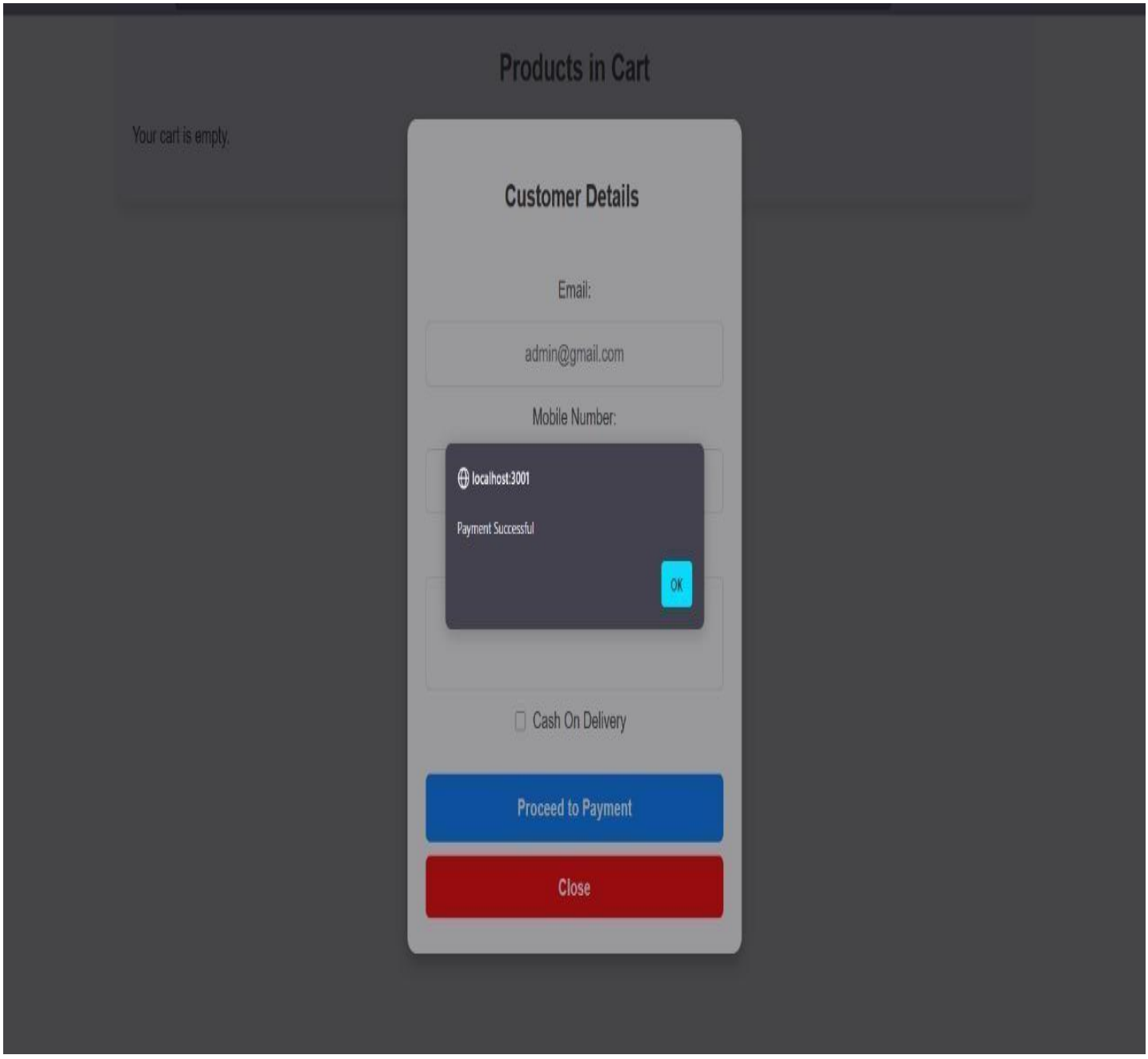
❖ Place Order With Razorpay (Online Payment) :

❖ Step Two:



