Goa University

Taleigao - Goa

2024-2026

“UniGo: Move Together, Save Together”

A PROJECT SUBMITTED TO GOA UNIVERSITY IN PARTIAL FULFILMENT OF THE REQUIREMENT FOR THE DEGREE OF MCA

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Roll No.: 29

UniGo: Move Together, Save Together

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INTRODUCTION

UniGo is a dedicated ridesharing app created exclusively for college students, designed to enhance campus transportation by connecting students needing rides with those who have available seats on their bikes. The app promotes an eco-friendly and community-focused travel option within the college, making daily commutes more convenient, economical, and accessible. UniGo enables students to easily post and book rides, and manage ride statuses, fostering a cooperative environment that minimizes individual vehicle usage and contributes to a more sustainable campus culture.

Objective: The objective of UniGo is to make transportation within campus more efficient and to encourage students to share rides, thereby reducing traffic and promoting cost-sharing. By creating a private network limited to college students, UniGo prioritizes safety and accessibility, as students can rely on a trusted community of peers for transportation.

Technology Stack:

- **Development Environment:** Android Studio, for a native Android experience tailored to mobile users.
- **Design Tool:** Figma, to create an intuitive and engaging UI/UX.
- **Languages:** Java for back-end functionality and XML for UI, ensuring a robust and maintainable codebase.
- **Database:** Firebase Realtime Database, providing real-time data management that supports asynchronous data updates for ride postings and requests.
- **APIs:** Google Maps API, enabling location tracking, route mapping, and real-time position updates to enhance user navigation and interaction.

UniGo is designed to be scalable, secure, and user-friendly, offering a smooth onboarding experience for both drivers and passengers, and allowing future expansion as new features and functionalities are developed.

EXISTING SYSTEM

Existing ride-sharing platforms like Uber, Lyft, and Ola have transformed urban mobility by providing fast, user-friendly, and affordable transport options via smartphone apps. These platforms allow users to book rides instantly, view real-time tracking, and choose from a range of ride options based on budget or preference. Safety features such as driver background checks, route sharing, and in-app emergency support have become essential aspects of these services.

Dynamic pricing models adjust fares based on demand, while real-time data processing ensures efficient driver-rider matching. By continuously enhancing user experience and expanding features like ride scheduling, carpooling, and flexible payment options, these platforms offer convenient transportation solutions tailored to individual needs

FEATURES

UniGo currently includes basic functionalities centered on user roles: Admin and Regular User (Driver or Passenger). Each role has specific capabilities tailored to its needs, enabling a structured, role-based approach to ridesharing within the app.

Key Functionalities:

- **Authentication:**
    - Users sign in using their college email addresses. Based on their login credentials, they are assigned either an Admin role or a Regular User role. This segregation of roles allows for a customized user experience, where each role has access only to its specific functionalities.
    - Role-based permissions ensure that Admins have higher-level access, while Regular Users experience a streamlined interface focusing on their roles as drivers or passengers.

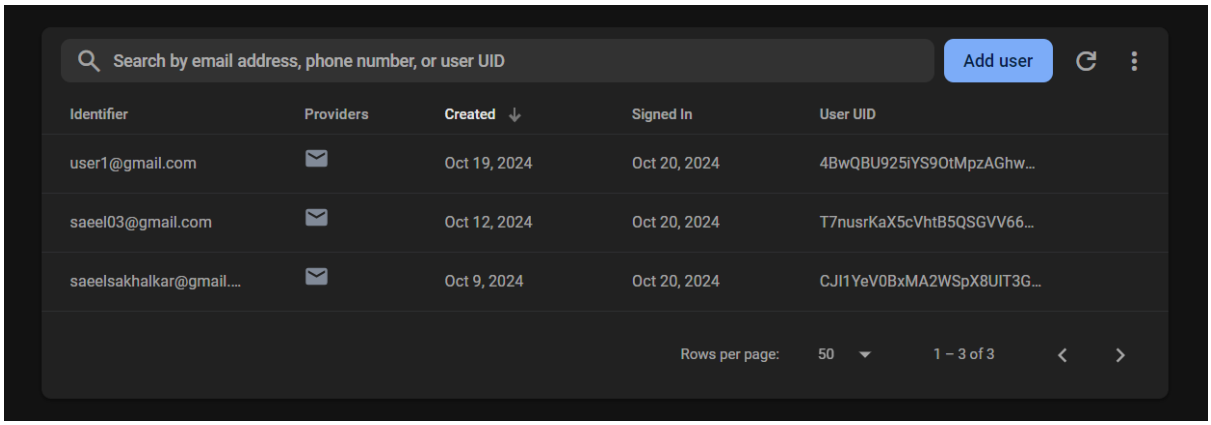
- **Admin Role**:
    - **User Management:** Admins have control over the app's user base, including the ability to add, modify, or delete users. This functionality is crucial to maintain an up-to-date and verified network of college students.
    - **Role Assignment:** Admins can assign or switch user roles, facilitating transitions for users who may need to change from driver to passenger or vice versa. This adds flexibility to accommodate students' varying transportation needs over time.
    - **Monitoring and Security:** Admins can view user details, allowing for oversight of the app's user community and ensuring the platform remains exclusive and safe for college students.

