SRS of Shuttle Bus Tracker app

<table>
<tr><th colspan="6">Introduction</th></tr>
<tr><td>Purpose</td><td colspan="5">The purpose of this SRS (Software Requirements Specification) is that University students can use the shuttle bus tracker app to let the students know where the buses are so that they can get on the bus timely.</td></tr>
<tr><td>Project Scope</td><td colspan="5">University students and shuttle bus drivers will both be able to utilize the Shuttle Bus Tracker app. It will give students a way to let the driver know where they are and let the driver handle pick-up requests.</td></tr>
<tr><td rowspan="2">Intended Audience and Reading Suggestions</td><td colspan="2">Intended Audience:</td><td colspan="3">Reading Suggestions:</td></tr>
<tr><td>Development Team: Responsible for designing, implementing, and testing the app.</td><td>Quality Assurance Team: makes sure the application operates well and complies with all criteria.</td><td>Design guidelines for mobile apps: the guidelines for designing mobile applications.</td><td>Location Services: How to work the applications of GPS(Global Positioning System) technology.</td><td>Security and Privacy: Make sure you are familiar with data security measures.</td></tr>
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<tr><td rowspan="2">References</td><td>College Bus Tracker Android Application :
T.Prasanth. “College Bus Tracker Android Application.” IRJET, International Research Journal of Engineering and Technology (IRJET), June 2020, https://www.irjet.net/archives/V7/i6/IRJET-V7I6832.pdf. Accessed 22 June 2023.</td></tr>
