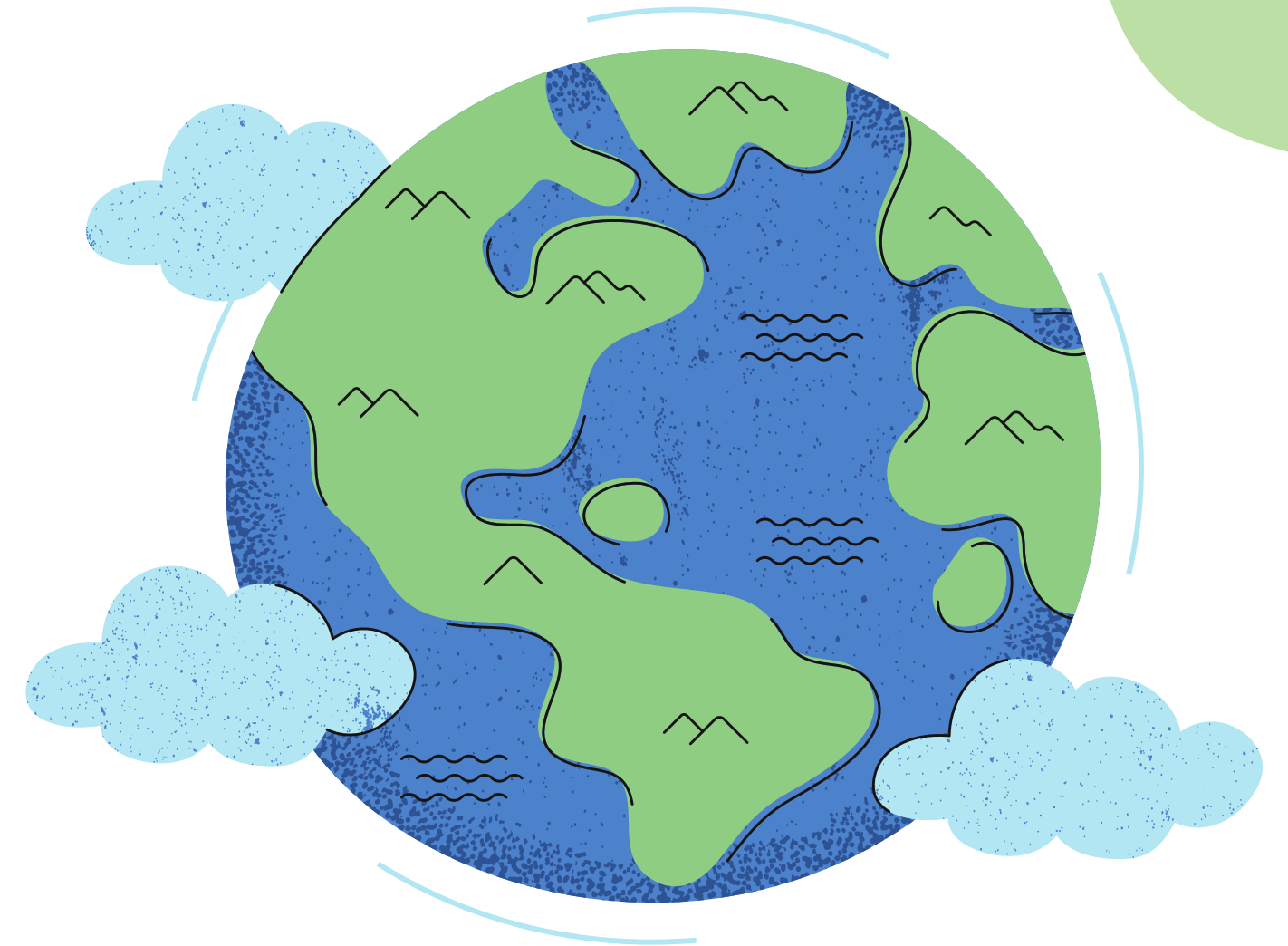


**RECYCLING  
REVOLUNTION APP**

**SaafPakistan**

**LETS PAINT PAKISTAN GREEN!**



Ali Sher (F2020-158)

Nouman Ali (F2020-149)

Mian Faizan Munawer (F2020-148)

# Problem

Pakistan's unstructured recycling system leads to disorganized waste disposal, causing environmental pollution and recyclable accumulation in landfills.

# Solution Methodology

- Researched on current recycling system in Lahore
- Got in touch with the local scrap dealers.
- Got in contact with 2 organizations (Active Apparels, Three Star Hosiery) and learned about their recycling structure.
- We conducted a survey on people's recycling habits.
- Researched on existing solutions.



# Findings

- Lahore Lacks a structured recycling system.
- No existing solutions similar to our app exist in Pakistan.
- We found out that Organizations recycle tons of waste on monthly basis.
- We also found out that the dealers who take this recyclable waste from the organizations have huge profit margins
- 83% of the people we surveyed did not recycle because they did not know any convenient means of recycling.
- 75% of the people said that they would start recycling if it were made convenient through an app.