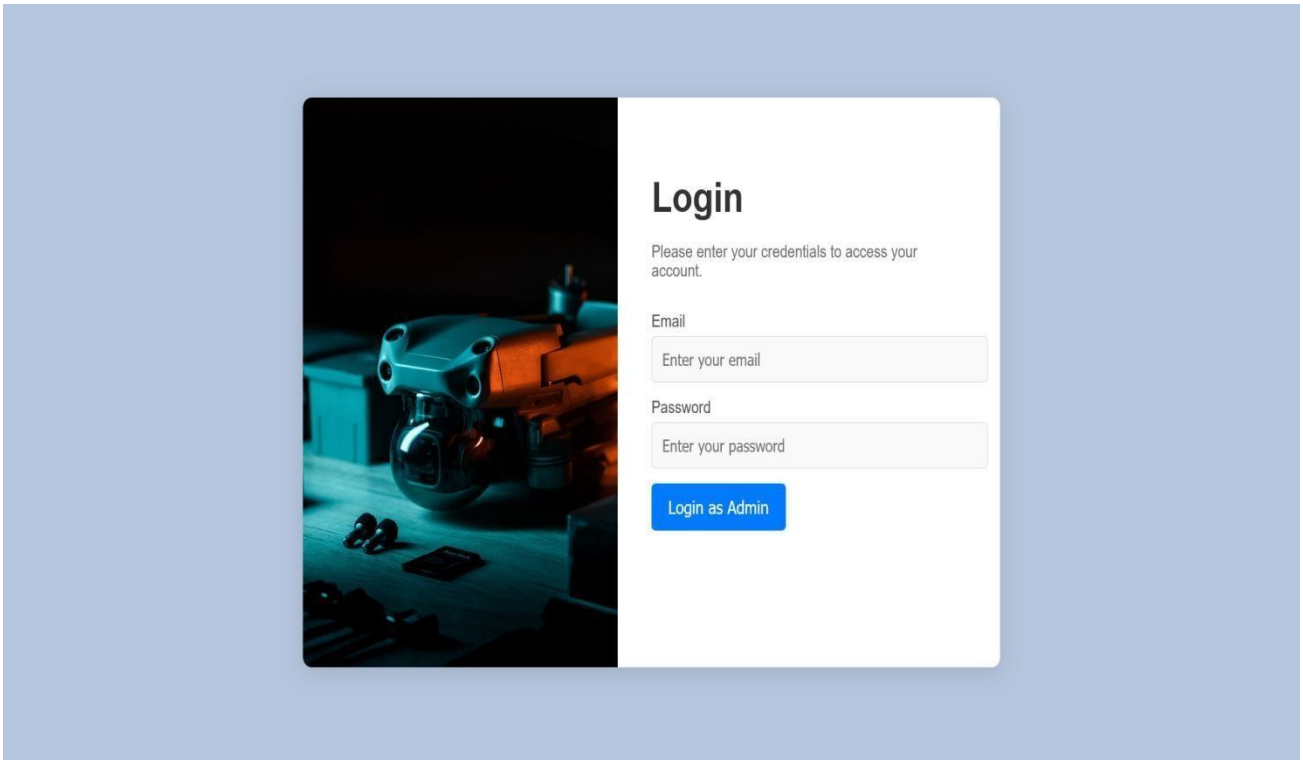
❖ Place Order With Razorpay (Online Payment) :

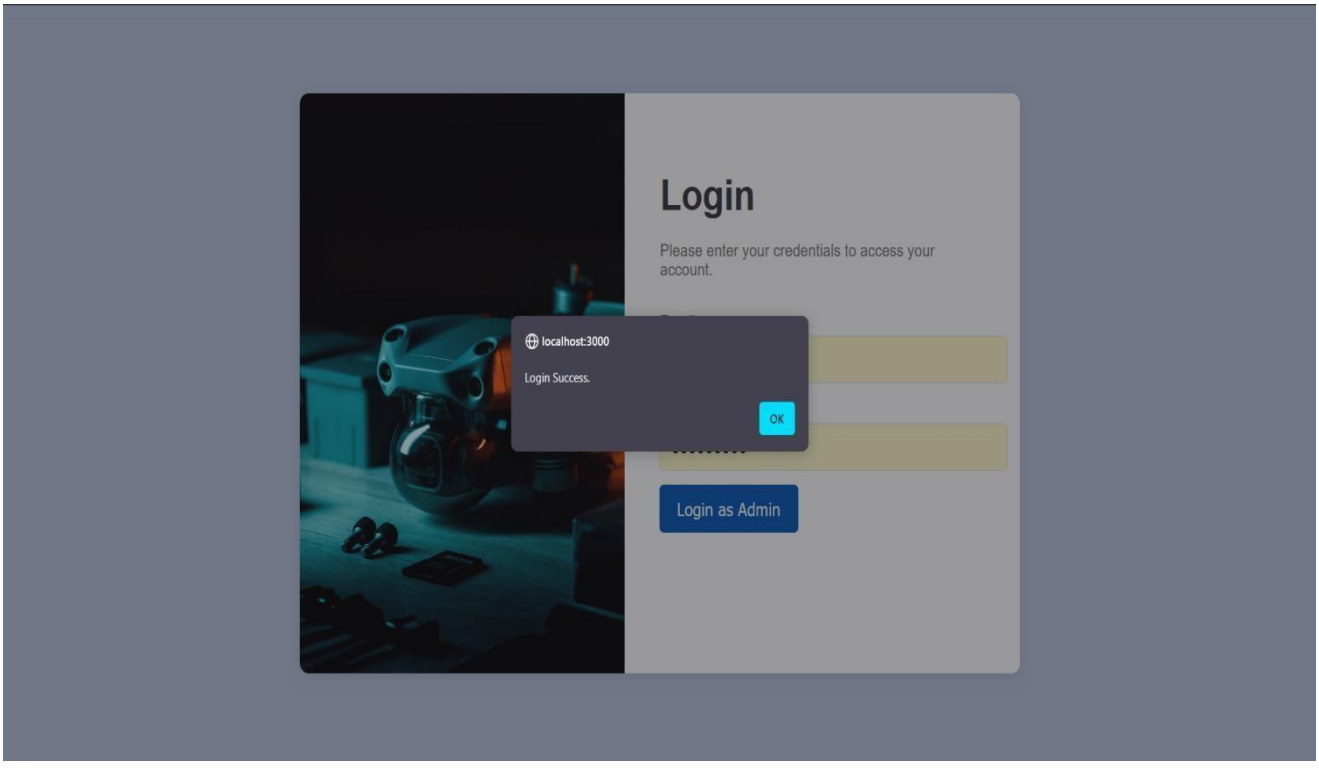
❖ Step Three:



3.5 Admine Interface :

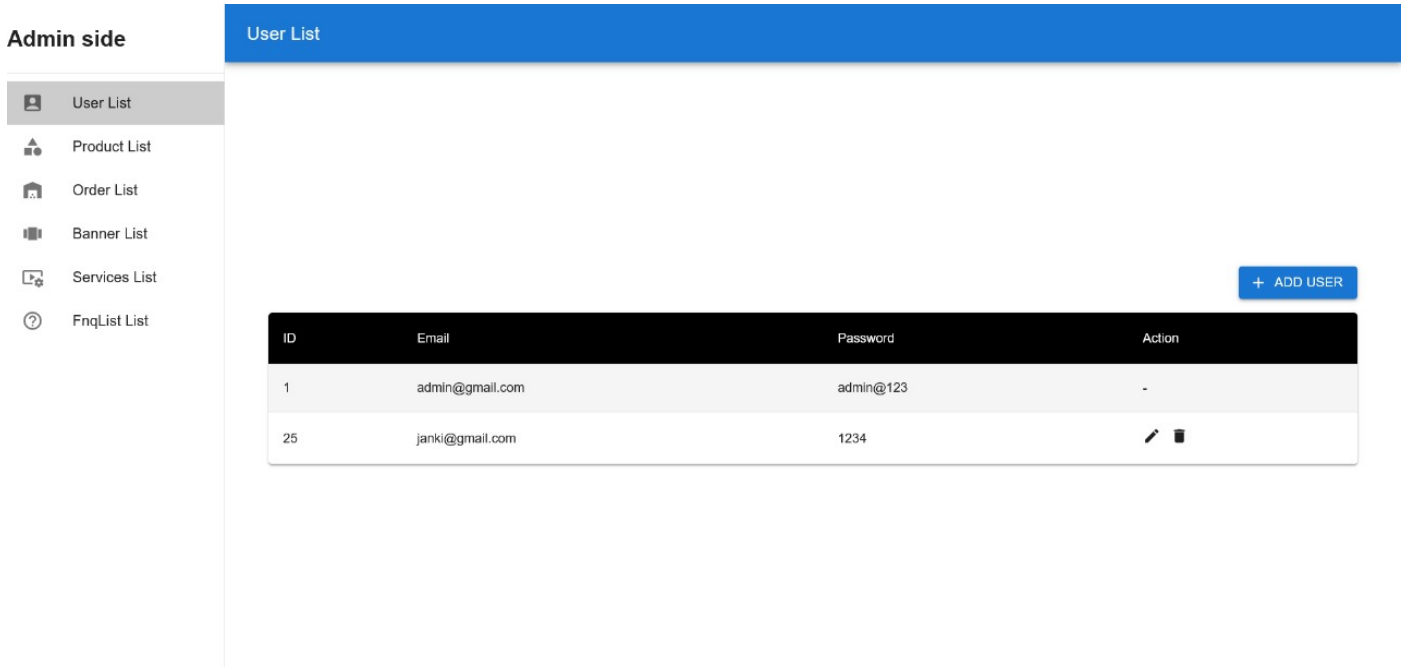
❖ Login :