<tr><td>A Mobile Application for Bus Tracking System :
Ajinkya Sarnobat. “A Mobile Application for Bus Tracking System.” International Journal of Innovative Research in Technology, INTERNATIONAL JOURNAL OF INNOVATIVE RESEARCH IN TECHNOLOGY, June 2016, https://www.ijirt.org/master/publishedpaper/IJIRT143707_PAPER.pdf. Accessed 22 June 2023.</td></tr>
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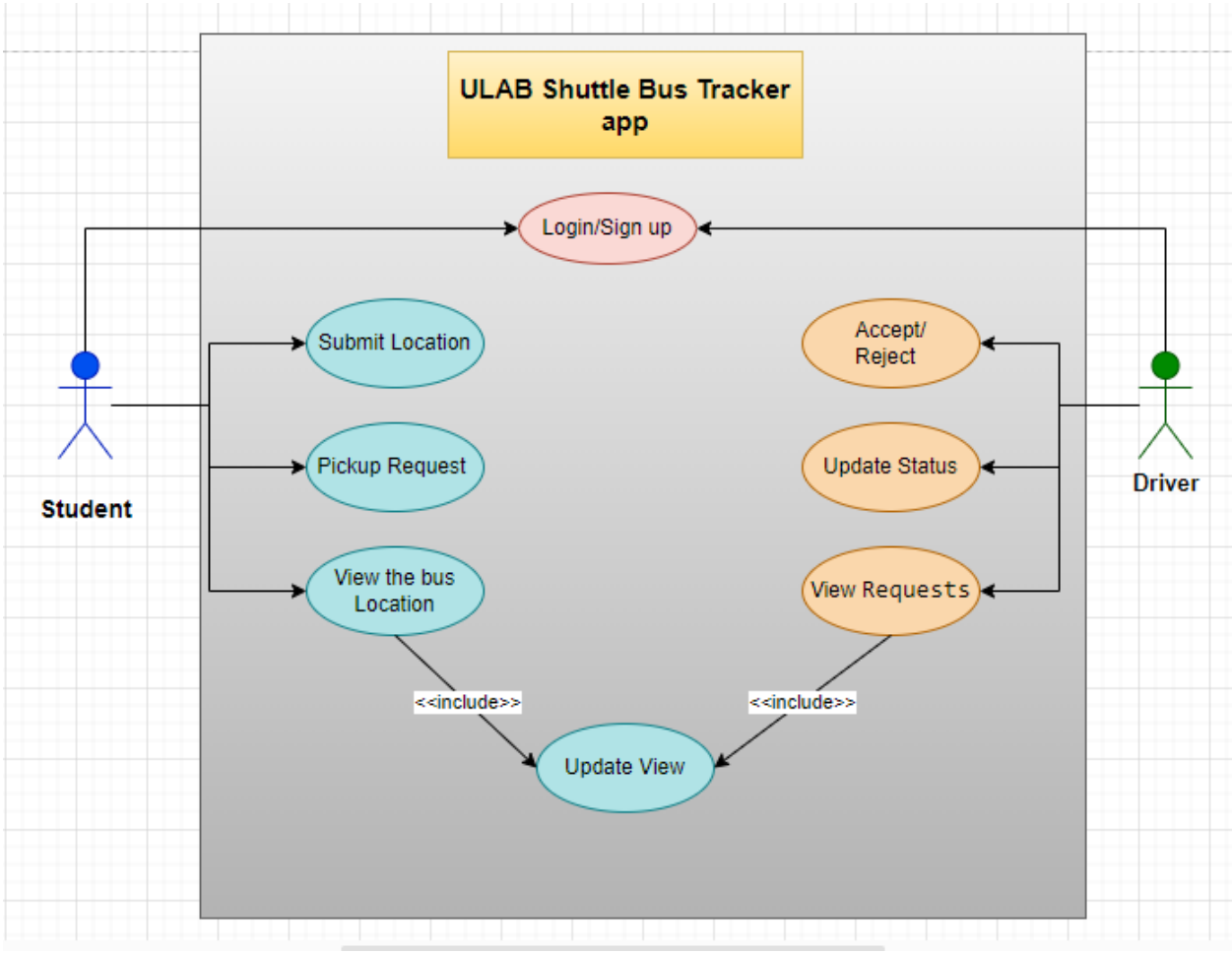
Overall Description	
Product Perspective	The Shuttle Bus Tracker app will be a stand-alone program that works with iOS and Android mobile devices.To manage communication between students and drivers, it will work with a backend server.
Product Features	Bus and Passenger location on map, Bus seat availability, Passenger Validation, Bus departure and arrival time notification.
User Classes and Characteristics	University students and shuttle bus drivers are the main users of the Shuttle Bus Tracker app. The app will be used by students to provide their location and request a pick-up, and by drivers to view student requests and effectively handle pick-ups.
Design and implementation Constraints	● The app should be intuitive and user-friendly, requiring minimal training for both students and drivers. ● The app should be compatible with a range of mobile devices and operating systems.
Assumptions and Dependencies	● Internet Connectivity ● Mobile Device Compatibility ● GPS services
	● Dependent on a backend server ● Depend on the underlying mobile operating systems (ios and Android) and their associated development frameworks and guidelines.

