

Dear Sir,

**Re:Enclosed Application Agreement for SkyScribe: Drone Technology Website**

As dedicated students passionate about innovation, we understand that creating a client-oriented web application requires a blend of technical excellence and clear communication. We strive to ensure you receive the very best service by combining these elements. Every client has unique needs, and we aim to deliver tailored, innovative, and cost-effective solutions that align with your business requirements. Our team is committed to ensuring timely delivery and adherence to budget constraints.

Based on your specific business requirements, we have designed SkyScribe: Drone Technology Website to meet and exceed your expectations. This system includes features for drone operation management, real-time analytics, and user-friendly authentication and database management through Firebase.

In the enclosed agreement, we have outlined every detail and feature of the application, ensuring clarity and transparency. We request you to review this document carefully. If it aligns with your expectations, kindly sign and confirm the agreement so we may proceed accordingly.

Thank you for this opportunity to collaborate. We look forward to working with you on this innovative project.

Sincerely,

Md Abdur Rahman

ID: 213-15-4343

Section: 60\_C

Daffodil International University

# SKYSCRIBE WEBSITE

## 1. Project Overview

### **Purpose:**

To develop a drone technology-focused website, **SkyScribe**, using raw HTML, CSS, and JavaScript, integrated with Firebase for user authentication and real-time data storage. The website aims to provide an intuitive platform for users to explore, learn about, and manage drone-related services and features.

### **Scope:**

The application includes user management, drone specifications, operational guides, real-time drone status tracking, and service request modules.

### **Definitions, Acronyms, and Abbreviations:**

- **UAV:** Unmanned Aerial Vehicle
- **UI:** User Interface
- **DBMS:** Database Management System
- **API:** Application Programming Interface

### **Overview:**

The website focuses on offering a seamless experience for users to interact with drone-related functionalities. Firebase Authentication ensures secure access, and Firebase Realtime Database supports dynamic updates and storage of drone data and user interactions.

## 2. Overall Description

### **Product Perspective:**

The website leverages Firebase services to handle backend functionalities, including user authentication and data management. It is designed to provide real-time interaction with drone data, ensuring users can monitor and manage drones effectively.

### **Product Functions:**

- Admin login and registration
- Access to drone specifications and operational details
- Submission and management of service requests
- Educational resources about drone technology

### **User Characteristics:**

- **Users:** Browses drone-related content, tracks drone and submits service requests.
- **Admin:** Manages drone inventory, user queries, and service requests.
- **Technician:** Accesses service requests, updates repair or maintenance status in real-time.

### **Constraints:**

- Reliance on Firebase for backend operations.
- Responsive design must ensure compatibility across various devices.
- Maintaining real-time performance for drone tracking updates.

### **Assumptions and Dependencies:**

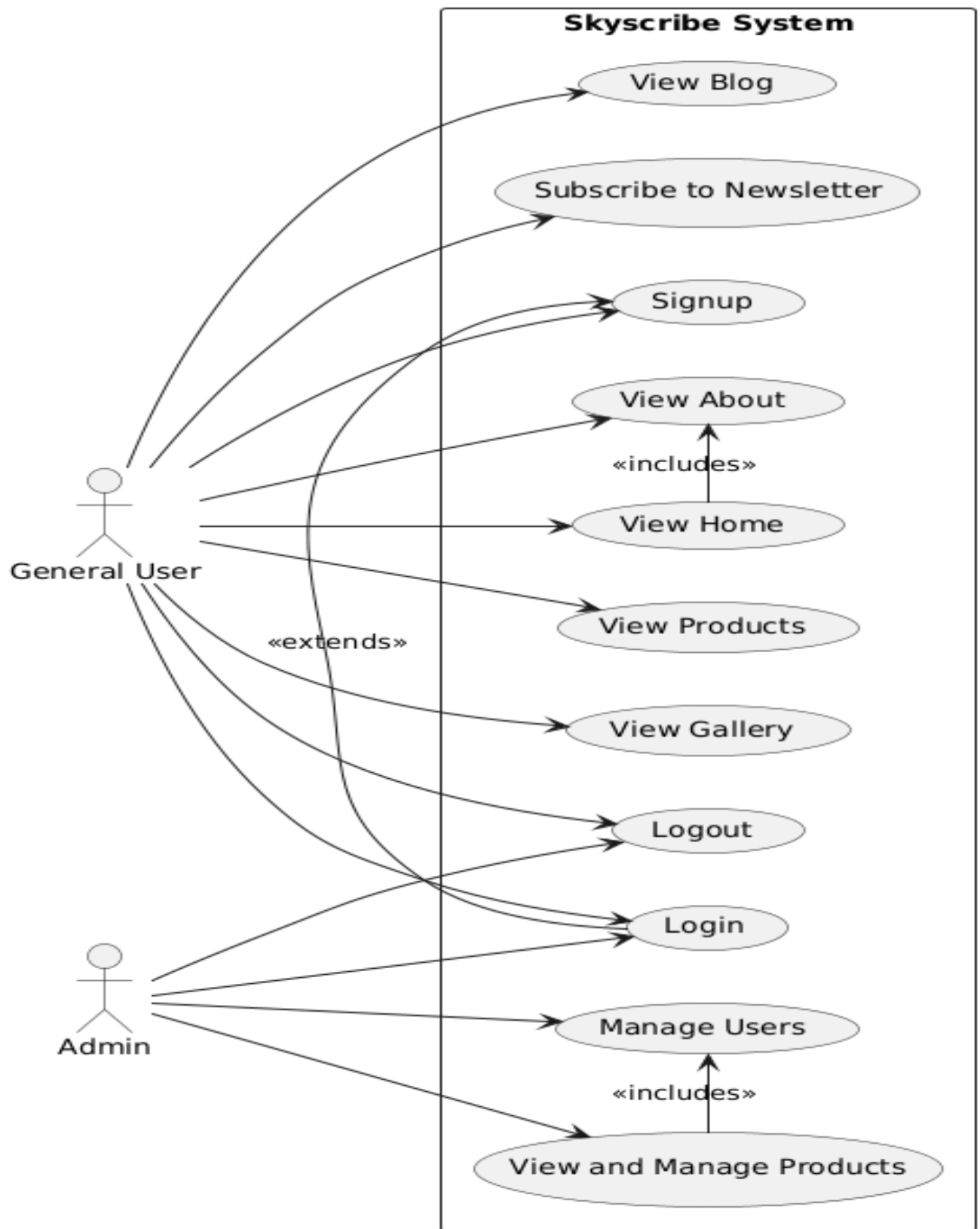
- Stable Firebase services for authentication and database operations.
- Dependable internet connectivity for real-time updates.
- Accurate and consistent drone data for user interactions.