# Solution

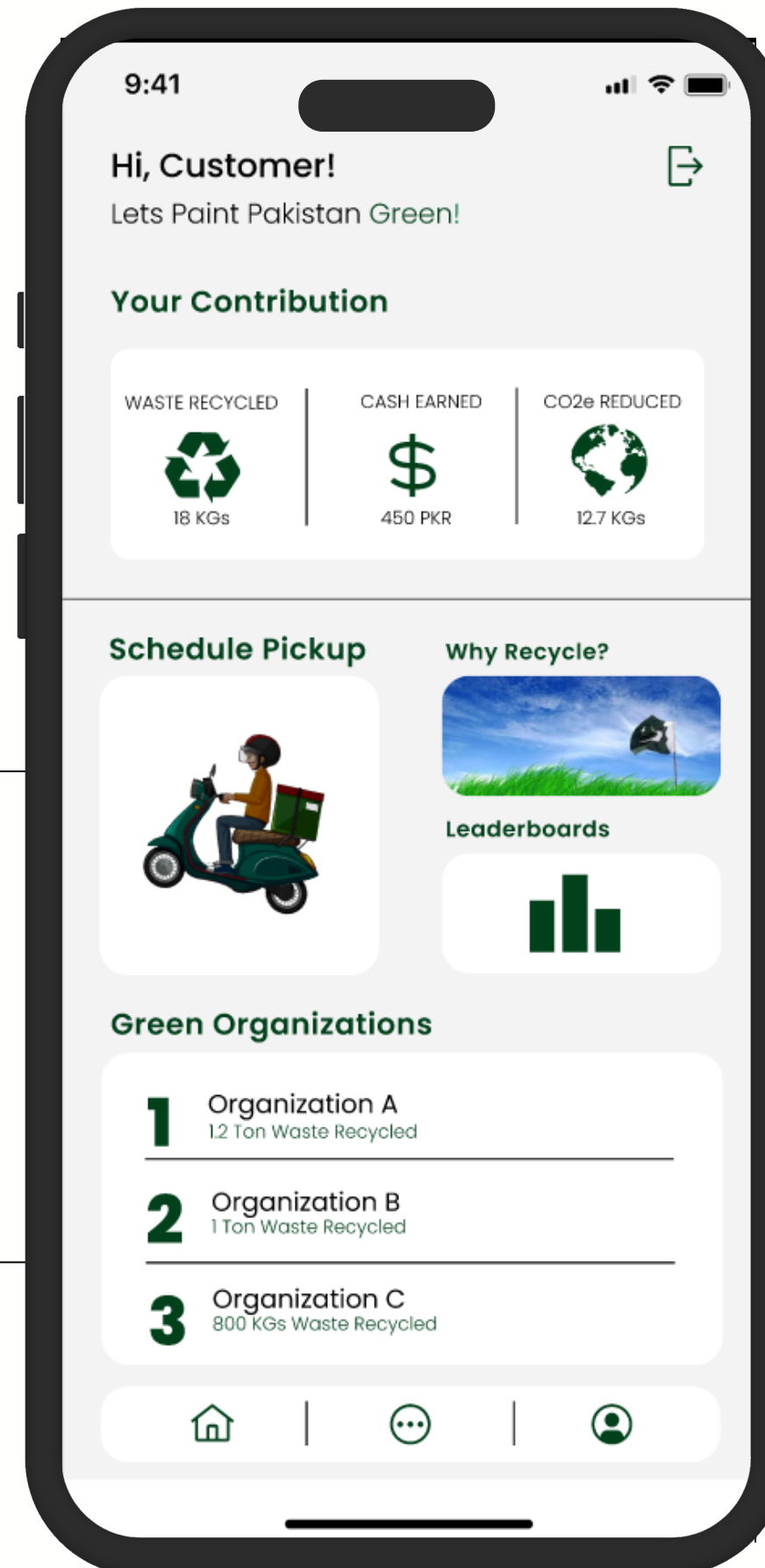
"Introducing SaafPakistan: Your App for a Cleaner, Greener Tomorrow!"