Functional Requirements	
User Registration and Authentication	● Students and drivers should be able to create accounts and authenticate themselves to access the app.
Student Functions	● Students should be able to submit their location information. ● Students should be able to request a pick-up from their current location. ● Students should be able to view the estimated time of arrival for the shuttle bus.
Driver Functions	● Drivers should be able to log in to the app using their credentials. ● Drivers should be able to view student pick-up requests. ● Drivers should be able to accept or reject pick-up requests. ● Drivers should be able to update their current location and availability status.
Administration Functions	● An administrator should have the ability to manage user accounts and access control.
Communication and Notifications	● The app should facilitate real-time communication between students and drivers. ● Students should receive notifications about the status of their pick-up request. ● Drivers should receive notifications about new pick-up requests.

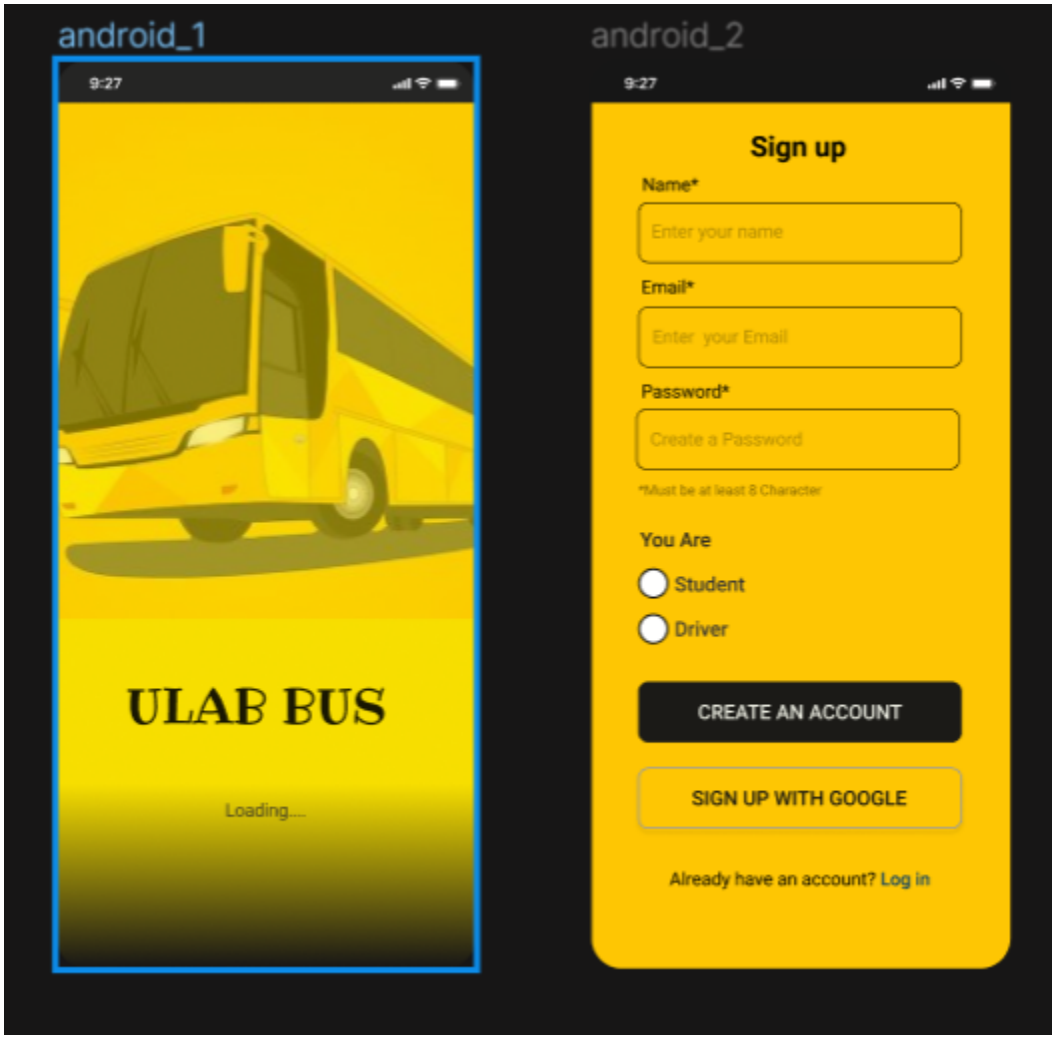
Non-functional Requirements	
Performance	● The app should handle a high number of users without noticeably declining performance.
Security	● User information needs to be securely kept and encrypted. ● User accounts should be protected by authentication and authorization
Usability	● The app should have an intuitive user interface