## **2. System Features**

### **User Roles and Permissions:**

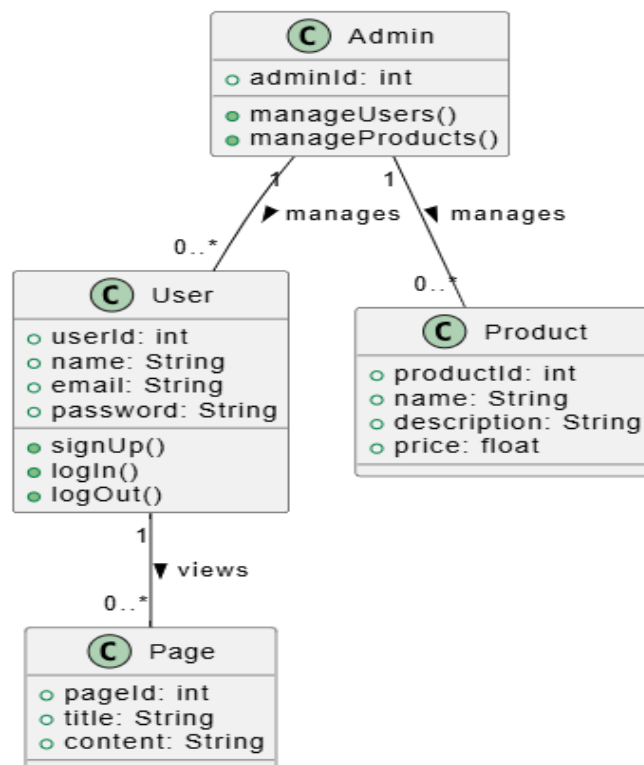
- **Customer:** Views drone specifications, tracks drone statuses, and submits service requests.
- **Admin:** Manages drone inventory, reviews and assigns service requests, and handles user queries.
- **Technician:** Views and updates assigned service requests in real-time.

