



Course Title: Smartphone Application Development

Course Code: CSE 438

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Section: 1

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Revision History:

Name	Date	Reason For Changes	Version

Software Requirements Specification (SRS) for Roadside Assistance App :

1. Introduction:

1.1 Purpose:

This Software Requirements Specification (SRS) aims to define the software requirements for the Roadside Assistance App, providing a comprehensive understanding of its features, functionality, and constraints.

1.2 Document Conventions:

Throughout this document, the following conventions will be used:

- > Bold: To highlight section and subsection headings.
- > Italics: To emphasize key terms and examples.

1.3 Intended Audience and Reading Suggestions:

This SRS is intended for software developers, testers, project managers, and all stakeholders involved in the development, testing, and deployment of the Roadside Assistance App. To fully comprehend this document, readers are encouraged to have a basic understanding of software development and mobile applications.

1.4 Product Scope:

The Roadside Assistance App is designed to provide a user-friendly and efficient solution for drivers in need of roadside assistance in emergencies. It connects drivers with nearby service providers, facilitating quick response and assistance. The app covers the entire assistance process, from user registration and request initiation to service provider dispatch and completion of service. It aims to enhance the overall safety and convenience of drivers.

1.5 References:

Jang, J. A., Kim, H. S., & Cho, H. B. (2011, July 25). *Smart roadside system for driver assistance and safety warnings: Framework and applications*. MDPI.
<https://www.mdpi.com/1424-8220/11/8/7420>

Driver assistance through an autonomous safety management framework. (2016, October 1)| IEEE Xplore. <https://ieeexplore.ieee.org/abstract/document/7763181>

2. Overall Description

2.1 Product Perspective:

The Roadside Assistance App is a standalone mobile application designed to connect drivers in need of assistance with service providers during roadside emergencies.

2.2 Product Functions:

Roadside Assistance App major functions include user registration, requesting assistance, dispatching service providers, location-based services, communication between users and providers, in-app payments, and service history tracking.

2.3 User Classes and Characteristics:

Drivers: Primary users of the app, typically in distress during roadside emergencies.

Service Providers: Respond to requests, and technical expertise.

Administrators: Manage accounts and settings.

2.4 Operating Environment :

Roadside Assistance App operates on mobile devices with internet connectivity, using MySQL database and third-party services like Google Maps and payment gateways.

2.5 User Documentation:

The following user documentation components will be delivered along with the software:

User Manual: A comprehensive guide on how to use the app.

Online Help: Contextual help within the app.

Tutorials: Step-by-step guides for specific app features.

2.7 Assumptions and Dependencies :

Assumptions:

- Availability of third-party services.
- Compliance with data privacy regulations.

Dependencies:

- External payment gateways for financial transactions.
- Integration with tow truck dispatch systems.

3. External Interface Requirements:

3.1 User Interfaces:

The user interfaces of the Roadside Assistance App are intuitive and follow mobile platform design guidelines. The following characteristics are applicable to the user interface:

It will follow a user-friendly GUI for Android, consistent layout with standard elements like navigation menus, standard button and functions, error message will follow standardized formatting.

4. System Features:

4.1 User Registration and Login:

4.1.1 Description and Priority:

This feature allows users to register for the app and log in with their credentials. It is a High priority feature as it is fundamental for user engagement and access to services.

4.1.2 Stimulus/Response Sequences:

- User clicks on "Register."
- User provides necessary information (name, contact, and password).
- System validates and stores user data.
- App confirms successful registration.

4.1.3 Functional Requirements:

- 1: The app must validate user-provided information (email format, phone number) for accuracy.
- 2: User passwords must meet security standards (minimum length, special characters).

4.2 Assistance Request:

4.2.1 Description and Priority:

This feature enables users to request assistance, specifying the type of help required and their location. Priority: High.

4.2.2 Stimulus/Response Sequences:

- User selects "Request Assistance."
- User specifies the type of assistance needed.
- User provides location (GPS coordinates or address).
- System processes the request and dispatches service providers.

4.2.3 Functional Requirements:

3. The app must offer various assistance request options (flat tire, jump-start, fuel delivery).
4. The app must access device GPS for automatic location retrieval or allow manual input.

4.3 Service Provider Dispatch:

4.3.1 Description and Priority:

This feature dispatches nearby service providers to assist users, ensuring quick response times. Priority: High.

4.3.2 Stimulus/Response Sequences:

- User's request triggers a search for nearby service providers.
- System identifies and notifies available providers.
- Service providers accept or decline assistance requests.
- User is informed about the assigned service provider's details.