# Features

## ● Schedule Pickup for Recycling

## ● For Green Marketing



## ● Progress

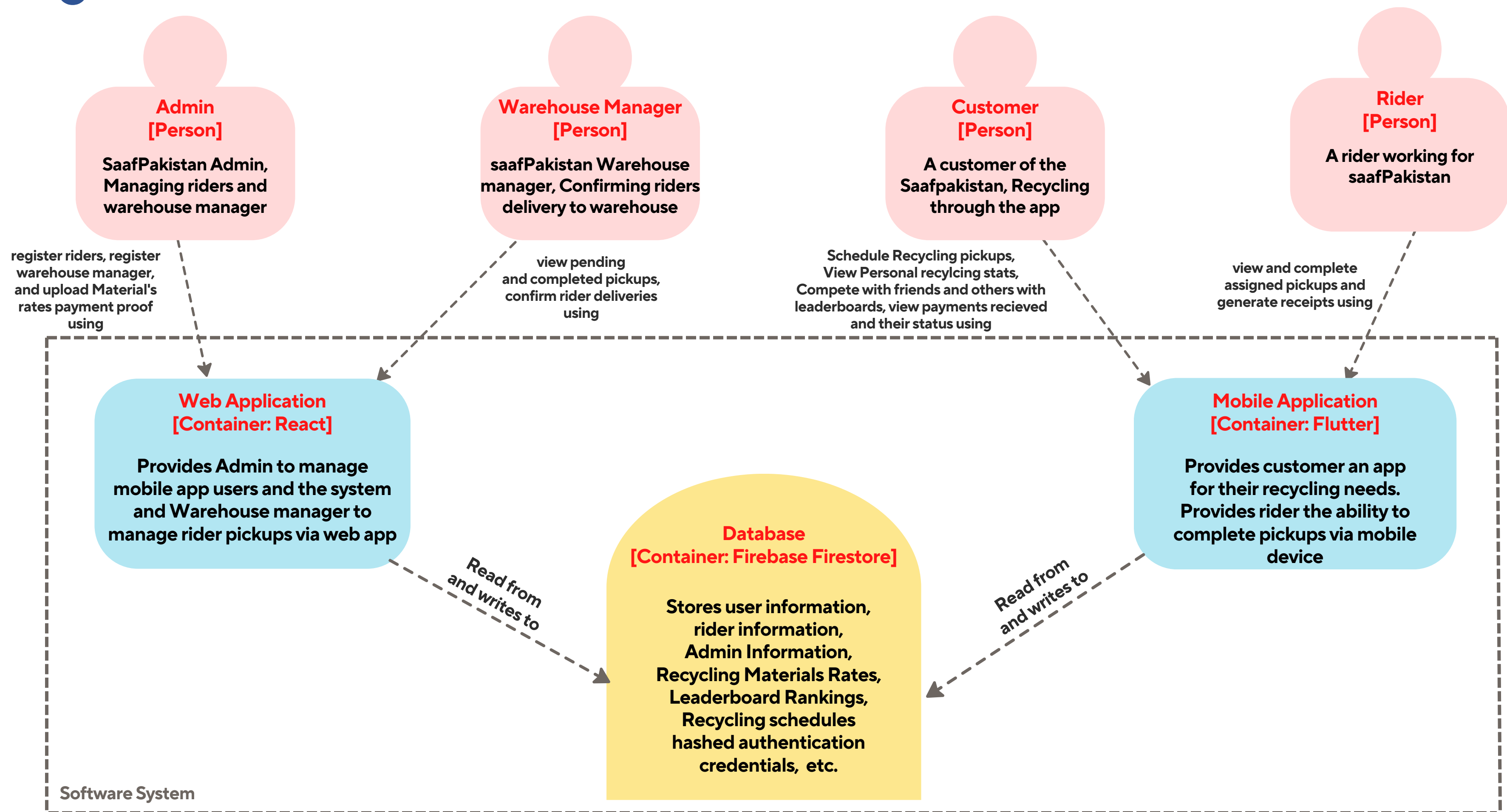
Get updated of your real-time progress

## ● Educational Content

## ● Gamification

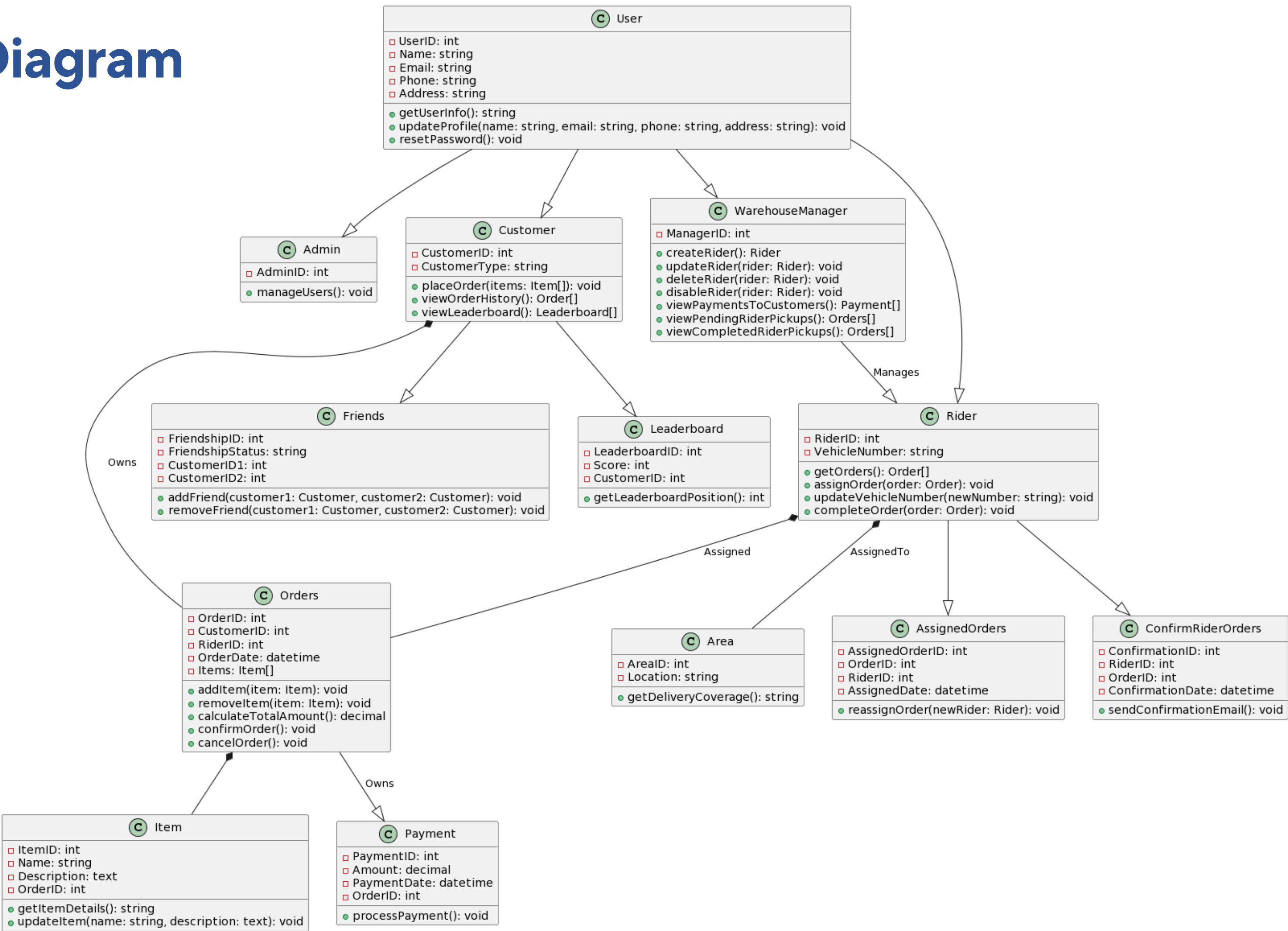
- A dynamic leaderboard system for individuals and businesses, fostering a sense of competition.
- Compete against friends