## Use Case Diagram:

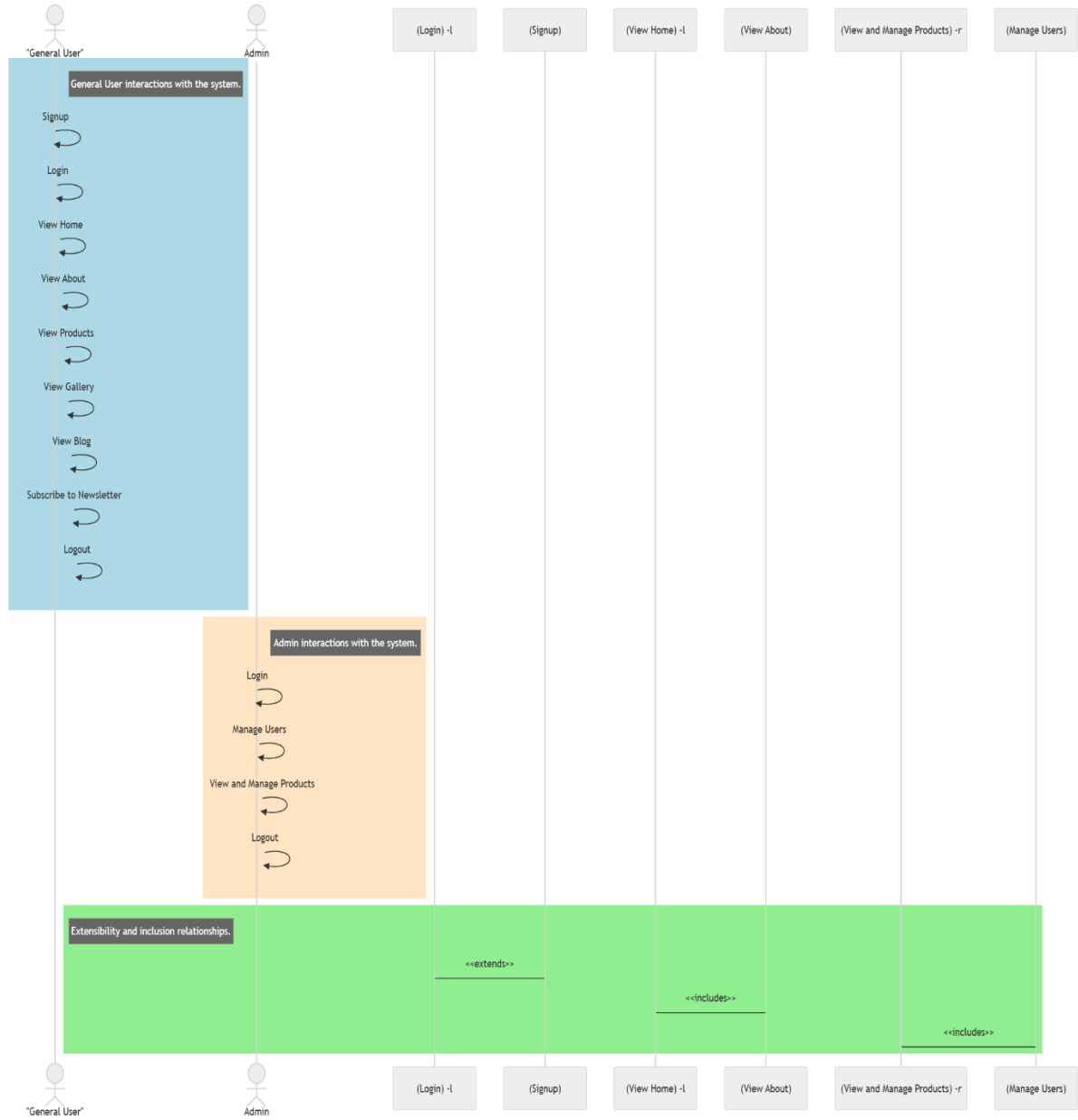


## Unified Modeling Language:

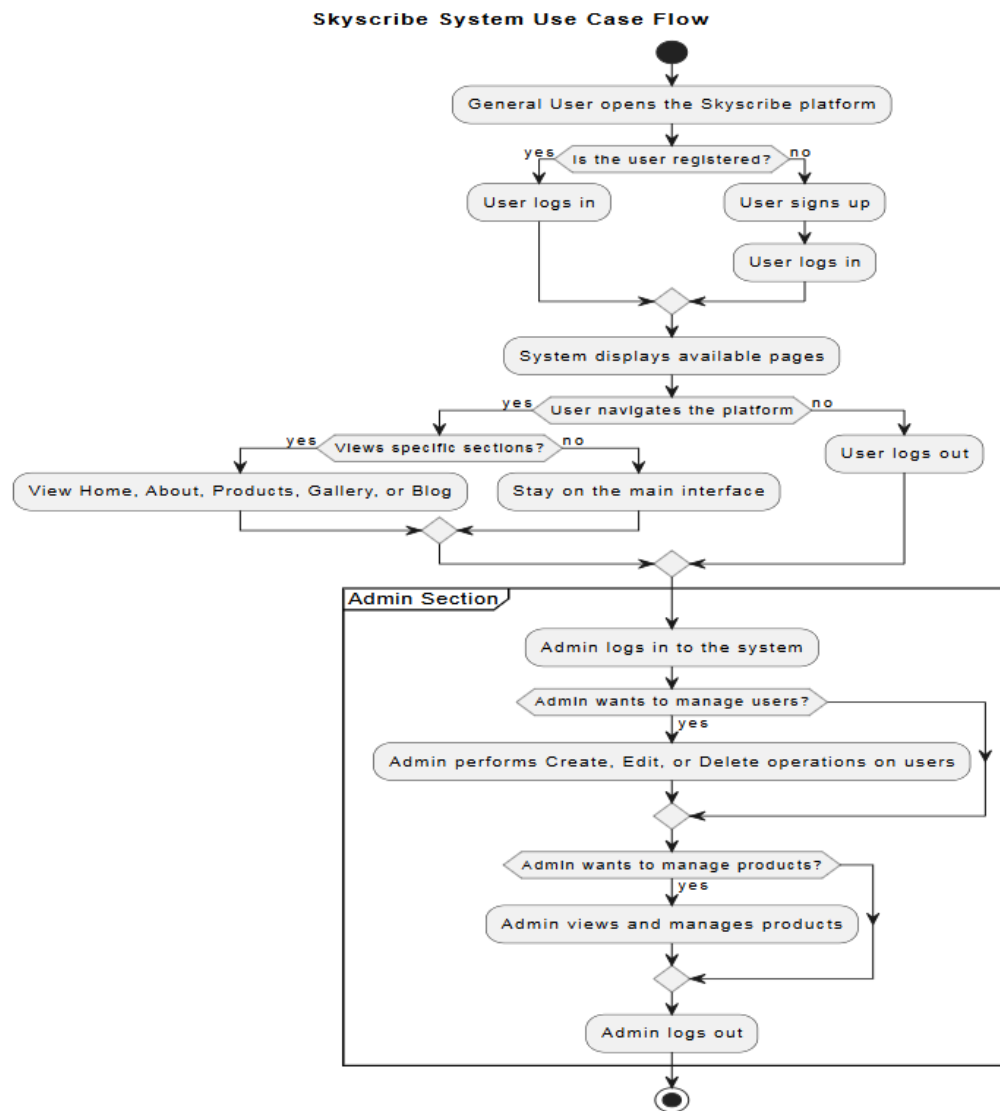
**Skyscribe System Class Diagram**



# Sequence Diagram:



## Activity Diagram:





# **1. Detailed Workflows**

## **User Workflow:**

### **1. Registration & Login:**

- User registers or logs in using Firebase Authentication.
- On successful login, Firebase issues a token for session management.

### **2. Dashboard Access:**

- User accesses their personalized dashboard showing relevant data retrieved from Firebase Realtime Database.

### **3. Task Submission:**

- Users can create, update, or delete tasks (or relevant content) in the app.
- Task data is stored in Firebase Realtime Database.

### **4. Notifications:**

- Real-time notifications are triggered using WebSockets or Firebase Realtime Database listeners.