4.3.3 Functional Requirements:

5. The app must calculate proximity to service providers based on user location and their availability.

6. Service providers must have the option to accept or decline assistance requests.

5. Other Nonfunctional Requirements:

5.1 Performance Requirements:

- Fast response times.
- Efficient data transfer rates.
- Scalability to handle 1,000 concurrent users without significant performance degradation.

5.2 Safety Requirements:

- Compliance with data privacy regulations.
- Clear emergency procedures in case of system failure.

5.3 Security Requirements:

- Secure user authentication.
- Password complexity requirements.

5.4 Software Quality Attributes:

- User-friendly interface.
- Reliable service.
- Easy maintenance and updates.
- 24/7 availability.

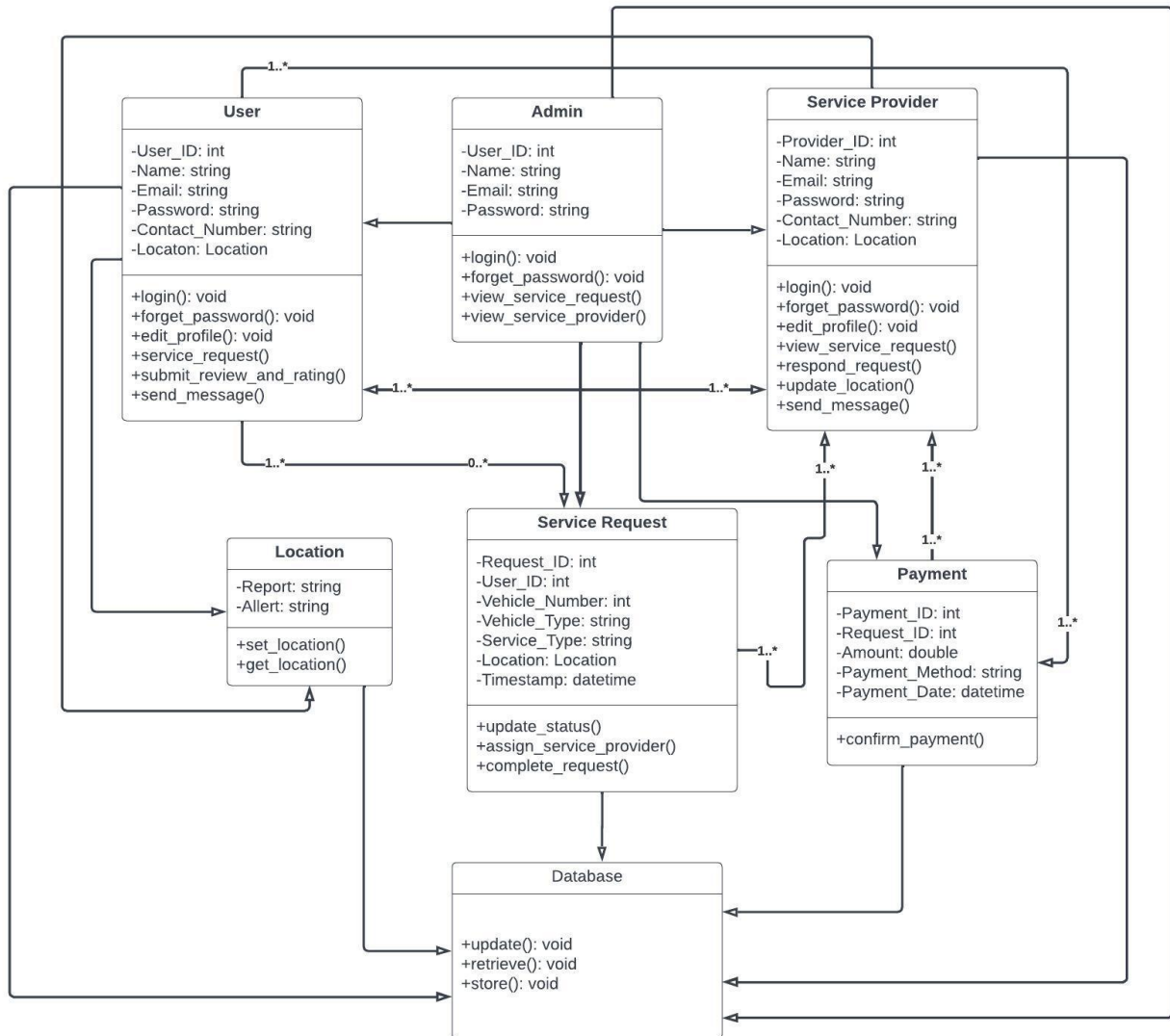
5.5 Business Rules:

- Registered users for assistance.
- Verified service provider profiles.
- In-app payment following established fees.