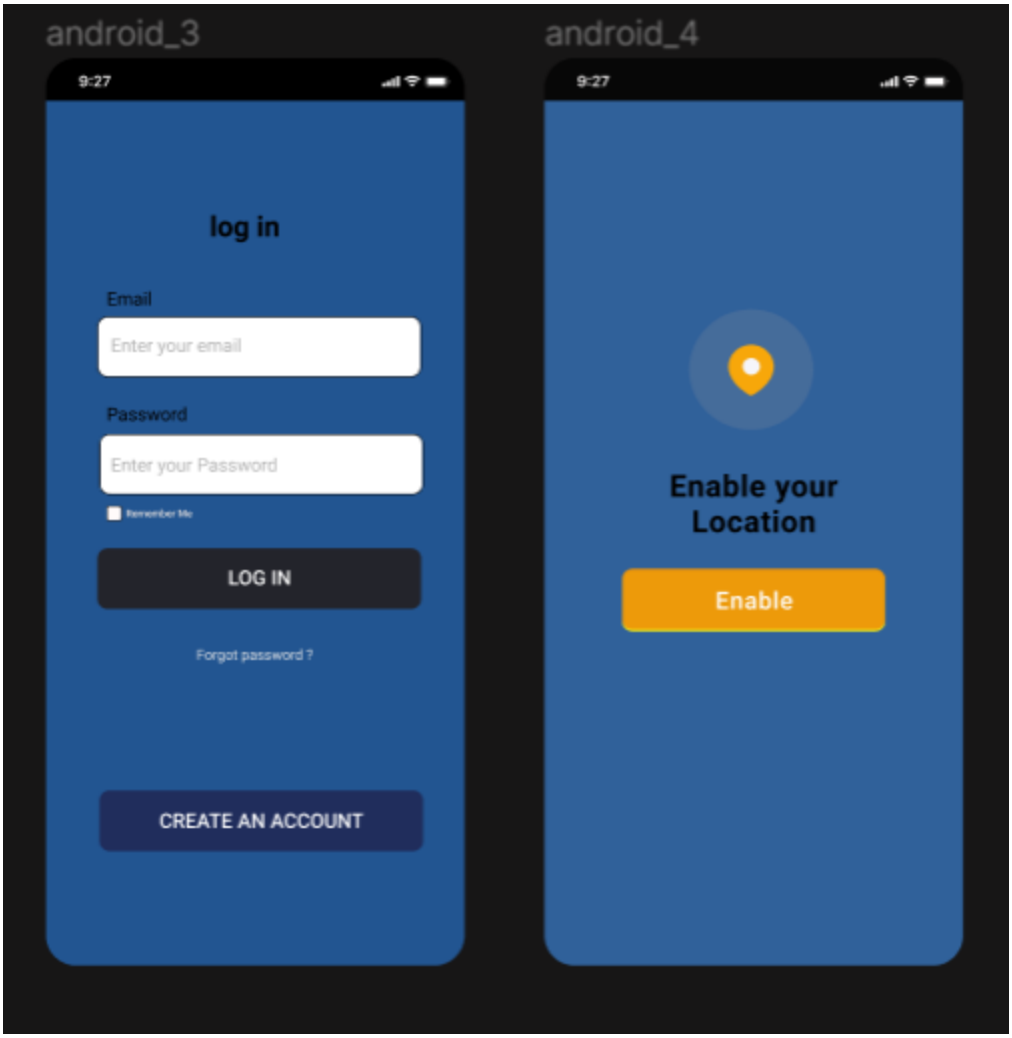
	with clear instructions and feedback. ● It should be easy for users to submit their location and request a pick-up.
Safety	● Safeguard personal and location information. ● Provide immediate notice to users of any shuttle busservice modifications, delays, or cancellations. ● Build the software with error handling and downtime reduction.