### **5. Account Management:**

- Users can update their profile or account information stored in Firebase Authentication and Realtime Database.

## **Admin Workflow:**

### **1. Admin Login:**

- Admin logs in via Firebase Authentication using a privileged role.
- Admin privileges are verified through custom claims or a dedicated admin flag in the database.

## **2. User Management:**

- Admin views and manages registered users.
- Admin can deactivate/reactivate users or modify their roles.

## **3. Content Moderation:**

- Admin reviews and moderates user-submitted content or tasks stored in the database.

## **4. System Analytics:**

- Admin accesses analytics dashboards displaying system performance, user activity, and other metrics pulled from Firebase Realtime Database.

## **5. Real-Time Monitoring:**

- Admin monitors real-time system updates using Firebase's real-time capabilities.

## **2. Module Description**

### **User Modules:**

#### **1. Authentication Module:**

- Handles user sign-up, login, logout, and password recovery using Firebase Authentication.

#### **2. Profile Module:**

- Allows users to view and edit their profiles (name, email, etc.).

#### **3. Task Management Module:**

- Enables users to create, edit, delete, and view their tasks or content.

#### **4. Notification Module:**

- Provides real-time notifications using Firebase listeners.

## **Admin Management Modules:**

### **1. Admin Authentication Module:**

- Ensures only privileged users can access the admin panel.

### **2. User Management Module:**

- Manages user profiles, permissions, and roles stored in the Firebase Realtime Database.

### **3. Content Moderation Module:**

- Admin reviews and takes action on user content (approves, deletes, or flags).

### **4. Analytics Module:**

- Displays data visualization of system metrics (e.g., user activity, database statistics).

## **Admin Panel (Optional):**

- A separate interface designed for admins with access to all admin modules and workflows.
- Features include data visualization, quick actions (e.g., ban user, moderate content), and detailed reports.

## **3. Technology Stack**

### **Frontend:**

- Frameworks: Pure HTML, CSS, and JavaScript for building the user interface.
- Design Principles: Modular, reusable components to ensure scalability and maintainability.

### **State Management:**

- **Firestore API:** Handles authentication, database interactions, and real-time data updates.

## **Backend API:**

- **Firestore Dependencies:**
  - `firebase`: Core library for authentication, database, and hosting.
  - `firebase-tools`: CLI for deployment and management.
  - `@firebase/app`: Initializes Firestore in your app.
  - `@firebase/auth`: Manages user authentication.
  - `@firebase/database`: Manages Realtime Database interactions.

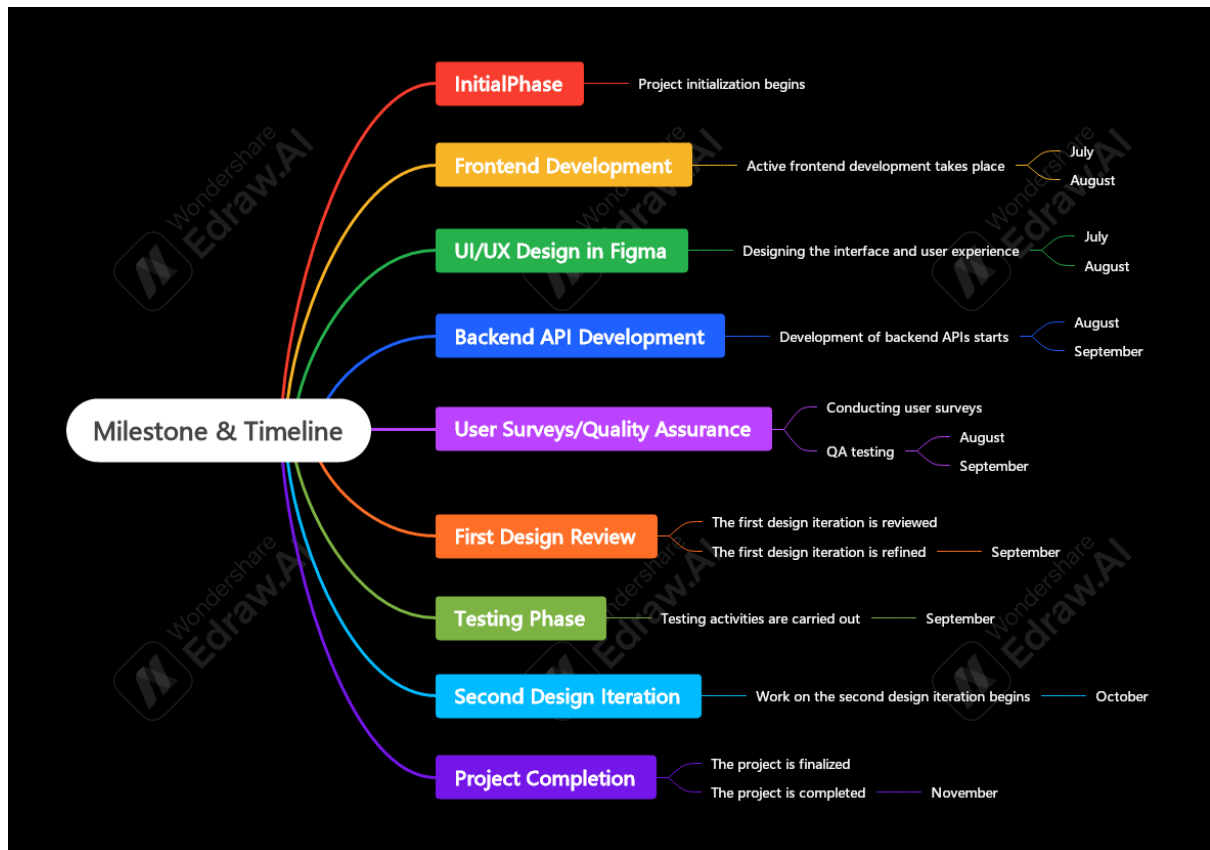
## **Database:**

- **Firestore Realtime Database:** Stores user, admin, and application data, with real-time sync capabilities.