- **Regular User Role (Driver or Passenger):**
    - **Location Access:** Upon login, the app requests location access, allowing it to display the user's current position on the home screen. This initial access is crucial for enabling real-time navigation and ride-matching within the college vicinity.
    - **User Interface:**
        - **Home Screen**: The home screen acts as a central hub, where passengers can view available rides, and drivers have access to an additional button to post their own rides. This setup allows users to easily switch between finding and offering rides.
        - **Profile Screen:** The profile screen shows user details, such as name and contact information, and allows users to add or edit vehicle information (e.g., bike details). Users can switch roles here if they wish to become a driver or passenger, providing flexibility.
        - **Book Rides:**
            - Ride Listings: Passengers can browse through a list of available rides, each showing essential details like the driver's name, contact, vehicle type, and available seats.
            - Booking Requests: Once a passenger selects a ride, they can send a booking request to the driver. This interaction initiates a ride arrangement that the driver can then accept or reject, making the booking process interactive and secure.
        - **Notifications:** The app offers real-time notifications on the home screen, where passengers receive updates on their booking requests, such as pending, approved, or rejected status. This feature allows passengers to stay informed without needing to repeatedly check their requests.

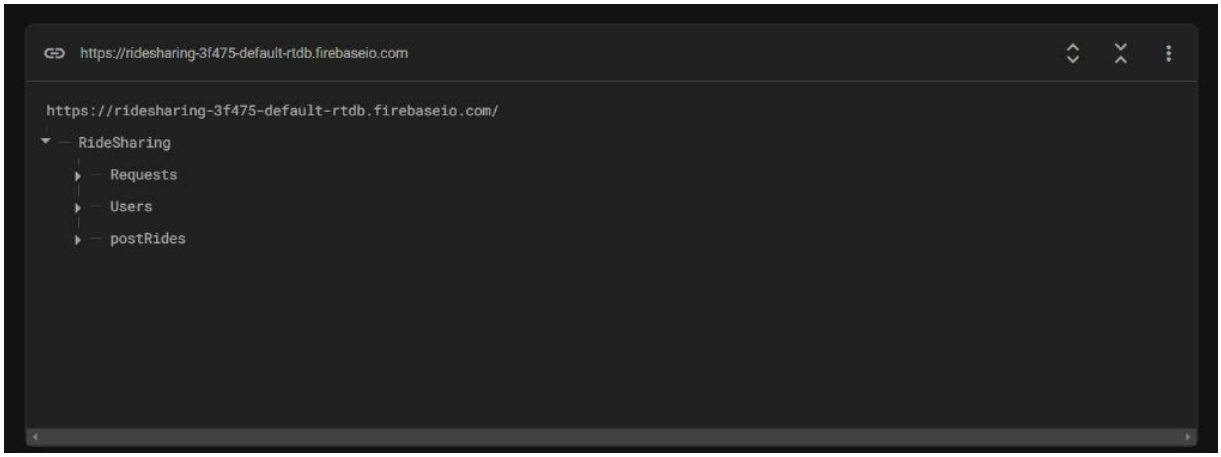
- **Ride Posting (for Drivers):** Drivers have access to a “Post Ride” button on the home screen, enabling them to list their available seats, set departure times, and specify start and end locations. This feature allows students who commute regularly to post ride availability, creating more opportunities for passengers to find rides.