# High-Level Architecture





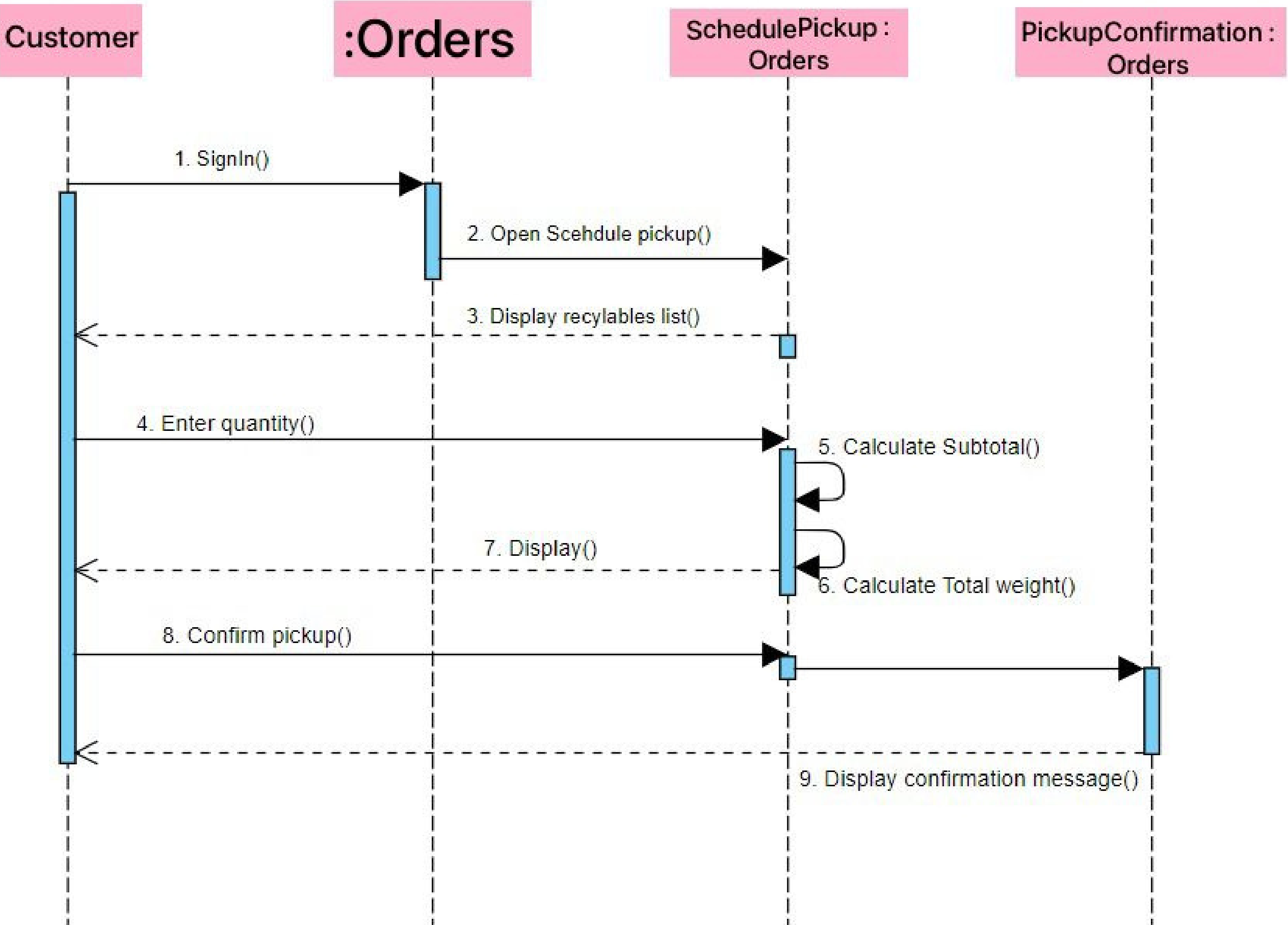
# Class Diagram



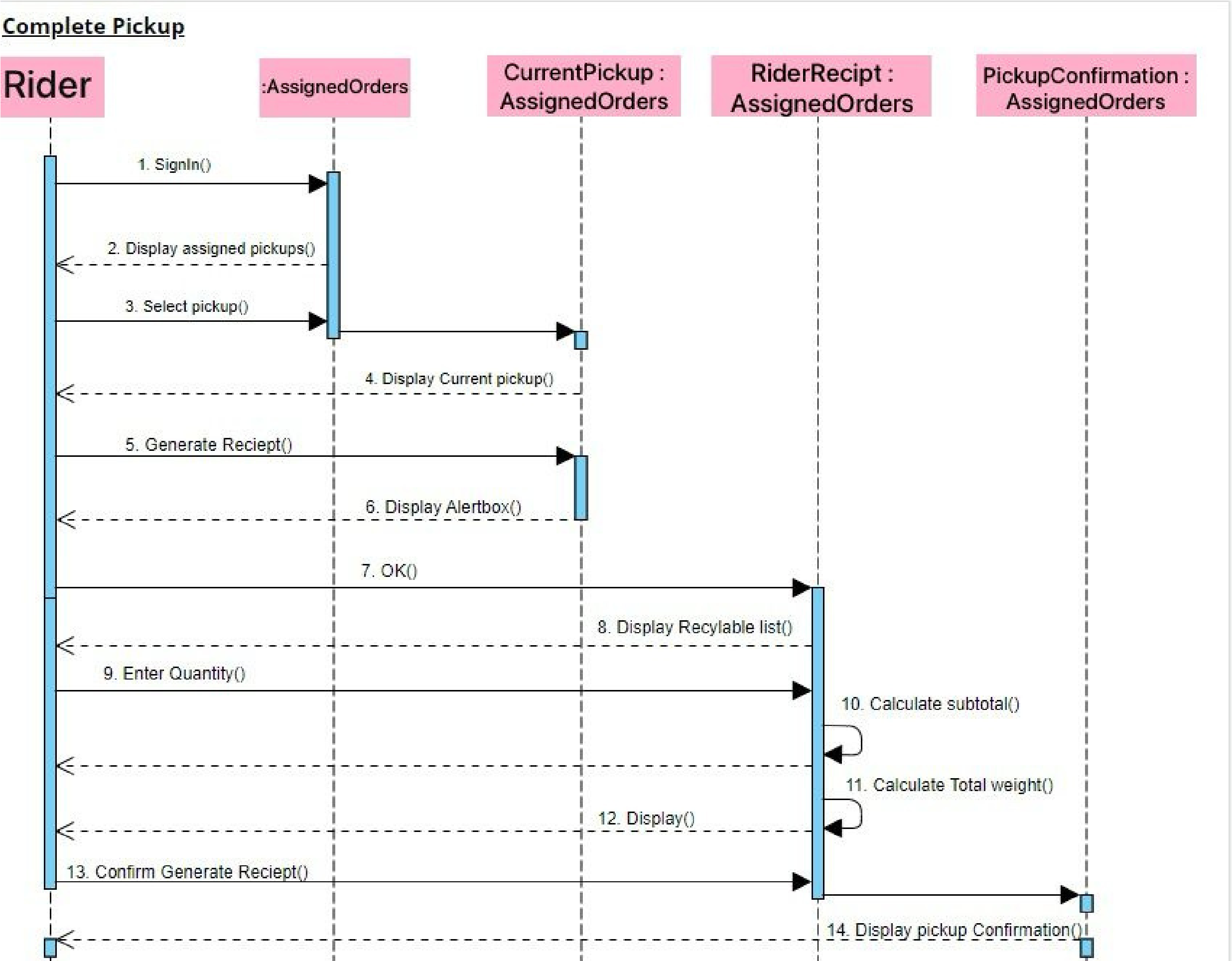


# Schedule Pickup Sequence Diagram

## Schedule Pickup



# Complete Pickup Sequence Diagram



# Project Database

## Collection

# Documents

## Reference

The screenshot displays the Firebase console interface. On the left, the 'rider' collection is selected, and a document with the ID 'KqpN7i05JWb5NxAjJlVEXBK5un82' is highlighted. A red bracket on the left side of the document list indicates that the document is selected. On the right, the document's data is shown in a key-value format. The keys are 'address', 'area', 'email', 'idCard', 'name', 'phone', 'role', 'uid', and 'vehicleNumber'. The values are 'Mughalpura, Lahore', '/Areas/KhVR0WJhllXI714tiNCM', 'm.arshad97@gmail.com', '3740235567292', 'Muhammad Arshad', '03024926901', 'rider', 'KqpN7i05JWb5NxAjJlVEXBK5un82', and 'AMQ 312' respectively. A red arrow points to the 'area' field value.

Collection	Document ID	Fields
rider	KqpN7i05JWb5NxAjJlVEXBK5un82	<ul style="list-style-type: none"><li>address: "Mughalpura, Lahore"</li><li>area: /Areas/KhVR0WJhllXI714tiNCM</li><li>email: "m.arshad97@gmail.com"</li><li>idCard: "3740235567292"</li><li>name: "Muhammad Arshad"</li><li>phone: "03024926901"</li><li>role: "rider"</li><li>uid: "KqpN7i05JWb5NxAjJlVEXBK5un82"</li><li>vehicleNumber: "AMQ 312"</li></ul>