## **Real-Time Updates:**

- **Firestore Listeners:** Utilize Firestore's built-in listeners for automatic updates.
- **WebSockets/Server-Sent Events (Optional):** For custom real-time functionality in delivery tracking.

## 6. Milestones and Timeline



## Home:

SkyScribe

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Modern Technology

## Drone

Our cutting-edge drones are equipped with state-of-the-art features that redefine the possibilities of flight.

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# About Us

We are more than just a team; we are a community of drone enthusiasts dedicated to pushing the boundaries of aerial innovation. With a shared love for cutting-edge technology and the limitless possibilities it offers, we have come together to bring you the best in drone solutions.

Our journey is fueled by a commitment to excellence, from the sleek design of our drones to the advanced features that make them stand out in the sky. Join us on this exciting adventure, and discover the world from a new perspective. Elevate your experience; elevate with us.

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### Product Categories

- Consumer
- Professional
- Enterprise
- Components

### Where to Buy

- Official Store
- Best Buy
- B&H Photo Video
- Hobby Shops

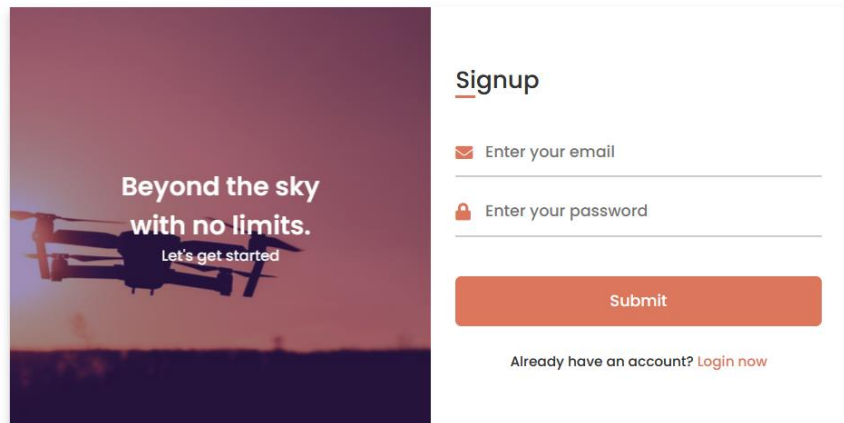
### Quick Links

- Who we are
- Contact us
- Careers
- Dealer Portal

### Service Plan

- Maintenance
- Workshops
- Insurance
- Upgrade

## SignUp:



**Signup**

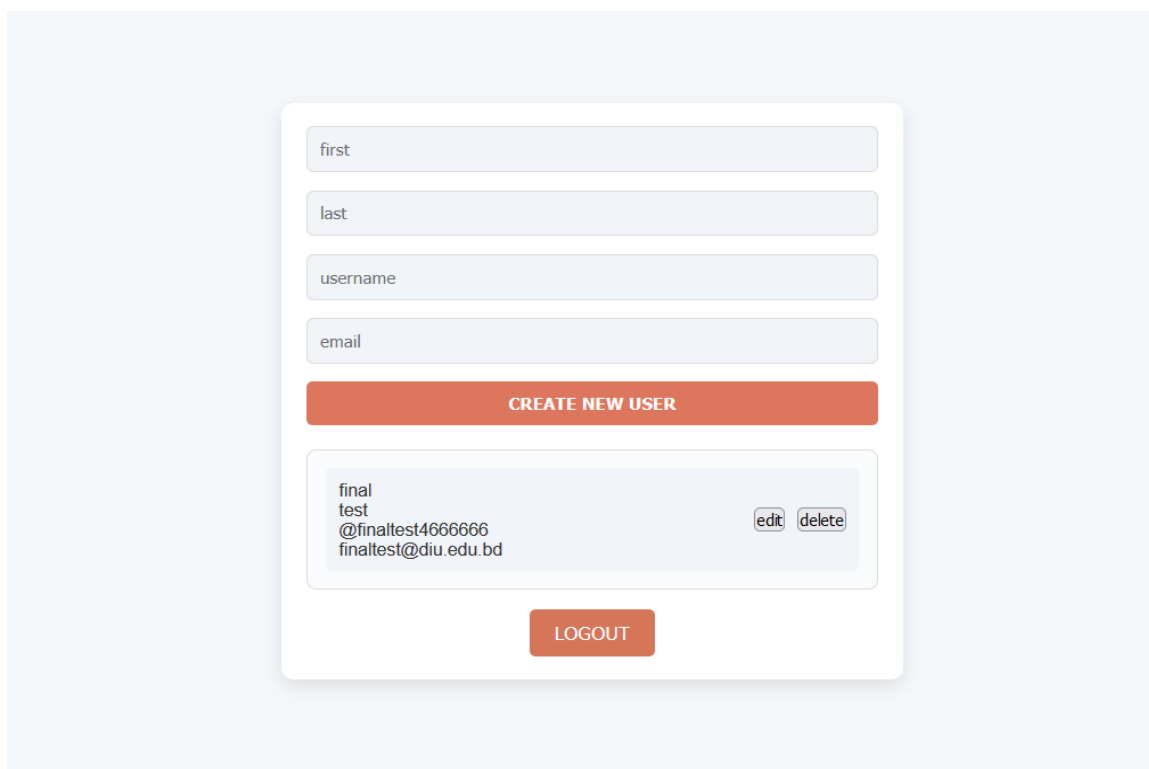
✉ Enter your email

🔒 Enter your password

Submit

Already have an account? [Login now](#)