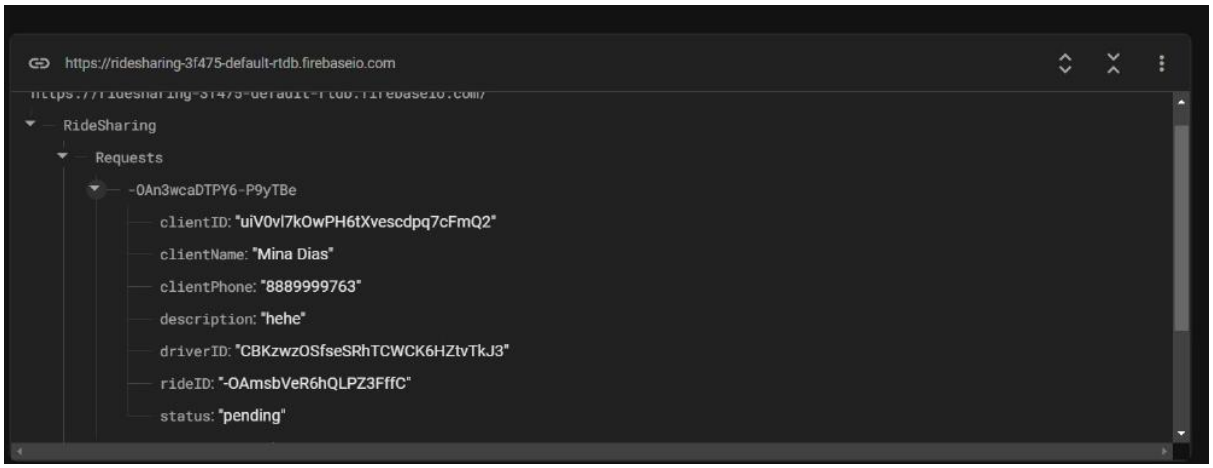
DATABASE SCHEMA

FIREBASE AUTHENTICATION



REALTIME DATABASE

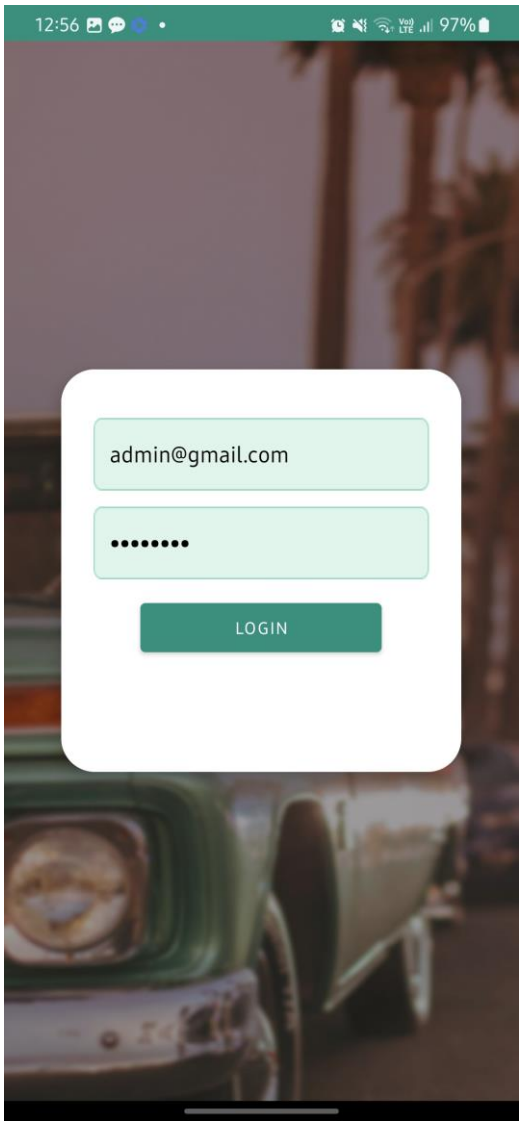




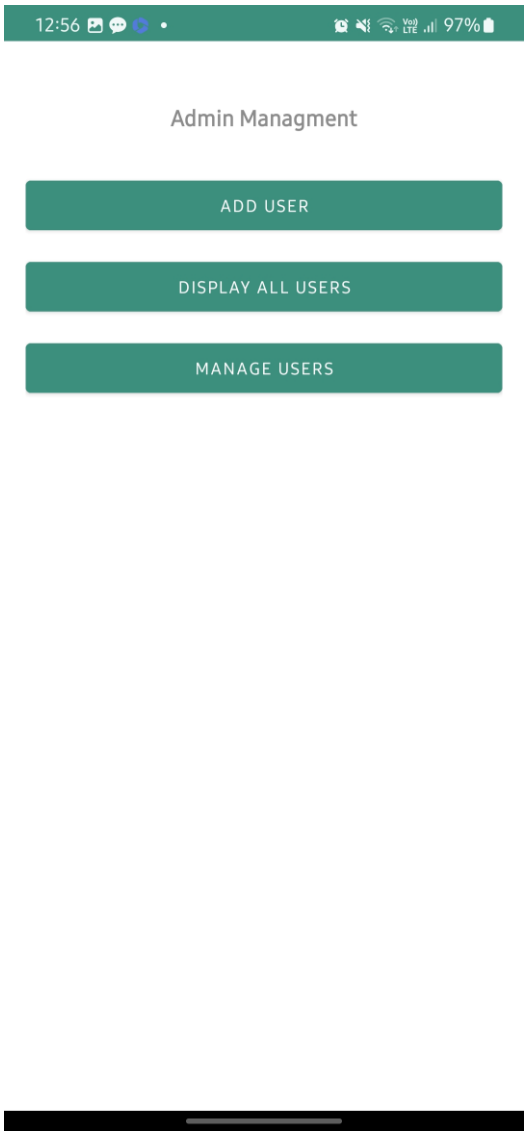
SCREEN SHOTS

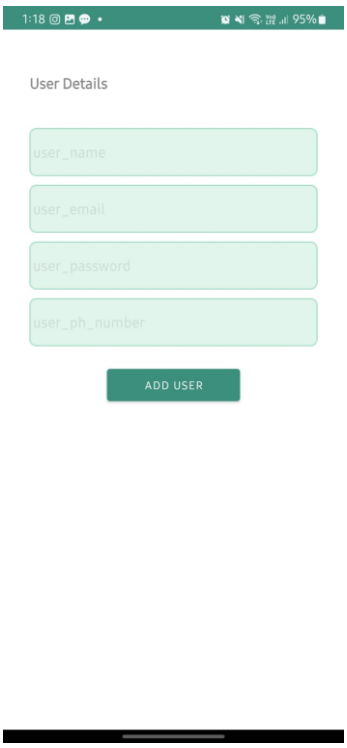
ADMIN

ADMIN LOGIN



ADMIN HOMEPAGE

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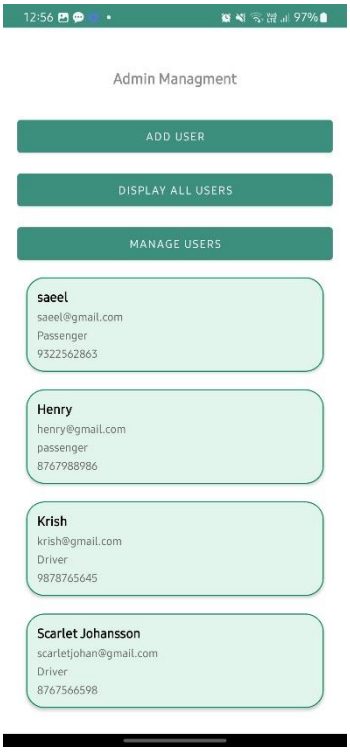
User Details
user_name
user_email
user_password
user_ph_number
ADD USER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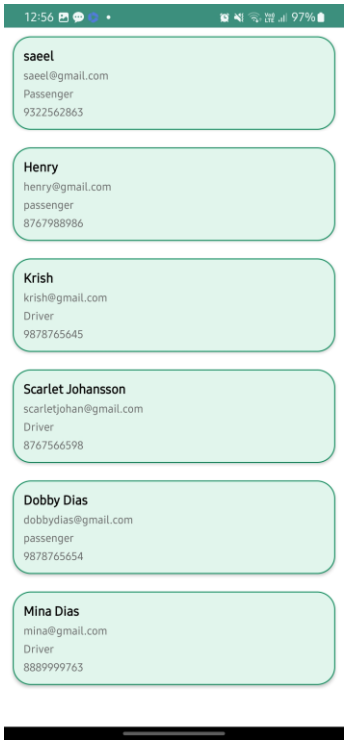
Admin Managment
ADD USER
DISPLAY ALL USERS
MANAGE USERS
saeel
saeel@gmail.com
Passenger
9322562863
Henry
henry@gmail.com
passenger