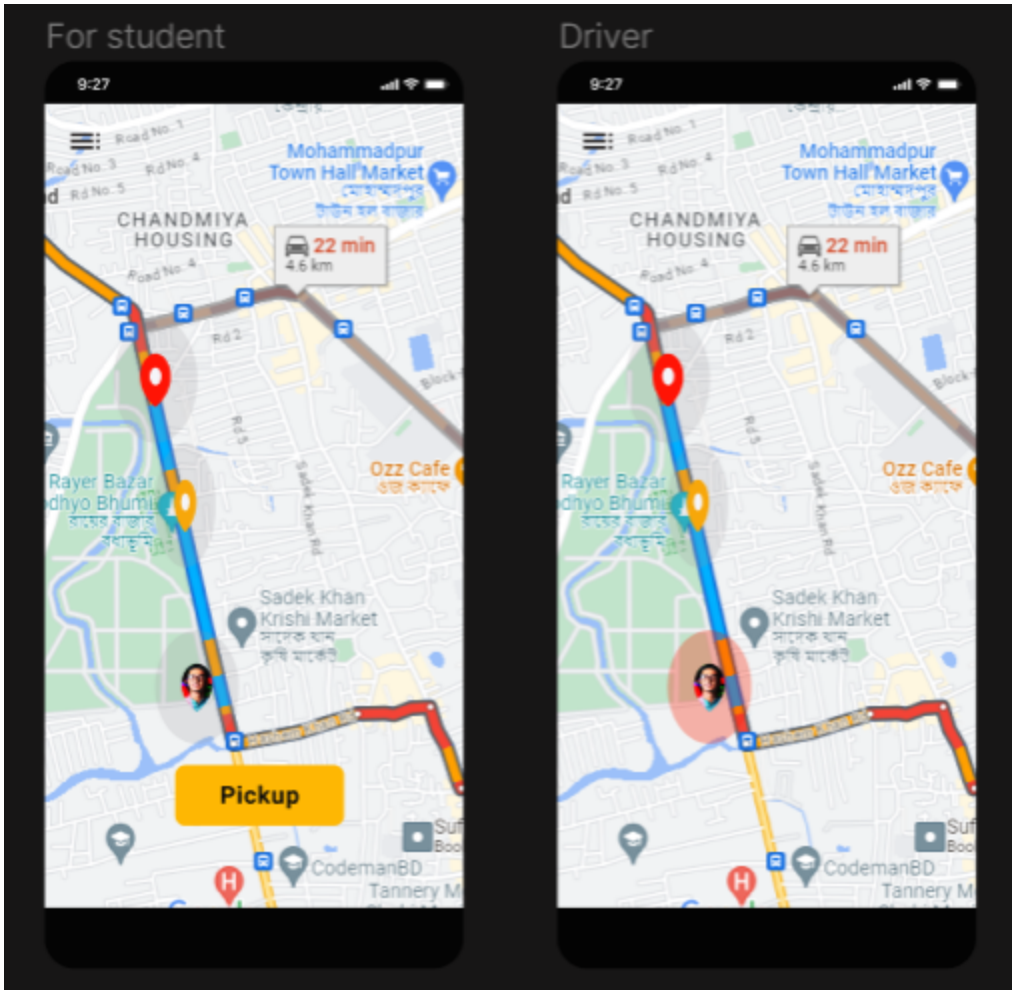
Use case Diagram for Shuttle Bus Tracker app