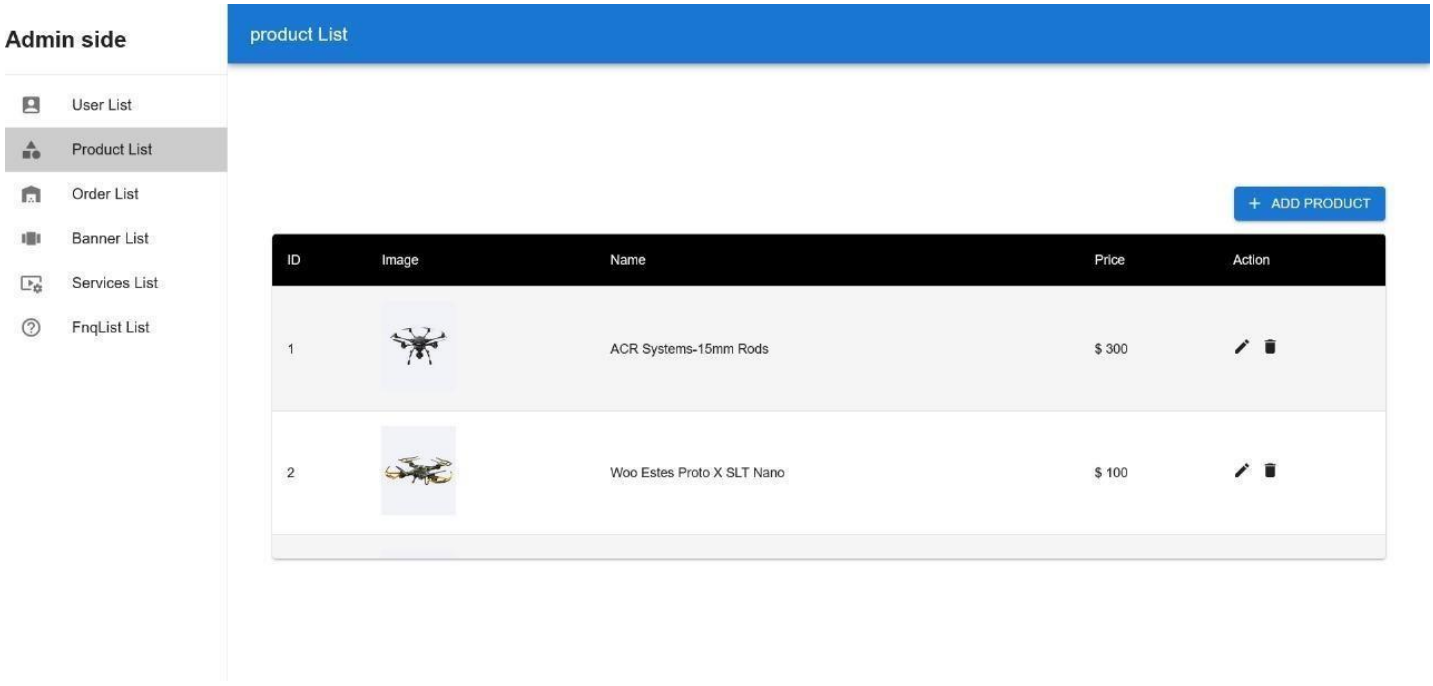


❖ Admine Interface :

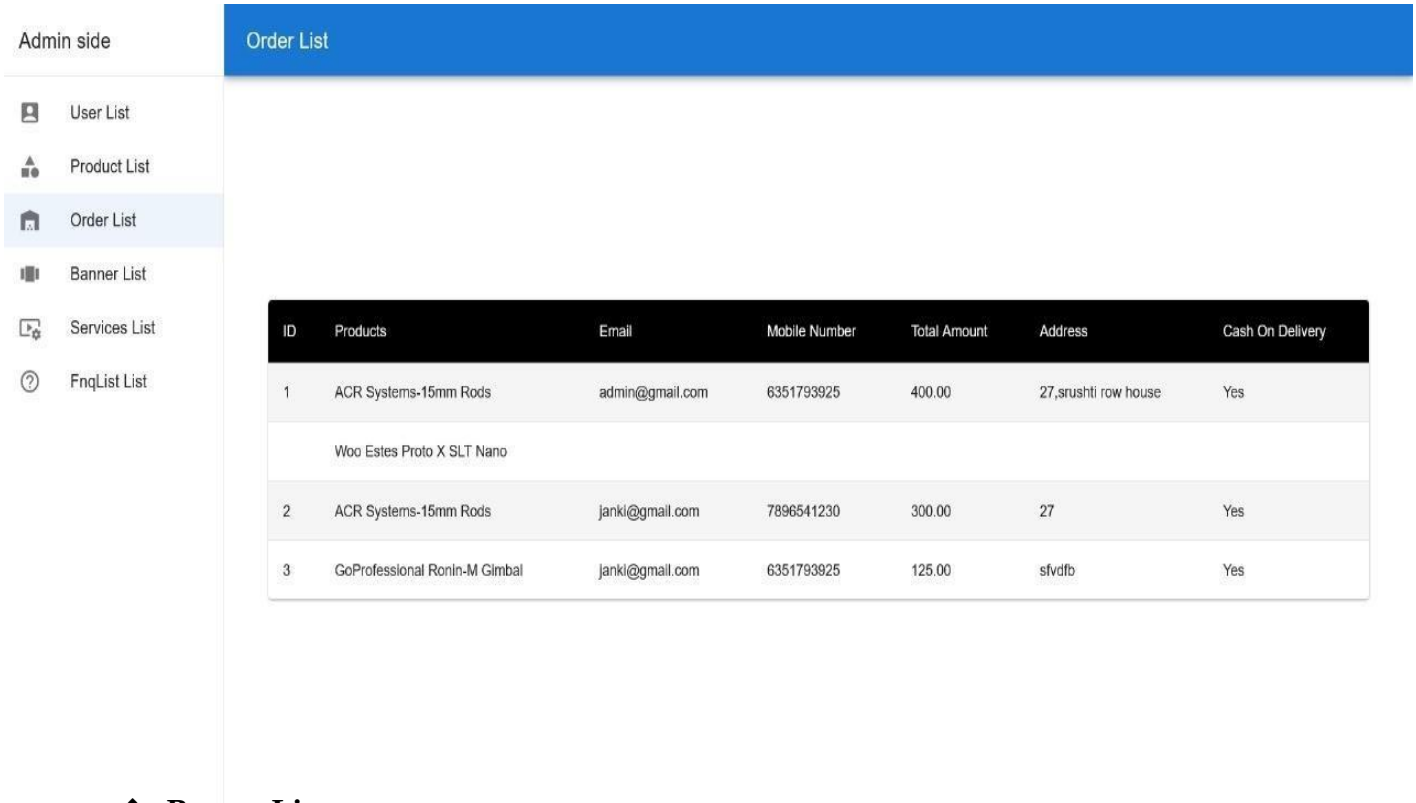
❖ User List :