# Code Snippet React App

## Fetching Warehouse Managers Data

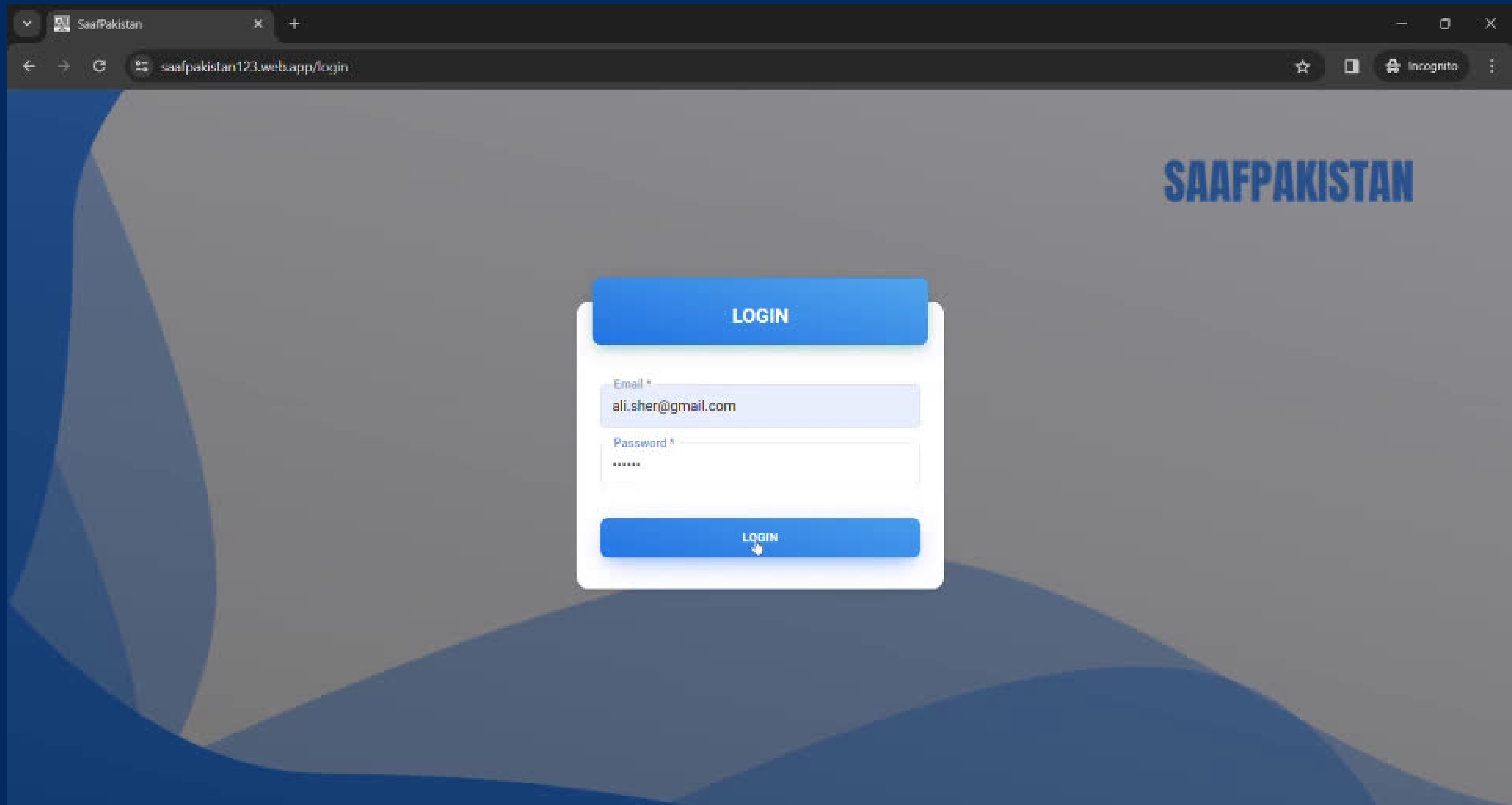
```
useEffect(() => {  
  const fetchWarehouseManagersData = async () => {  
    try {  
      const warehouseManagerCollectionRef = collection(  
        db,  
        "warehouseManager"  
      );  
      const querySnapshot = await getDocs(warehouseManagerCollectionRef);  
  
      const warehouseManagersData = [];  
      for (const docSnap of querySnapshot.docs) {  
        const warehouseManager = docSnap.data();  
        const warehouseManagerId = docSnap.id;  
  
        const warehouseManagerObject = {  
          id: warehouseManagerId,  
          name: warehouseManager.name,  
          email: warehouseManager.email,  
          idCard: warehouseManager.idCard,  
          phone: warehouseManager.phone,  
          address: warehouseManager.address,  
        };  
        warehouseManagersData.push(warehouseManagerObject);  
      }  
  
      setWarehouseManagers(warehouseManagersData);  
      setLoading(false);  
    } catch (error) {  
      console.error("Error fetching warehouseManagers: ", error);  
      setError("Error fetching data. Please try again later.");  
      setLoading(false);  
    }  
  };  
  fetchWarehouseManagersData();  
}, []);
```

# Code Snippet Flutter App

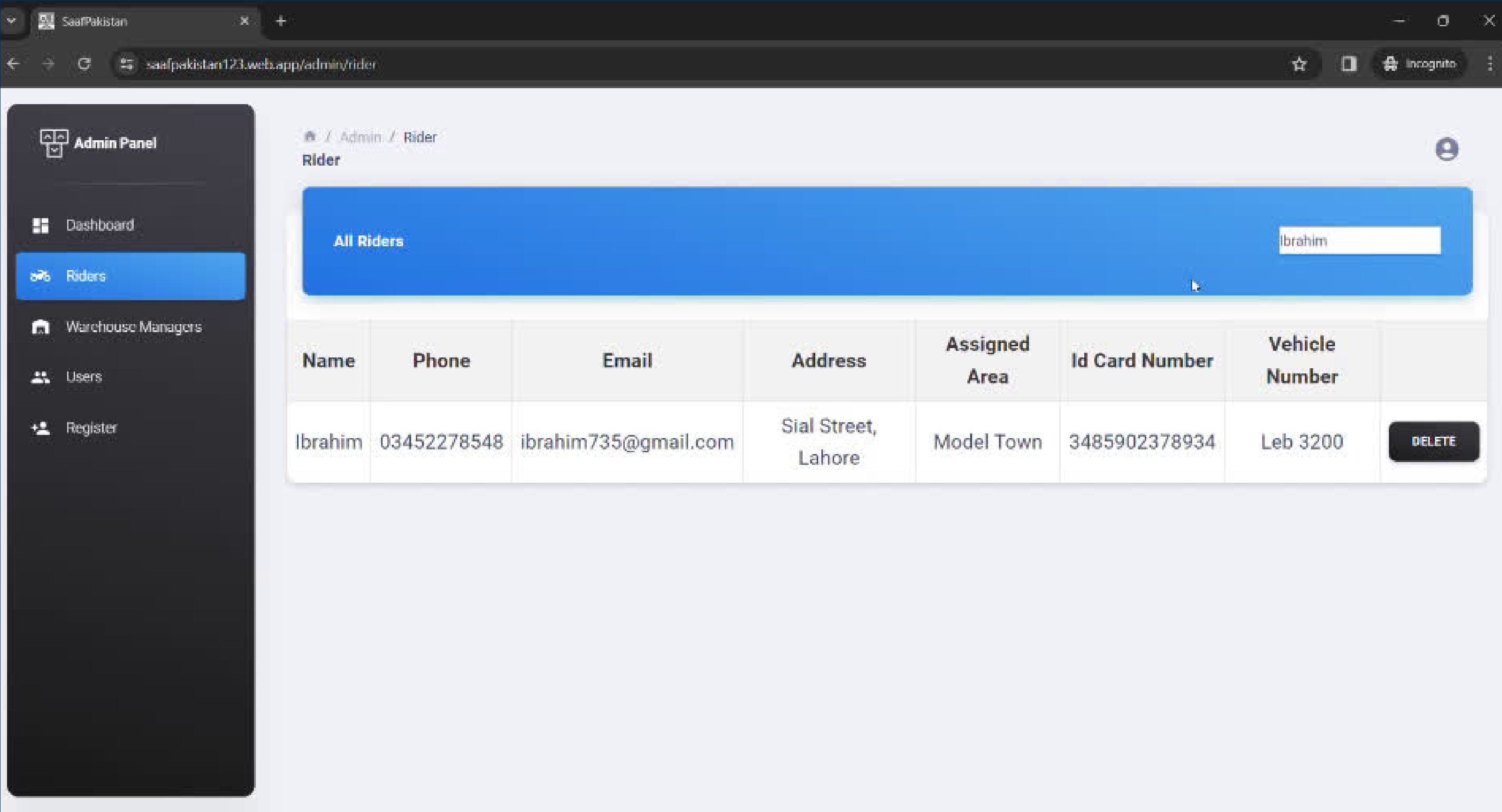
## Getting User Data for Customer Login

```
Future<Map<String, dynamic>> getUserData(String uid) async {  
  try {  
    DocumentSnapshot documentSnapshot =  
      await _firestore.collection('appUsers').doc(uid).get();  
    if (documentSnapshot.exists) {  
      return documentSnapshot.data() as Map<String, dynamic>;  
    } else {  
      print('User data not found');  
      return {};  
    }  
  } catch (e) {  
    print('Error fetching user data: $e');  
    return {};  
  }  
}
```