6. Other Requirements:

Appendix A: Analysis Models:

Class Diagram:



Outline:
User(Client):
1:

12:00 12:00



Register

Let's Get Started

create an account

Full name

Ex. Adam L. Crisb

Mobile

+8801*****

Password

1234!#abc

or

Register

Already have an account? [Sign In](#)

2.

12:00



Login

Let's Get Started

Mobile

+8801*****

Password

1234!#abc

[Forget Password?](#)

Log In

Don't have an account? [Sign Up](#)

3.

12:00



Welcome

Maliha

 Home Page

 History

 Notification

 Rate Us

 Help Center

 Sign Out

4.

12:00




Choose your vehicle?

Please select machine. It will help us to find your service faster

 Car

 Bike

 Truck

 Bus

5.

See your vehicle

Toyota | Car | Petrol

Vehicle Company

Toyota

Vehicle Model

Premio

Vehicle Number

Dhaka Metro GA-6500

6.

Request a service

How can we assist you?

Flat Tire

Tow Truck

Engine Heat

Battrey

Key Lock

Other service

Confirm Issue

7.

Your Location

Dhaka

Mohammadpur

Confirm location

8.

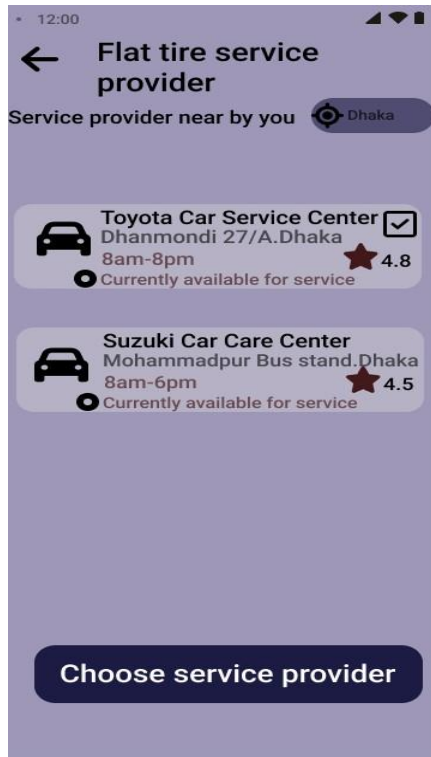
Add details

Are there any further details you'd like to pass on to your service provider?

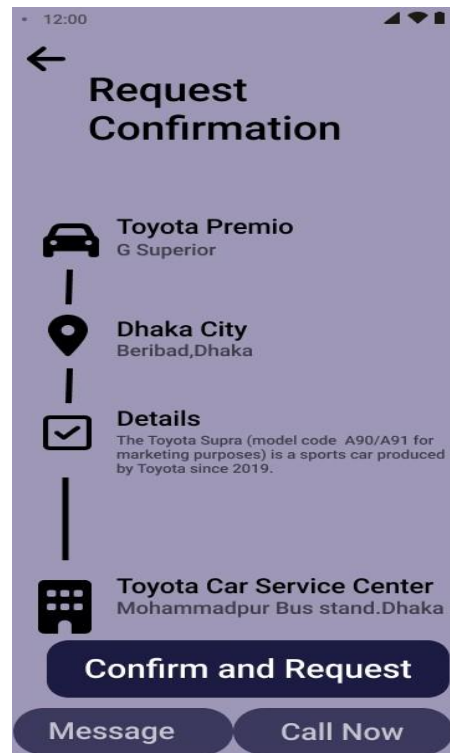
Write something here...

Confirm Issue

9.