❖ Product List :

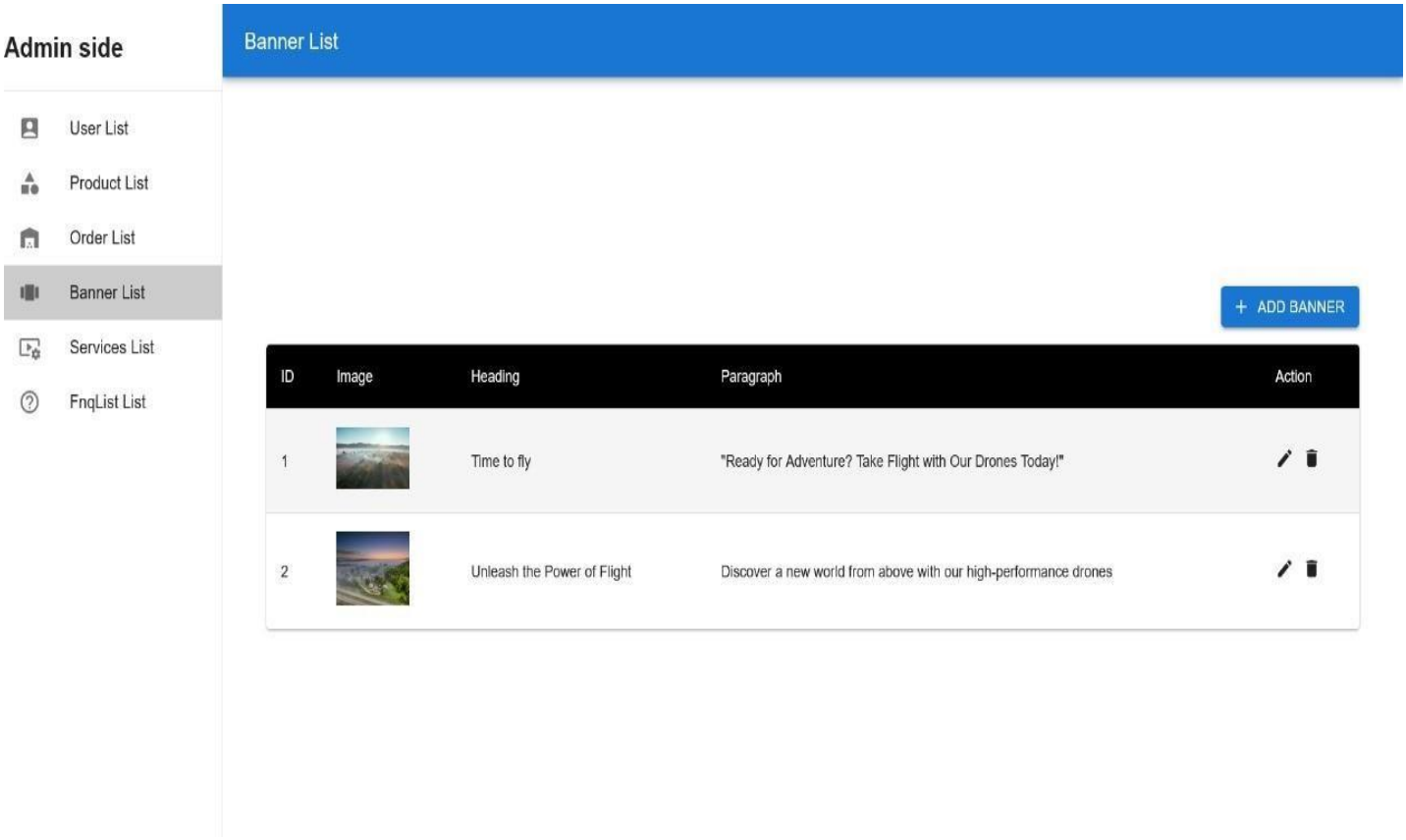


- **Order List:**

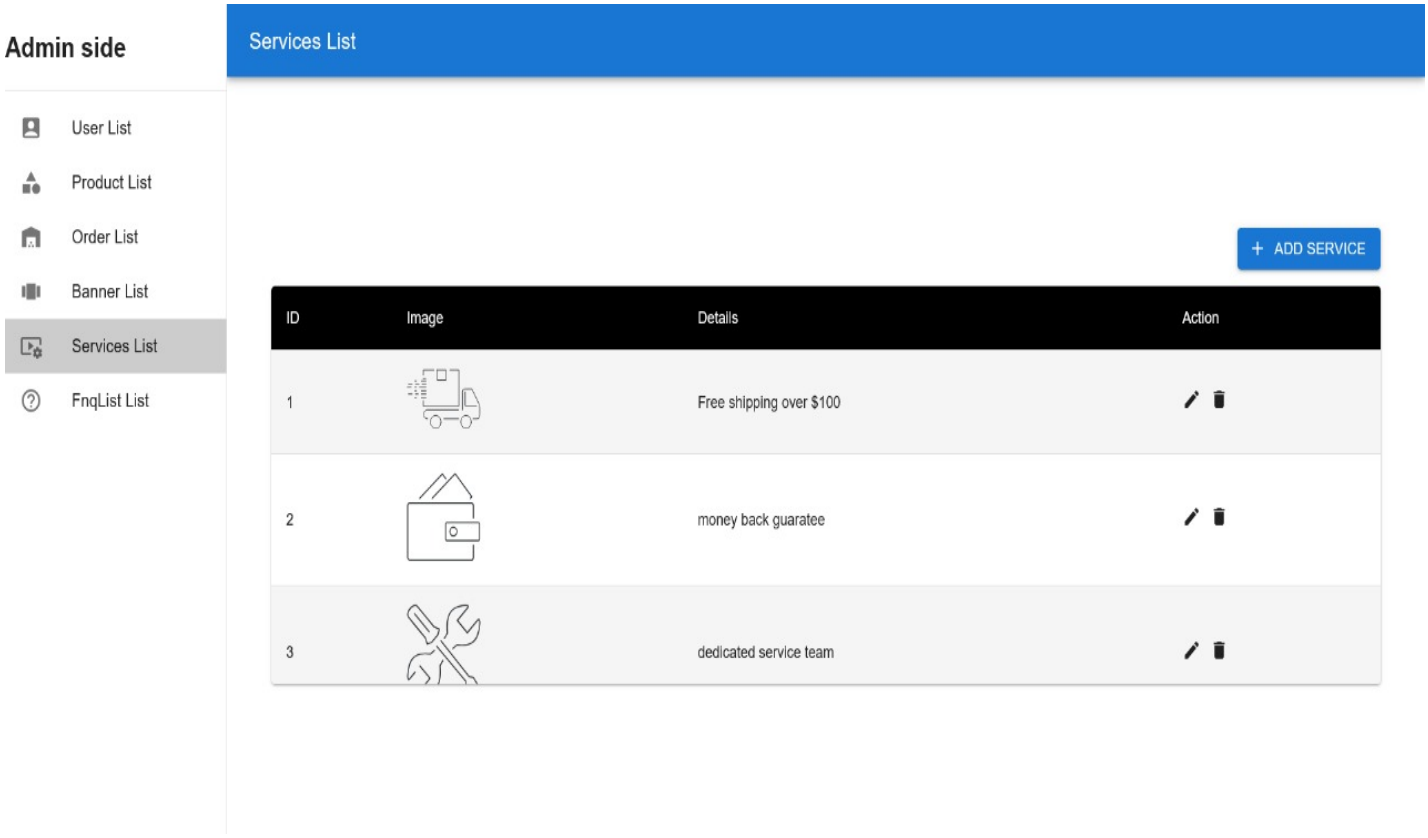


ID	Products	Email	Mobile Number	Total Amount	Address	Cash On Delivery
1	ACR Systems-15mm Rods	admin@gmail.com	6351793925	400.00	27,srushti row house	Yes
	Woo Estes Proto X SLT Nano					
2	ACR Systems-15mm Rods	janki@gmail.com	7896541230	300.00	27	Yes
3	GoProfessional Ronin-M Gimbal	janki@gmail.com	6351793925	125.00	sfvdfb	Yes