# Web App Admin login

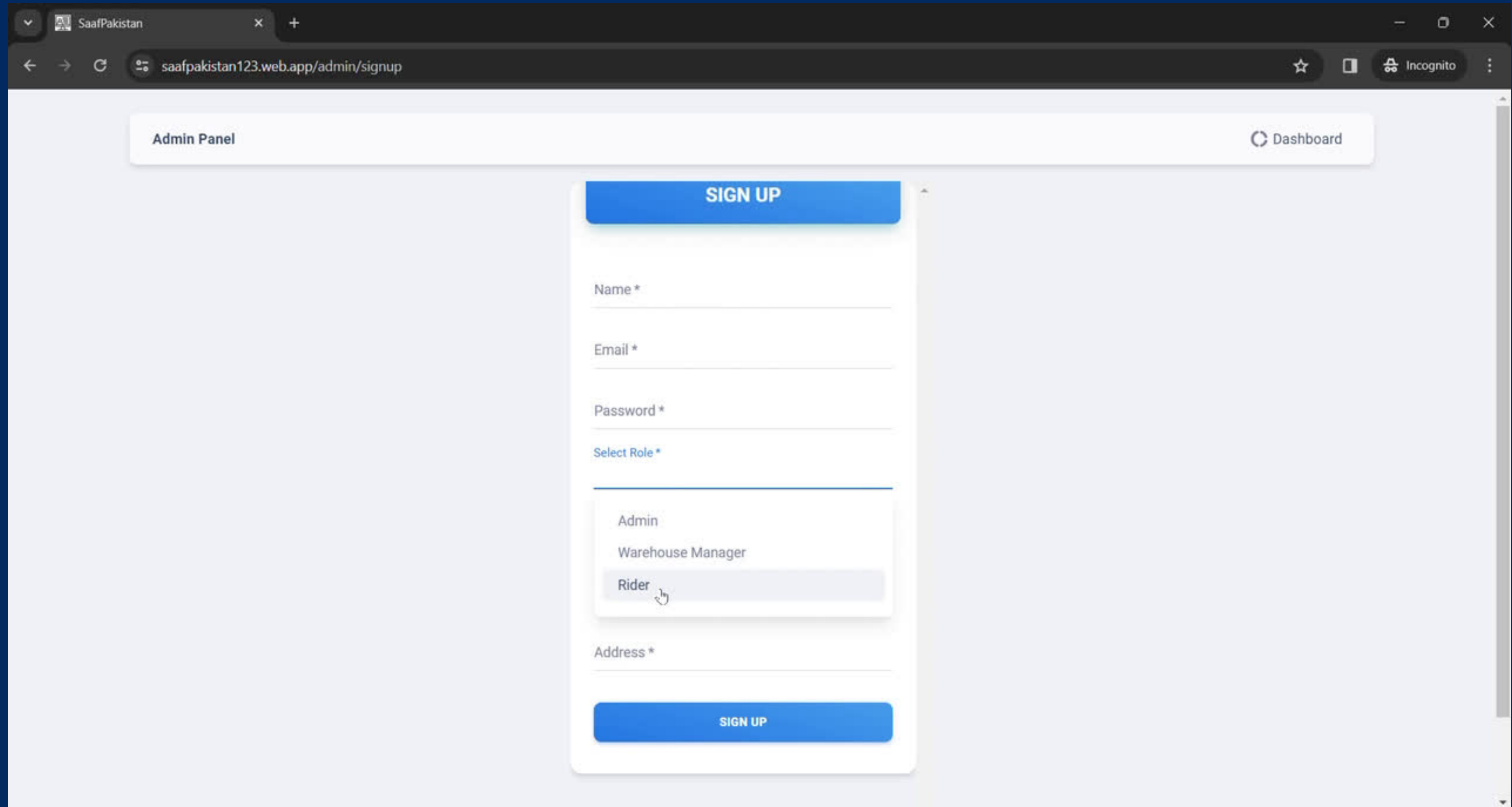


# Web App View All User Details





# Web App Registration Form



The image shows a web browser window with the address bar displaying "saafpakistan123.web.app/admin/signup". The page has a dark theme. At the top, there is a navigation bar with "Admin Panel" on the left and a "Dashboard" link with a refresh icon on the right. The main content area features a white registration form titled "SIGN UP" in a blue header. The form contains the following fields: "Name \*" (text input), "Email \*" (text input), "Password \*" (text input), "Select Role \*" (dropdown menu), and "Address \*" (text input). The dropdown menu is open, showing three options: "Admin", "Warehouse Manager", and "Rider", with "Rider" selected. A blue "SIGN UP" button is located at the bottom of the form.