## Dashboard:



first

last

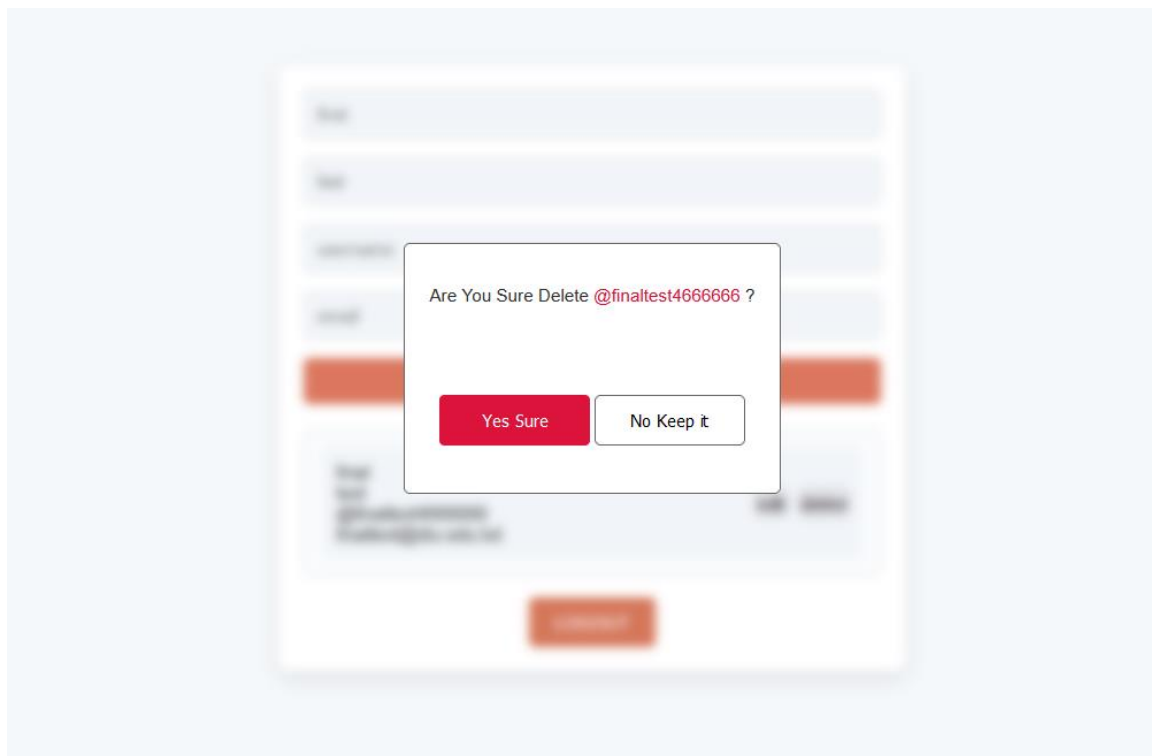
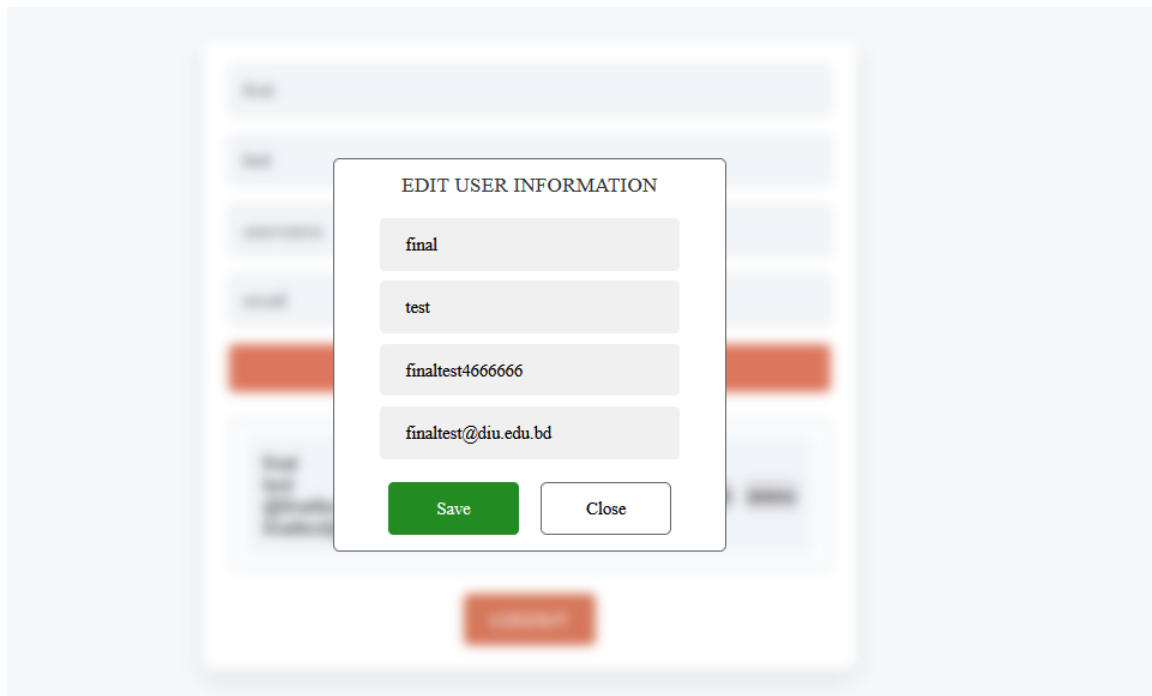
username