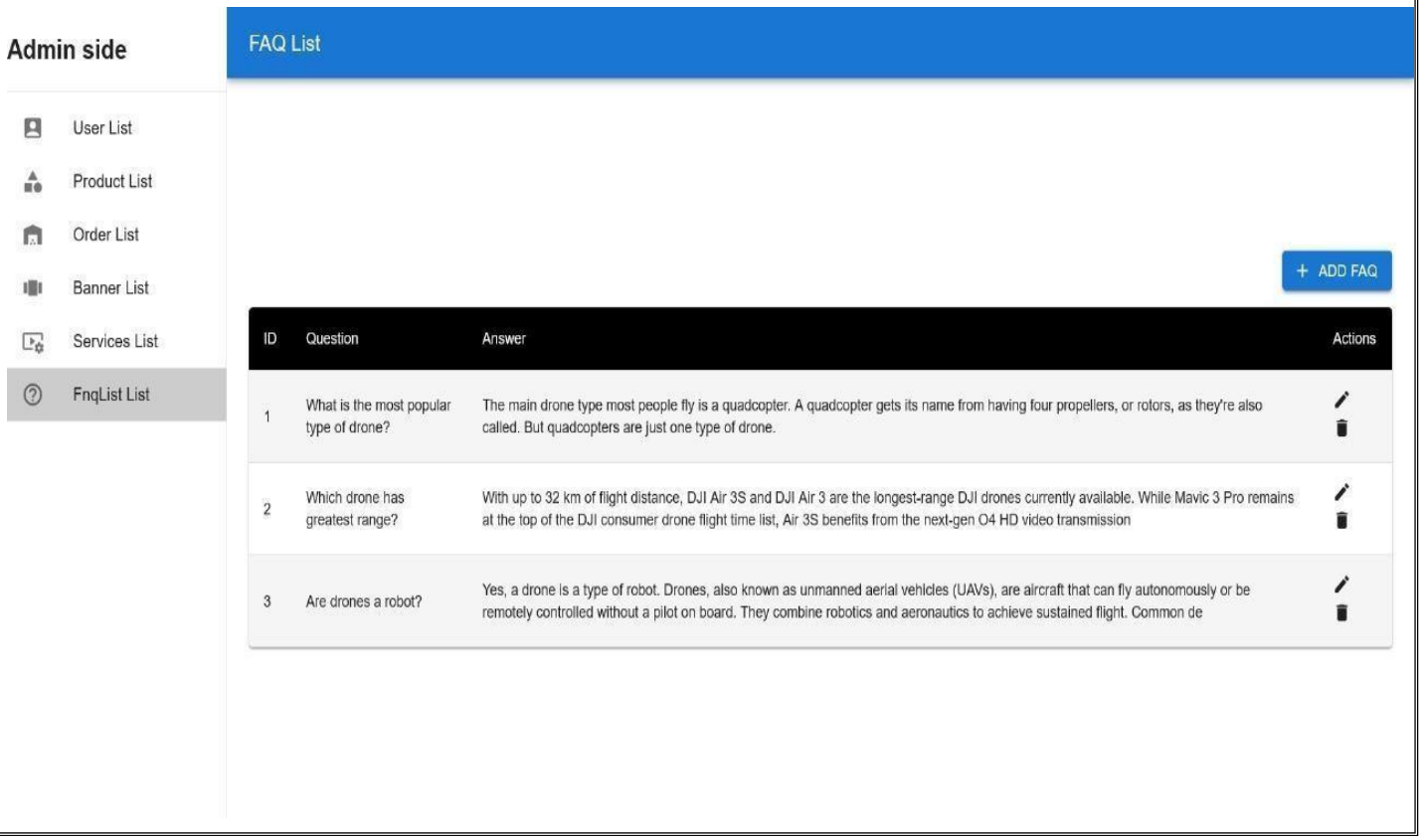
- **Banner List:**



❖ Service List:



❖ F & N List:



4. Testing

4.1 Unit Testing

➢ Unit testing ensures that individual components of the drone e-commerce website function correctly. Below are key areas to test:

1. User Authentication

➢ Verify login and registration functionality.

➢ Check password reset and email verification processes.

2. Product Management

➢ Test adding, updating, and deleting drone listings.

➢ Validate correct price, description, and image uploads.

3. Shopping Cart & Checkout

➢ Ensure items can be added and removed from the cart.

➢ Verify the checkout process, including payment gateway integration.

4. Search & Filtering

➢ Test keyword-based search and category filters.

➢ Verify sorting by price, rating, and popularity.

5. Order Processing

➢ Ensure successful order placement and tracking.

➢ Test order cancellation and refund processes.

6. Performance & Security

➢ Validate website speed and load handling.

➢ Test security features like SQL injection and XSS protection.

4.2 Navigation Testing

- Navigation testing ensures a seamless user experience by verifying that all links, menus, and buttons function correctly.

- The test includes checking the home page, product categories, and search functionality to ensure users can easily find drones and accessories.

- It also validates the smooth navigation between the product page, cart, and checkout process.