Admin Panel [Dashboard](#)

## SIGN UP

Name \*

Email \*

Password \*

Select Role \*

- Admin
- Warehouse Manager
- Rider

Address \*

SIGN UP

# Web App Warehouse Manager login

Saaf Pakistan

saafpakistan123.web.app/warehouseManager/rider

Incognito

Warehouse Manager Panel

Dashboard

Riders

Add Rider

WarehouseManager / Rider

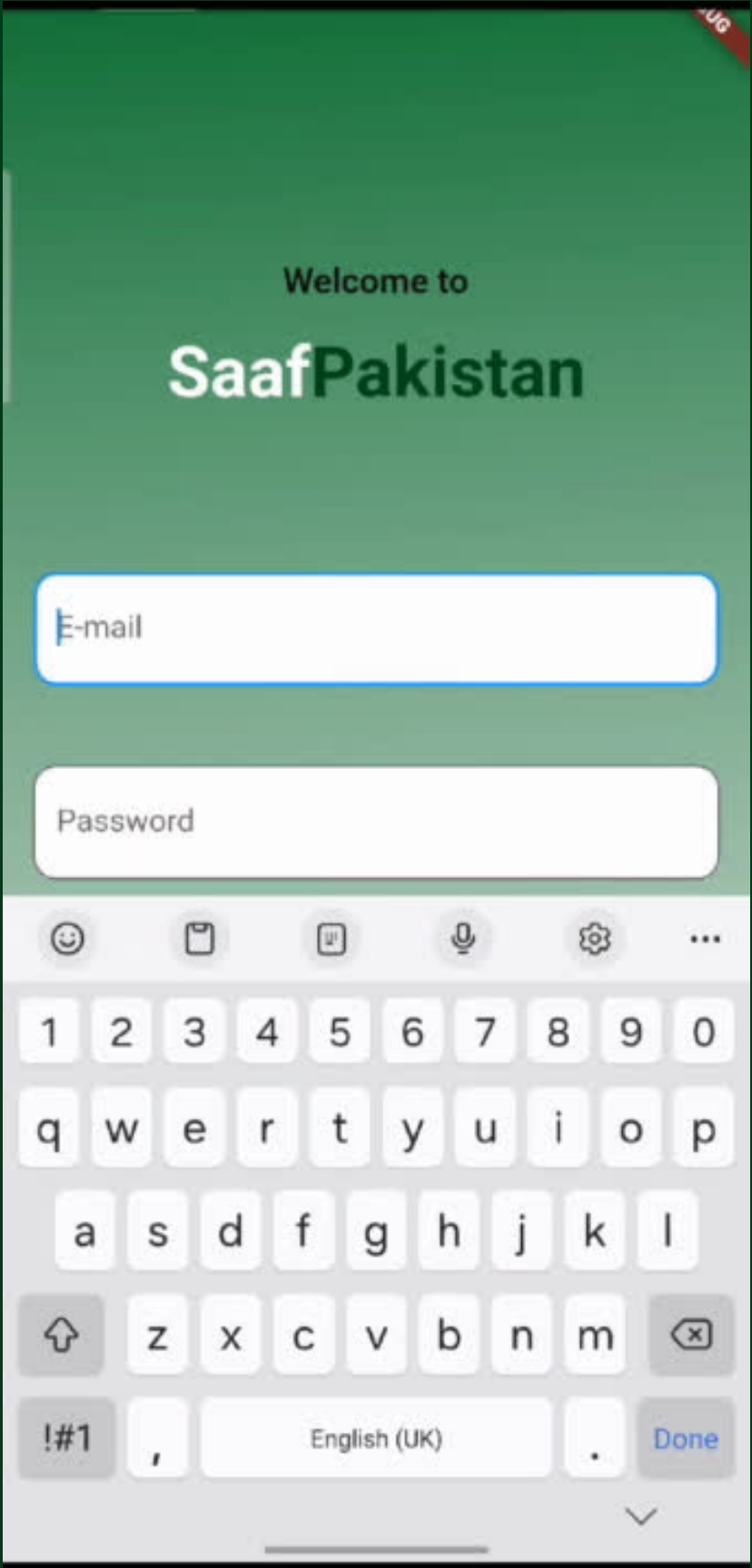
Rider

All Riders

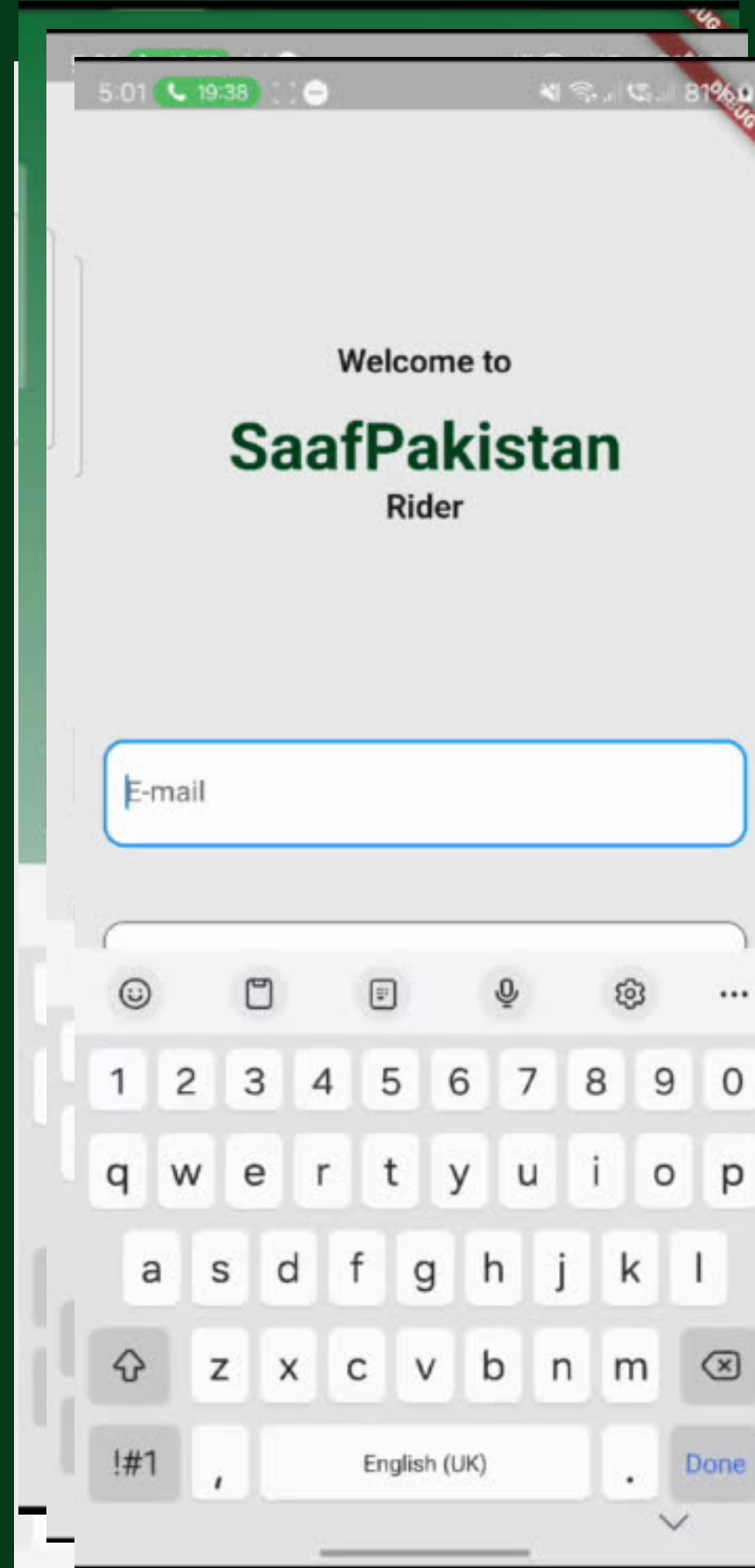
Search

Name	Phone	Email	Address	Assigned Area	Id Card Number	Vehicle Number	
Muhammad Arshad	03024926901	m.arshad97@gmail.com	Mughalpora, Lahore	Phase 4	3740235567292	AMQ 312	DELETE
Ibrahim	03452278548	ibrahim735@gmail.com	Sial Street, Lahore	Model Town	3485902378934	Leb 3200	DELETE
Fazal Rehman	03035689754	fazal.rehman@gmail.com	Ali Park, Lahore	Wapda Town	3430489347856	Lee 6257	DELETE
Rider	03036018972	rider@gmail.com	Valencia, Lahore	Wapda Town	3410126240405	Lec 897	DELETE

# Mobile App Customer Login



# Mobile App Schedule Pickup



# Mobile App Customer Profile and Why Recycle page

5:0018:2580%

X

Profile

Name

Faizan

Email

customer@gmail.com

Phone

03124896330

Area

Wapda Town

Address

House Number 142, A block

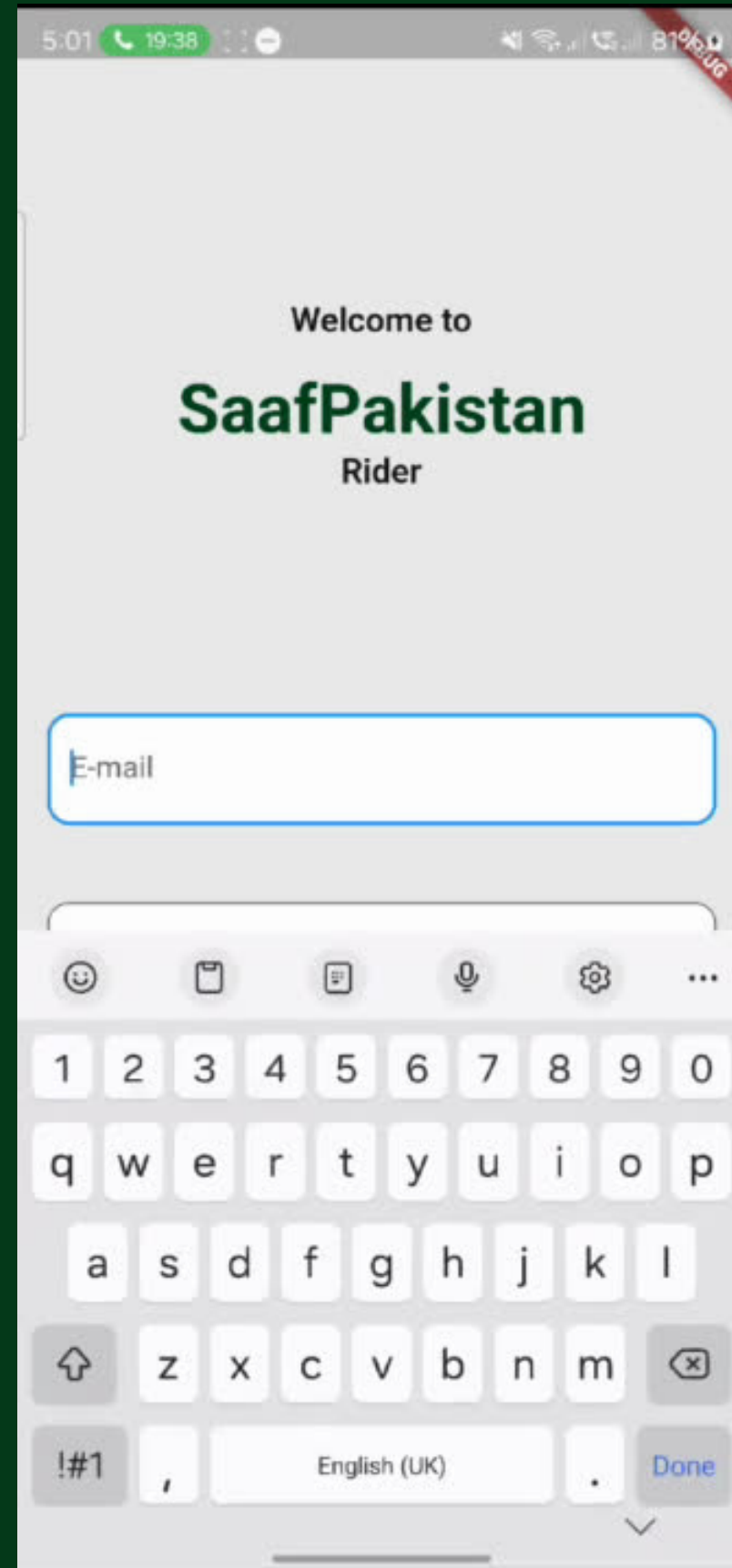
Save

🏠

≡

👤

# Mobile App Rider login & Profile



# Issues

# Solution

<b>Finalizing Language for Mobile app development</b>	<b>We opted for flutter as we were studying a course on it and knew that it would be helpful in our development.</b>