email

CREATE NEW USER

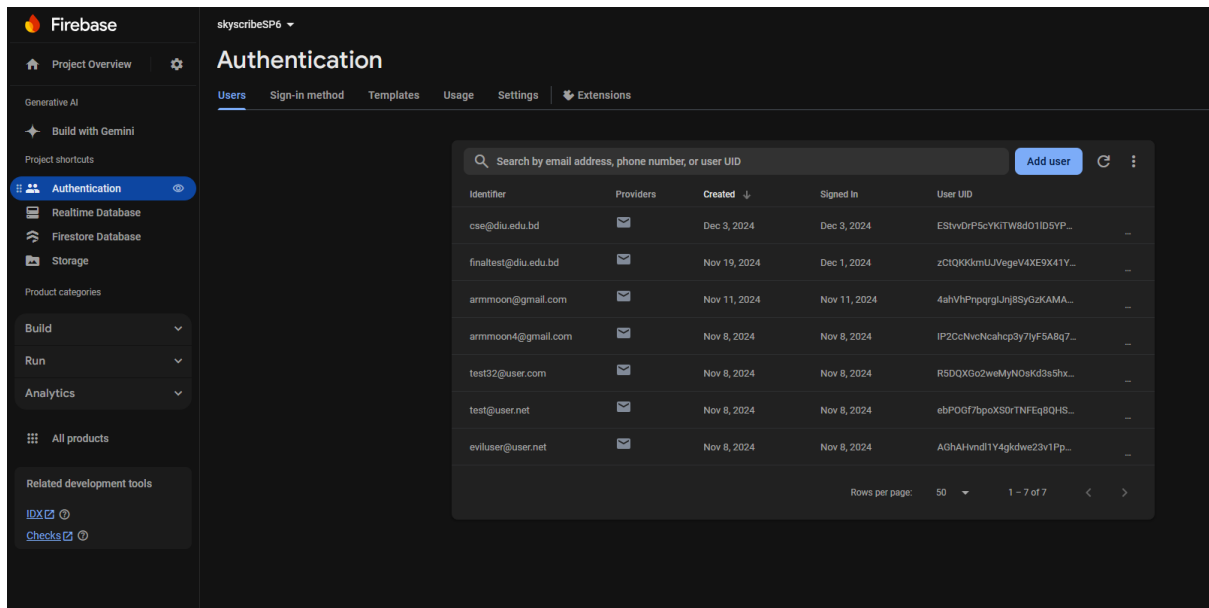
final test @finaltest4666666 finaltest@diu.edu.bd	<a href="#">edit</a> <a href="#">delete</a>
--	---

LOGOUT



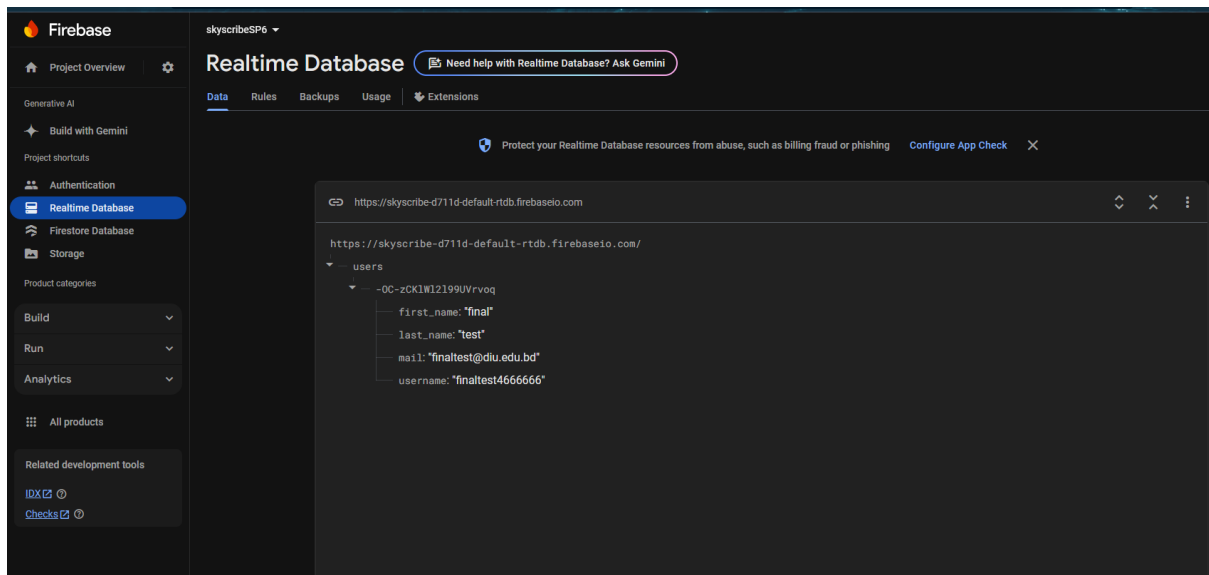


# Database:



The screenshot shows the Firebase Authentication console for the project 'skyscribeSP6'. The left sidebar contains navigation options: Project Overview, Generative AI, Build with Gemini, Project shortcuts (Authentication, Realtime Database, Firestore Database, Storage), Product categories, Build, Run, Analytics, All products, and Related development tools (IDX, Checks). The main area is titled 'Authentication' and has tabs for Users, Sign-in method, Templates, Usage, Settings, and Extensions. The 'Users' tab is active, displaying a table of users with columns: Identifier, Providers, Created, Signed In, and User UID. A search bar at the top allows searching by email address, phone number, or user UID. An 'Add user' button is in the top right. The table lists seven users, including 'cse@diu.edu.bd', 'finaltest@diu.edu.bd', and 'armmoon@gmail.com'. At the bottom, it shows 'Rows per page: 50' and '1 - 7 of 7'.