Test Case for User Navigation:

Test id	Test Filed	Step Executed	Expected Result	Actual Result
1	Home	By Default	Direct to Home	Pass/Fail
2	Menu	Click on different menu items (Drones, Accessories, Deals)	Correct category page opens	Pass/Fail
3	Search Functionality	Enter a keyword in the search bar and click search	Relevant drone products are displayed	Pass/Fail
4	Product Page Navigation	Click on a drone product from the list	Product details page opens	Pass/Fail
5	Add to Cart Navigation	Click "Add to Cart" on a product	Product is added to the cart	Pass/Fail
6	Checkout Process	Proceed to checkout after adding items	User is taken to the payment page	Pass/Fail
7	User Login Navigation	Click on "Login" and enter credentials	User successfully logs in and lands on the dashboard	Pass/Fail
8	Contact Us Page Navigation	Click on "Contact Us"	Contact page opens with a form	Pass/Fail
9	Signup Navigation	Click “signup" from the user menu	User is logged inand redirected to home page	Pass/Fail

4.3 Functional Testing

❖ Introduction

•Functional testing for a drone e-commerce website ensures that all features perform as intended, providing a seamless experience for users.

•This involves testing various modules, including user authentication, product catalog, shopping cart, checkout process, payment gateway, and order management.

• By verifying that every function meets the expected requirements, functional testing ensures the website is reliable and user-friendly.

- Verify user registration, login, and logout functionalities.
- Ensure password reset and email verification processes work correctly.
- Validate account security features such as multi-factor authentication.
- Ensure drone products are displayed with accurate details, including price, specifications, and images.
- Test product search and filtering functionality based on categories, brands, and price ranges.
- Verify product stock availability and notifications for out-of-stock items.
- Test adding and removing drones from the cart.
- Ensure cart updates properly when quantities change.
- Validate the wishlist feature, allowing users to save favorite drones for later.
- Verify the checkout process, including shipping and billing address entry.
- Ensure payment methods (credit/debit cards, PayPal, wallets) process transactions securely.
- Test discount codes, coupons, and tax calculations for accuracy.
- Ensure users receive order confirmation emails after successful purchases.
- Validate order tracking features with real-time shipment updates.
- Test cancellation and refund functionalities.
- Verify navigation across different website sections, such as home, categories, deals, and contact pages.
- Test breadcrumb trails, back buttons, and menu responsiveness on different devices.
- Ensure the website loads quickly and handles multiple users simultaneously.
- Test security measures against SQL injections, cross-site scripting (XSS), and data breaches.

4.4 Environment Testing

❖ Introduction

➢ Environment testing ensures that the drone e-commerce website functions correctly across different system configurations, networks, and devices.

➢ It verifies compatibility, performance, and security across multiple environments, ensuring an optimal user experience.

❖ Key Areas of Environment Testing

1. Operating System Compatibility

➢ Test website functionality on different operating systems (Windows, macOS, Linux).

➢ Verify mobile compatibility on iOS and Android devices.

2. Browser Compatibility

➢ Ensure smooth performance on major browsers (Chrome, Firefox, Safari, Edge).

➢ Test UI responsiveness and script execution across different browser versions.

3. Device Compatibility

➢ Validate website usability on desktops, tablets, and smartphones.

➢ Test layout adjustments for different screen resolutions.

4. Network Conditions

➢ Check website performance on different network speeds (Wi-Fi, 4G, 5G).

➢ Test under high-latency and low-bandwidth conditions.

5. Server & Hosting Environment

➢ Validate server response time and load handling under various traffic conditions.

➢ Test cloud-based hosting services for uptime reliability.

6. Security & Firewall Testing

➢ Ensure the website operates correctly with different firewall and antivirus settings.

➢ Verify security compliance for data encryption and protection.

7. Database & API Testing

- Check database connectivity and data retrieval speed.
- Validate API integrations for payment gateways and order tracking.

5. Conclusion

Conclusion

- The drone e-commerce website provides a seamless platform for users to explore, compare, and purchase drones efficiently.

- Through rigorous testing, including functional, navigation, environment, and security testing, we ensured the website's reliability, performance, and user-friendliness.

- By validating core features such as product search, cart management, payment processing, and order tracking, we have optimized the user experience and transaction security.

- The successful completion of this project demonstrates the effectiveness of our approach in delivering a high-quality, responsive, and scalable e-commerce solution for drone enthusiasts and professionals.

6. Bibliography

Bibliography

❖ **Website Links:**

- https://www.dji.com/global
- https://www.parrot.com/en

❖ **YouTube Links:**

- How to Start a Drone E-commerce Business
  - https://www.youtube.com/watch?v=w-V3ybVJhIc
- Top Drones for Online Selling
  - https://www.youtube.com/playlist?list=PLZzvxsmFWN85xCYjWEdhSnkg7dWakVKnM
- Drone Business Strategies Playlist
  - https://www.youtube.com/watch?v=Ys7NAqtr7WA
- Best Drone Marketplaces
  - https://www.youtube.com/watch?v=6L7n5WnVdPY

❖ **Reference Links:**

- Best Online Platforms to Sell Drones
- Legal Regulations for Drone Selling

❖ **Resource Links:**

- https://droneii.com/

Thank you