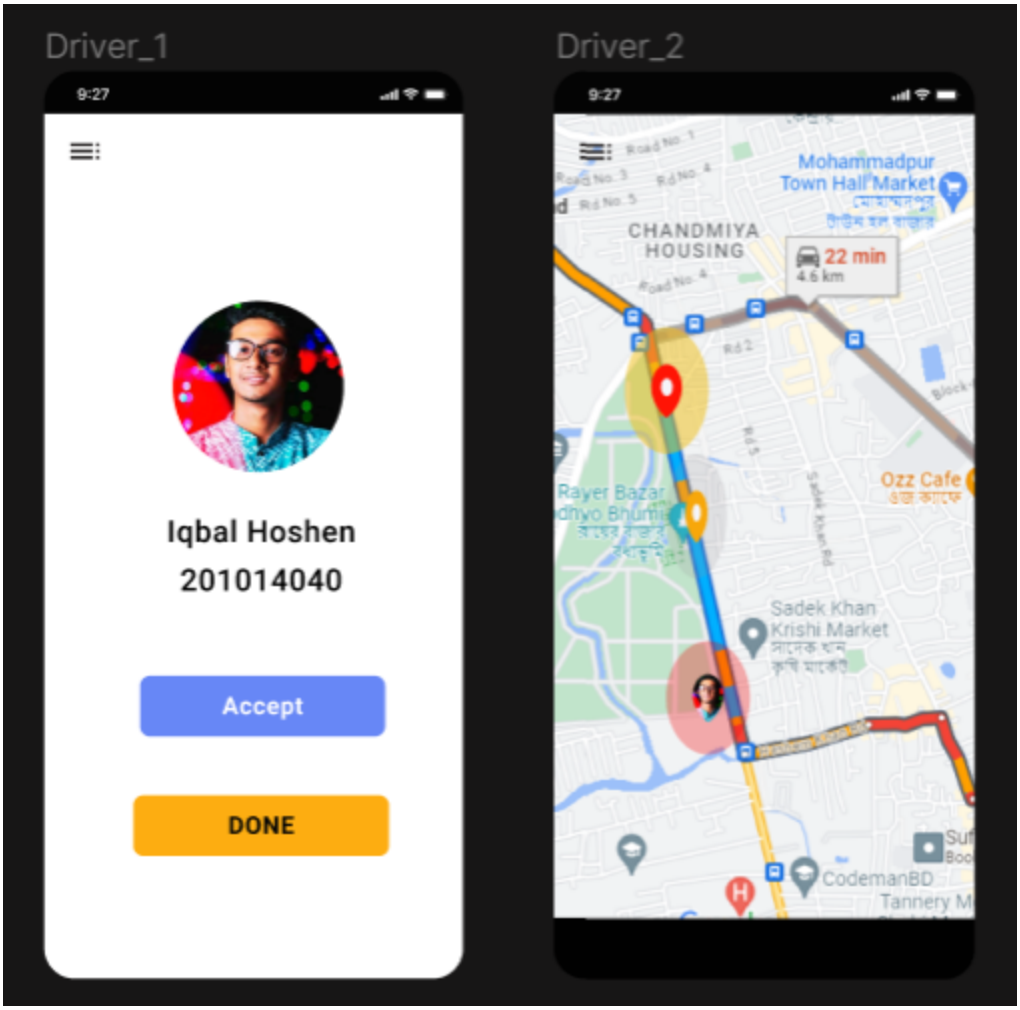


Shuttle bus tracker app design

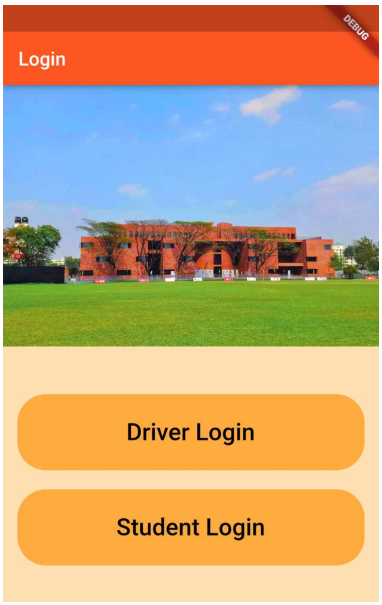



android_3
9:27
log in
Email
Enter your email
Password
Enter your Password
Remember Me
LOG IN
Forgot password ?
CREATE AN ACCOUNT
android_4
9:27
Enable your Location
Enable

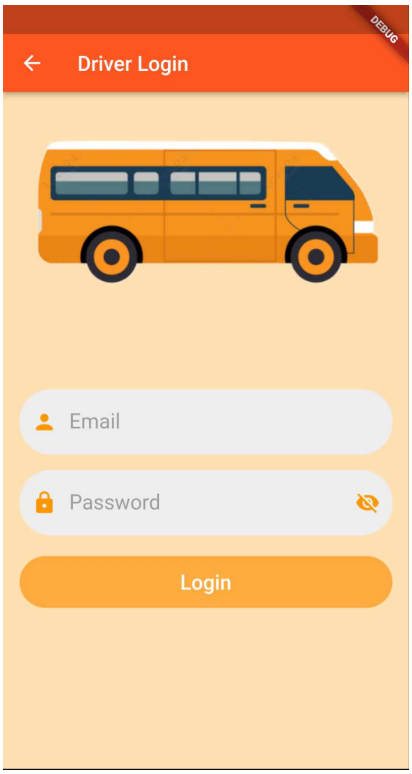

For student
Driver
9:27
9:27
Mohammadpur
Town Hall Market
CHANDMIYA
HOUSING
22 min
4.6 km
Ozz Cafe
Sadek Khan
Krishi Market
Pickup
CodemanBD


Driver_1
9:27
Iqbal Hoshen
201014040
Accept
DONE
Driver_2
9:27
Mohammadpur
Town Hall Market
CHANDMIYA
HOUSING
22 min
4.6 km
Ozz Cafe
Sadek Khan
Krishi Market
CodemanBD