8767988986
Krish
krish@gmail.com
Driver
9878765645
Scarlet Johansson
scarletjohan@gmail.com
Driver
8767566598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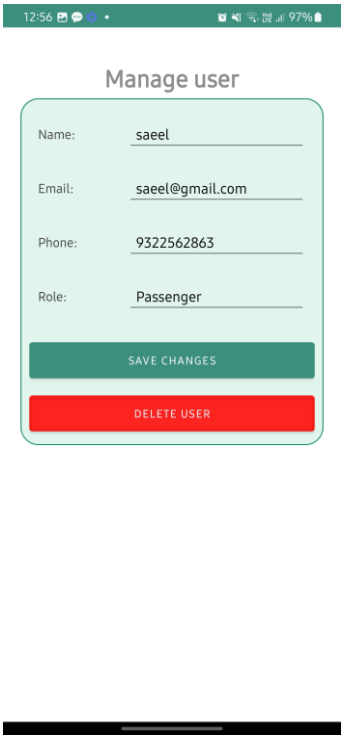
saeel
saeel@gmail.com
Passenger
9322562863
Henry
henry@gmail.com
passenger
8767988986
Krish
krish@gmail.com
Driver
9878765645
Scarlet Johansson
scarletjohan@gmail.com
Driver
8767566598
Dobby Dias
dobbydias@gmail.com
passenger
9878765654
Mina Dias
mina@gmail.com
Driver
8889999763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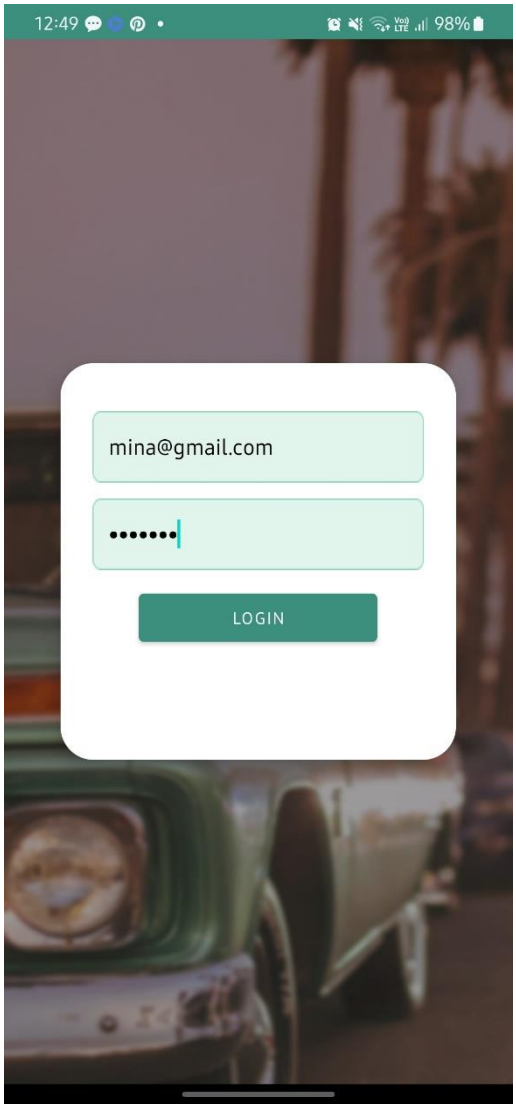
Manage user
Name:
saeel
Email:
saeel@gmail.com
Phone:
9322562863
Role:
Passenger
SAVE CHANGES
DELETE USER