Identifier	Providers	Created	Signed In	User UID
cse@diu.edu.bd	📧	Dec 3, 2024	Dec 3, 2024	ESstvDrP5cYkITW8dO1ID5YP...
finaltest@diu.edu.bd	📧	Nov 19, 2024	Dec 1, 2024	zCIQK9dmLUVegeV4XE9X41Y...
armmoon@gmail.com	📧	Nov 11, 2024	Nov 11, 2024	4ahVhPnpqgUjh8SyGzKAMA...
armmoon4@gmail.com	📧	Nov 8, 2024	Nov 8, 2024	IP2CcNvcNcahpc3y7lyF5A8q7...
test32@user.com	📧	Nov 8, 2024	Nov 8, 2024	RS0QXGo2weMyNOskD3sShx...
test@user.net	📧	Nov 8, 2024	Nov 8, 2024	ebPOGf7bpoXS0-TNFEq8QHS...
eviluser@user.net	📧	Nov 8, 2024	Nov 8, 2024	AGhAHvnd1Y4gkdw23v1Pp...



The screenshot shows the Firebase Realtime Database console for the project 'skyscribeSP6'. The left sidebar is identical to the previous screenshot, but the 'Realtime Database' option is selected under Project shortcuts. The main area is titled 'Realtime Database' and has tabs for Data, Rules, Backups, Usage, and Extensions. A notification banner at the top says 'Protect your Realtime Database resources from abuse, such as billing fraud or phishing' with a 'Configure App Check' link. Below the banner, the URL 'https://skyscribe-d711d-default-rtdb.firebaseio.com/' is shown. The data is displayed as a JSON snapshot: 

```
{
  "users": {
    "-OC-zCKlW12199Uvrvq": {
      "first_name": "final",
      "last_name": "test",
      "mail": "finaltest@diu.edu.bd",
      "username": "finaltest4666666"
    }
  }
}
```

## 6. Testing Process

### Unit Testing:

- **Scope:** Verifies individual modules such as authentication, profile management, and task handling.
- **Tools:** Utilize lightweight JavaScript libraries such as Mocha or Jasmine for pure JavaScript projects.
- **Examples:**
  - Test Firebase Authentication for login and signup flow.
  - Test functions for task creation, editing, and deletion.

### Integration Testing:

- **Scope:** Ensures seamless interaction between frontend modules and Firebase backend APIs.
- **Tools:** Combine Mocha with Sinon.js for mocking Firebase API responses during tests.
- **Examples:**
  - Validate synchronization between the Task Management Module and Firebase Realtime Database.
  - Ensure real-time notifications update correctly using Firebase listeners.

### End-to-End Testing:

- **Scope:** Simulates full user workflows to validate the application's behavior.
- **Tools:** Cypress for automating scenarios like user login, task creation, and admin moderation.
- **Examples:**
  - Test a user signing up, adding tasks, and receiving real-time notifications.
  - Simulate an admin moderating user content via the Admin Panel.

### User Acceptance Testing (UAT):

- **Scope:** Feedback from a test group to ensure features meet business and user requirements.
- **Execution:** Provide access to users for testing critical workflows and gather insights for improvement.

## 7. Support and Maintenance

### **Support Services:**

- **Availability:** Provide dedicated support channels for both end-users and administrators.
- **SLA Guidelines:**
  - Critical Issues: Resolved within 1 hour.
  - Non-critical Issues: Resolved within 24 hours.

### **Maintenance Plan:**

- **Regular Updates:** Weekly checks for Firebase library updates and security patches.
- **Feature Enhancements:** Rolling out new features like advanced analytics and user role management.
- **Bug Fixes:** Address reported issues promptly to ensure seamless operations.

## 8. Pricing and Payment Terms

### **Total Project Fee:**

- \$10,000 USD.

### **Payment Schedule:**

1. **20%:** Completion of requirement analysis and design approval.
2. **40%:** Delivery of the fully functional frontend and backend integration.
3. **30%:** After successful testing and user acceptance.
4. **10%:** Post-deployment sign-off.

## 9. Roles and Responsibilities

### **User Modules Responsibilities:**

- **Authentication Module:** Provide secure access through Firebase Authentication.
- **Profile Module:** Ensure user profiles are editable and up-to-date

- **Task Management Module:** Enable CRUD operations with real-time updates
- **Notification Module:** Deliver instant updates via Firebase listeners.

#### **Admin Management Modules Responsibilities:**

- **Admin Authentication Module:** Restrict admin access to authorized users only.
- **User Management Module:** Manage and update user roles and permissions securely.
- **Content Moderation Module:** Allow admins to review and act on user-generated content.
- **Analytics Module:** Deliver accurate data insights for system and user activities.

#### **Admin Panel (Optional):**

- Design an admin-exclusive interface with full access to administrative modules.
- Features include real-time dashboards, quick-action controls, and analytics reporting.

#### **Technical Team:**

- **Frontend Developer:**
  - Build user interfaces with pure HTML, CSS, and JavaScript.
  - Integrate Firebase for state management and real-time updates.
- **Backend Developer:**
  - Configure Firebase Authentication and Realtime Database.
  - Develop Firebase Cloud Functions for advanced backend logic.
  - Maintain secure data access policies.

## **10. Contact Us**

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**Phone:** +8801872933718

**Github:** <https://github.com/armmoon4>