<b>Learning React from Scratch</b>	<b>Opted for online courses and google.</b>
<b>Finalizing project database</b>	<b>Finalized firebase as we were actively studying firebase operations in the semester course.</b>
<b>Overflow error when opening keyboard flutter</b>	<b>Used SingleChildScrollView widget</b>
<b>Adding reference in firebase database through react app</b>	<b>ChatGPT and Google helped to resolve this issue</b>
<b>Schedule Pickup Page re-renders after every change</b>	<b>Yet to be resolved</b>
<b>Text fields reset when closing keyboard on profile page</b>	<b>Yet to be resolved</b>



# Future Plans Mobile App

- Develop leaderboards component (Gamification)
- Develop friends component (Gamification)
- Optimize schedule pickup algorithm
- Develop customer recycling Statistics display
- Develop order history component
- Develop payment history and reward component
- Develop receipt component for customer
- Develop pickup component for rider
- Develop receipt generation component for rider
- Develop approval component for rider
- Integrate TPL maps API for rider routes and customer address
- Deploy mobile app on playstore

# Future Plans Web App

- Develop dashboard (stats)
- Develop update feature for all components
- Develop uploading payment proof
- Develop view pending payments
- Develop uploading tips and tricks
- Develop create and updating recycling items and rates
- Develop view pickups component ( pending, completed, cancelled)

**THANK YOU VERY MUCH!**