USER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mina@gmail.com
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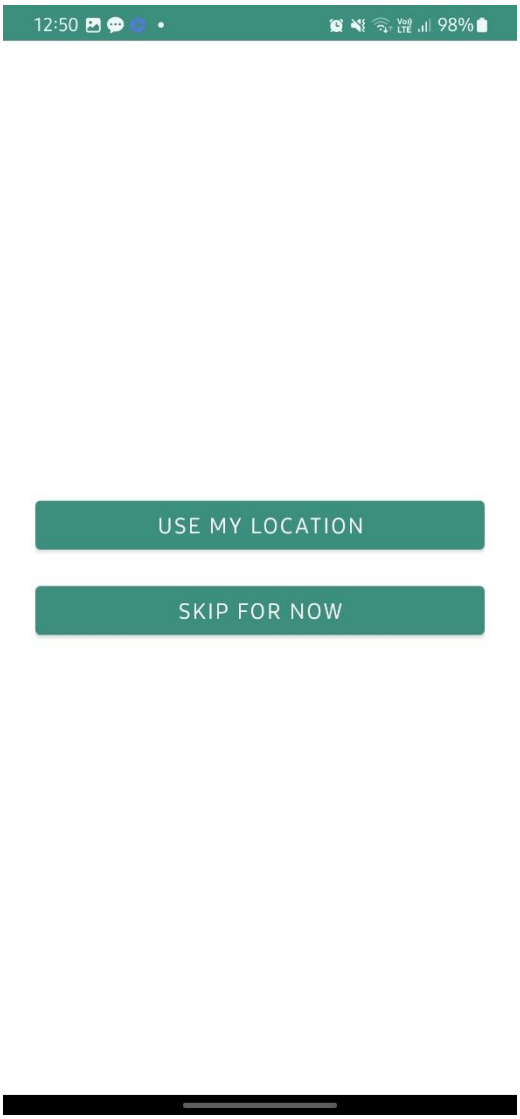
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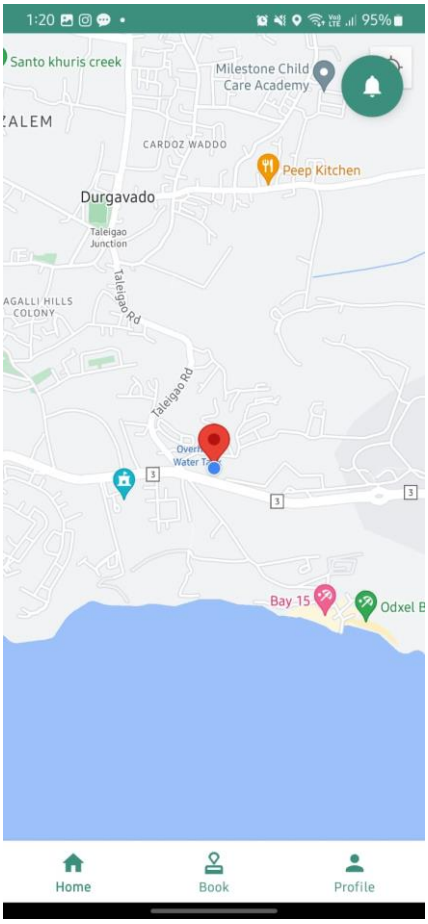
USE MY LOCATION
SKIP FOR NOW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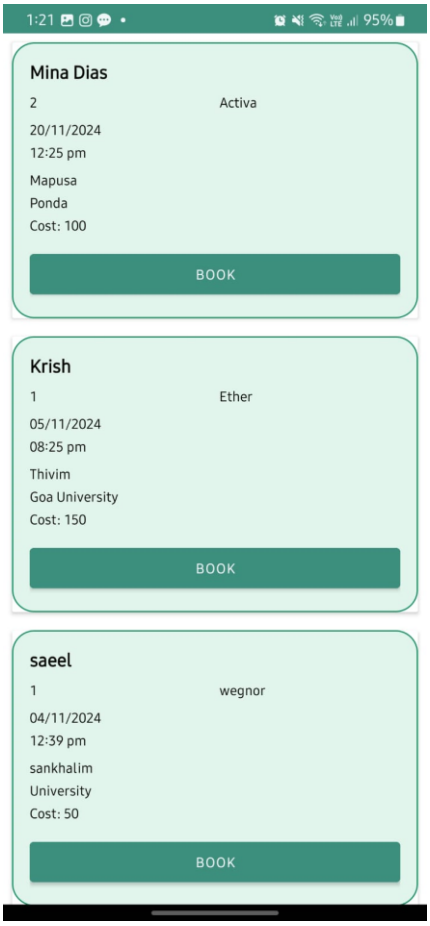
Santo khuris creek
Milestone Child Care Academy
CARDOZ WADDO
Peep Kitchen
Durgavado
Talegao Junction
Talegao Rd
Bay 15
Home
Book
Profile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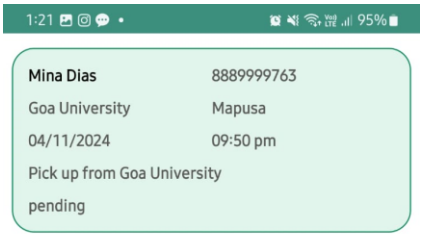
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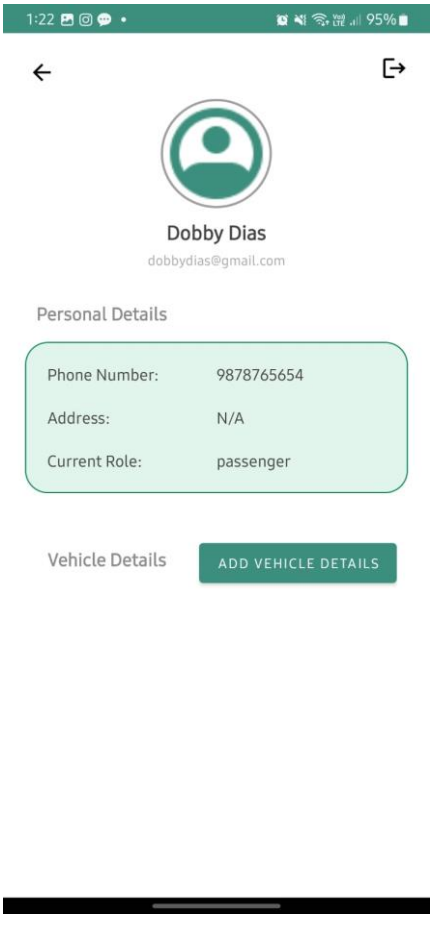
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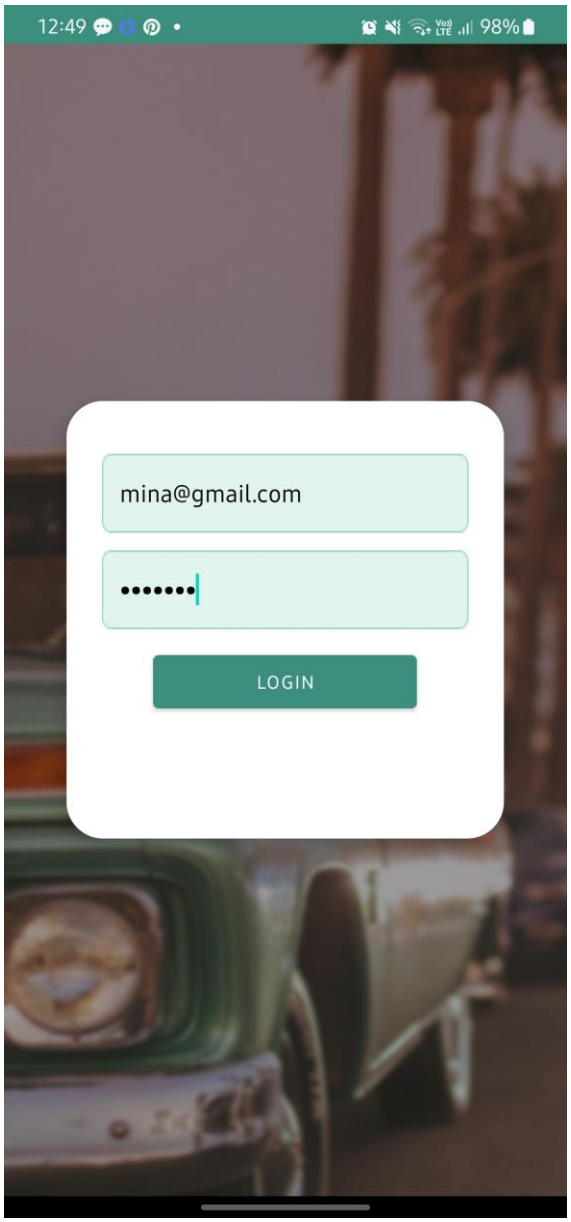
Dobby Dias
dobbydias@gmail.com
Personal Details
Phone Number:
9878765654
Address:
N/A
Current Role:
passenger
Vehicle Details
ADD VEHICLE DETAILS