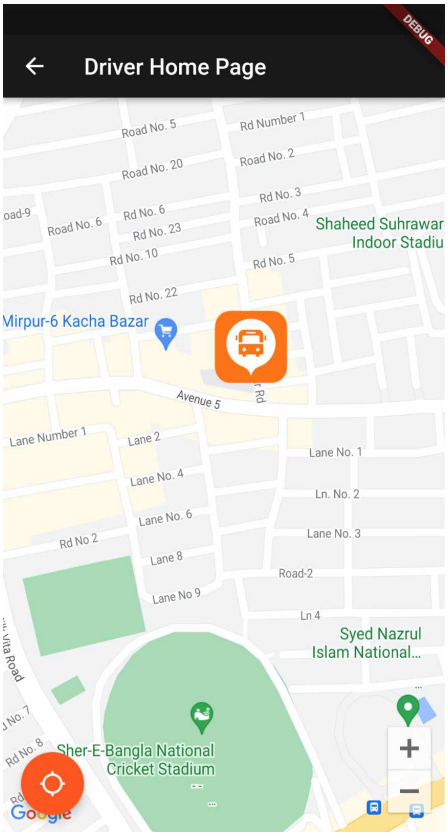
App Demonstration



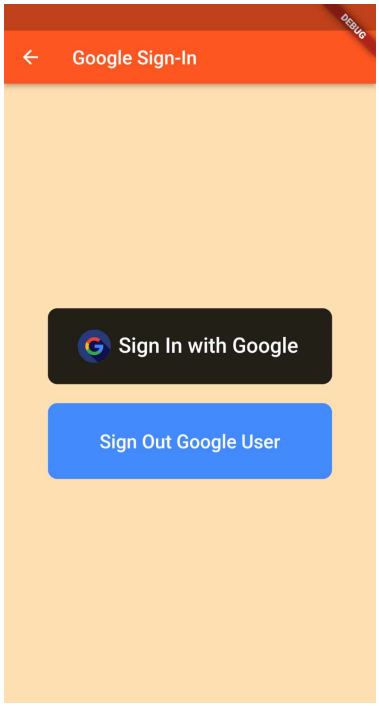
This is the login page where you can choose the user type whether you are a student or driver.



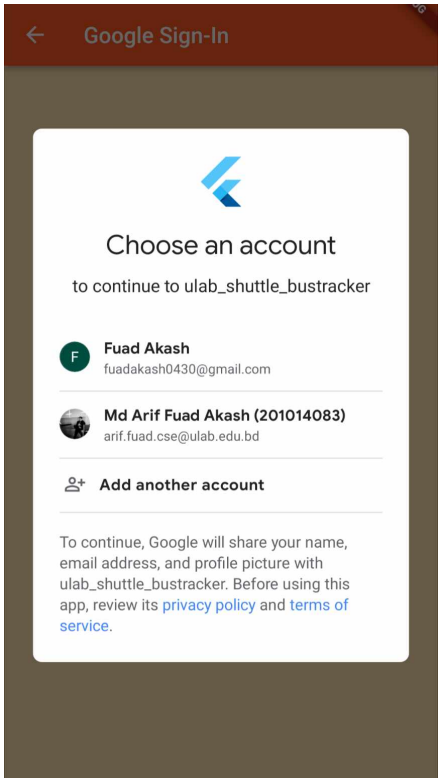
This is the driver login page, driver login here with his email and password set by admin.



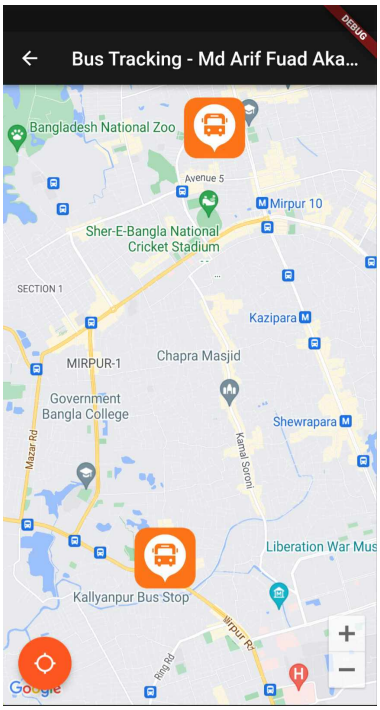
This driver home page that brings him after successful login, where he can see his and passenger location.



This is the student login page, here students can login with their gmail account.



When students press sign in with Google button this pop up window comes on screen where they need to select one logged in google account.



After login students get this page where they can see the available buses' current location on map.