DRIVER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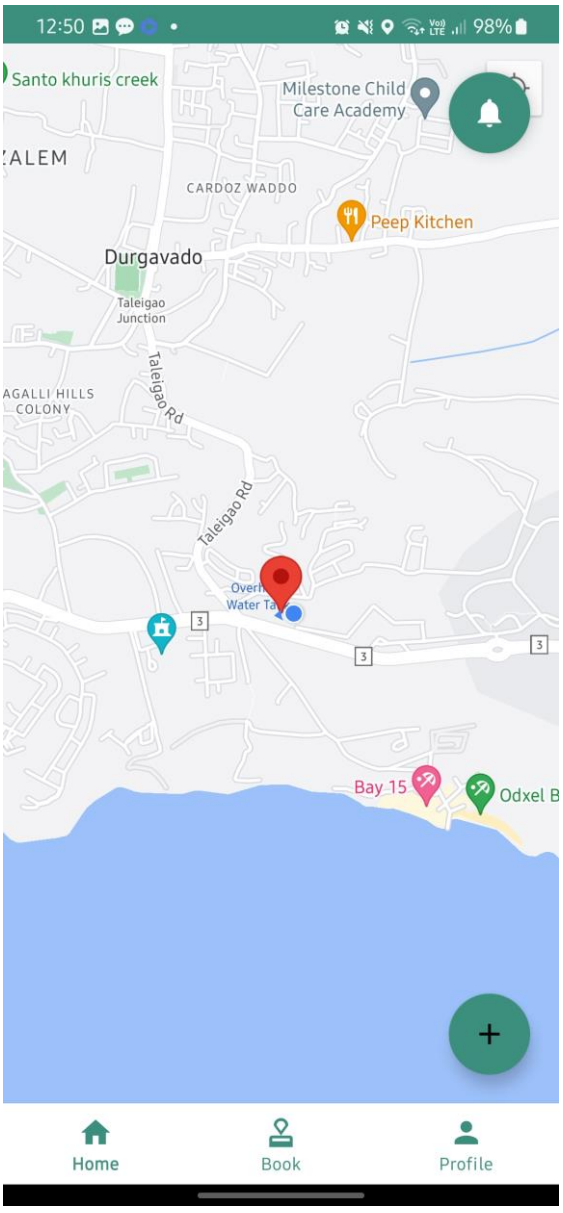
mina@gmail.com
LOGIN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Santo khuris creek
Milestone Child Care Academy
CARDOZ WADDO
Peep Kitchen
Durgavado
Taleigao Junction
AGALLI HILLS COLONY
Taleigao Rd
Taleigao Rd
Bay 15
Home
Book
Profile


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98%
Post Your Ride
8889999763
Activa
GA 03 B 2093
1
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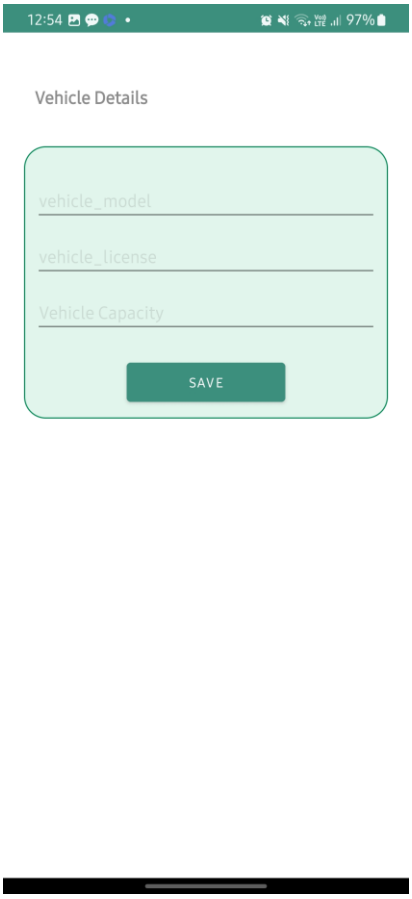
100
POST RIDE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Vehicle Details
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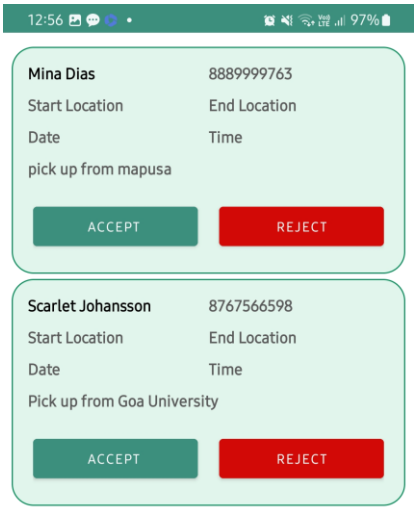
Vehicle Capacity
SAVE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Mina Dias
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Start Location
End Location
Date
Time
pick up from mapusa
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REJECT
Scarlet Johansson
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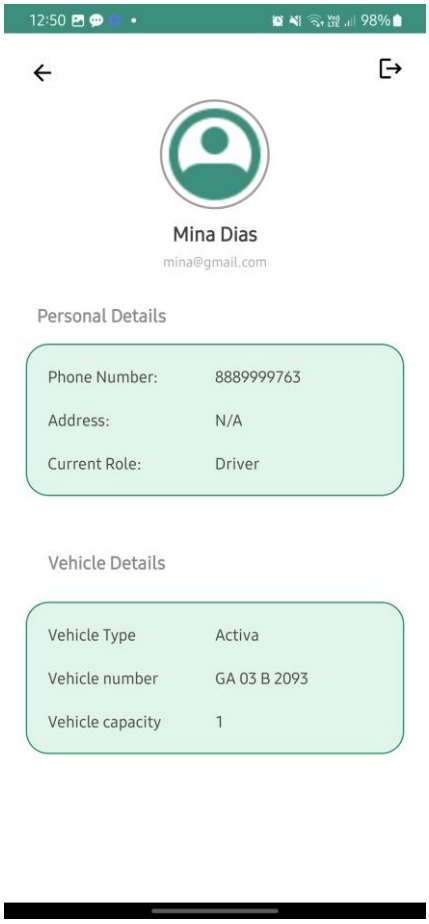
Start Location
End Location
Date
Time
Pick up from Goa University
ACCEPT
REJECT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Mina Dias
mina@gmail.com
Personal Details
Phone Number:
8889999763
Address:
N/A
Current Role:
Driver
Vehicle Details
Vehicle Type
Activa
Vehicle number
GA 03 B 2093
Vehicle capacity
1

GAPS IN THE CURRENT SYSTEM

While UniGo's current system provides a strong foundation, there are certain areas that require further development to enhance user experience, improve security, and make the system more robust. Addressing these gaps is essential for future updates to fully optimize UniGo's potential as a comprehensive ridesharing platform.

Areas of Improvement:

- **User Experience and Design:**
    - Feedback Mechanism: Currently, UniGo does not allow passengers and drivers to leave feedback for one another. A feedback or rating system would increase accountability, helping other users make informed decisions and creating a culture of reliability and trust.
    - Improved UI/UX: Some users may find the interface overly simplistic. Enhancing the design to provide a smoother experience for users with varying levels of tech proficiency can improve overall usability and user satisfaction. This includes clearer navigation elements, more visual cues, and perhaps even a tutorial for first-time users.
- **Ride Availability Management:**
    - **Adjustable Ride Status**: Once a driver posts a ride, there is currently no way to modify or update its availability (e.g., reducing available seats if a change occurs). Adding an option for drivers to update or withdraw their rides would reduce instances of overbooking and cancellations.
    - **Real-Time Tracking:** Currently, UniGo lacks a real-time ride-tracking feature, which limits passengers from tracking their booked rides. Adding this feature would not only improve convenience but also enhance safety by allowing passengers to monitor the driver's location as they approach the pickup point.

- **Security and Verification:**
    - **Identity Verification:** The system currently relies on email-based verification, which may not be stringent enough to prevent unauthorized users from accessing the app. Implementing a more secure verification process, such as college-issued ID verification or multi-factor authentication, would reduce the risk of misuse and ensure that only legitimate college students can access the platform.
- **Limited Communication:**
    - **Driver-Passenger Interaction:** The current system does not include in-app messaging or calling features, which limits real-time coordination between drivers and passengers. Adding an in-app communication option would facilitate smoother arrangements for pickup and drop-off, allowing users to clarify details without needing to rely on external communication apps.

FUTURE UPDATES

Our development team is actively working to address these identified gaps in upcoming releases of UniGo. Future updates will focus on improving the user interface, introducing additional security measures, adding feedback options, and integrating real-time tracking and in-app communication to enhance the overall ridesharing experience. By tackling these gaps, UniGo will continue to evolve as a trusted, feature-rich platform that meets the evolving needs of college students.

These improvements align with UniGo's mission to provide an efficient, safe, and student-centric ridesharing app that adapts to users' needs, thereby fostering a supportive, eco-friendly transportation network on campus.