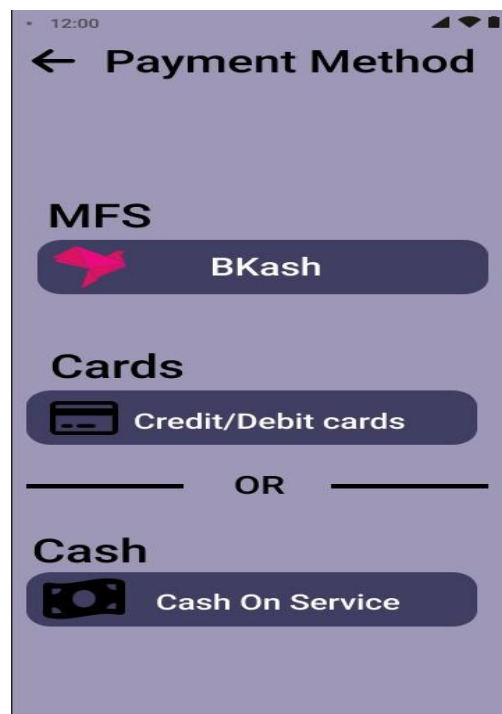
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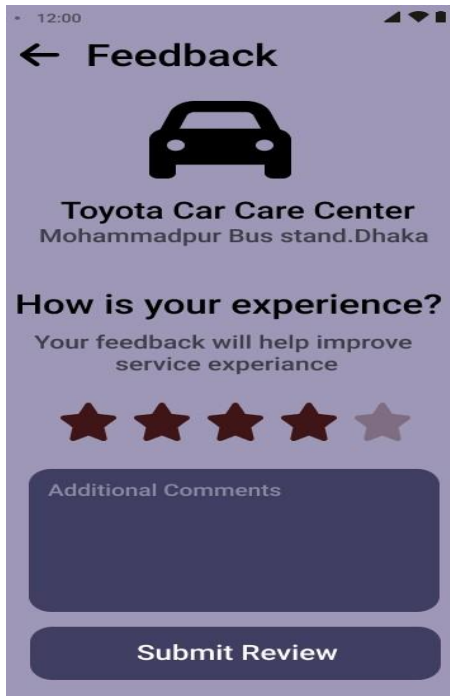
11.



12.




13.



12:00

← Feedback



Toyota Car Care Center
Mohammadpur Bus stand.Dhaka

How is your experience?
Your feedback will help improve service experience

★ ★ ★ ★ ★

Additional Comments

Submit Review

14.



12:00

← My Profile



Maliha

Full Name
Abc.z

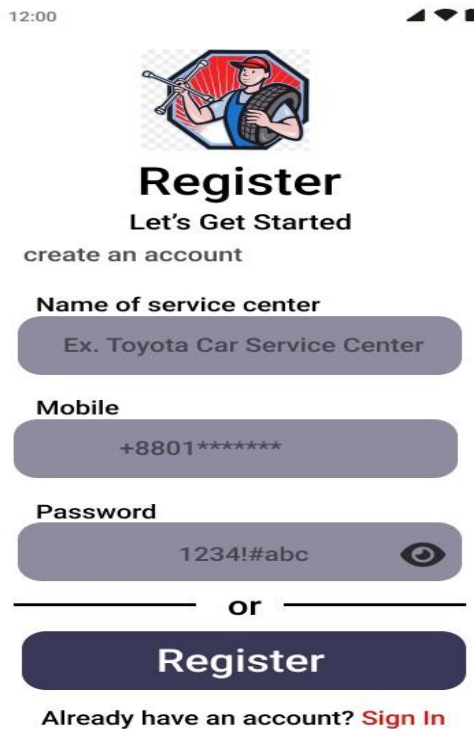
Email
example@gmail.com

Phone Number
+8801*****


Update Profile

Service Provider:

1.



12:00



Register
Let's Get Started
create an account

Name of service center
Ex. Toyota Car Service Center

Mobile
+8801*****

Password
1234!#abc

or

Register

Already have an account? [Sign In](#)

2.



12:00



Login
Let's Get Started

Mobile
+8801*****

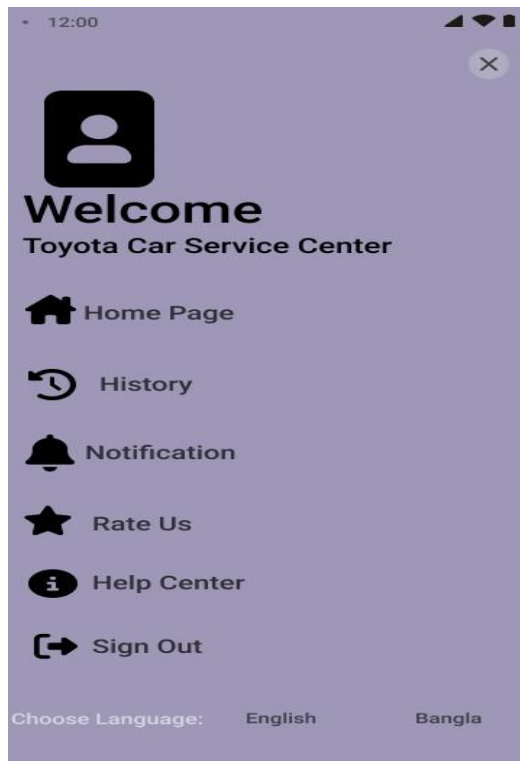
Password
1234!#abc

[Forget Password?](#)

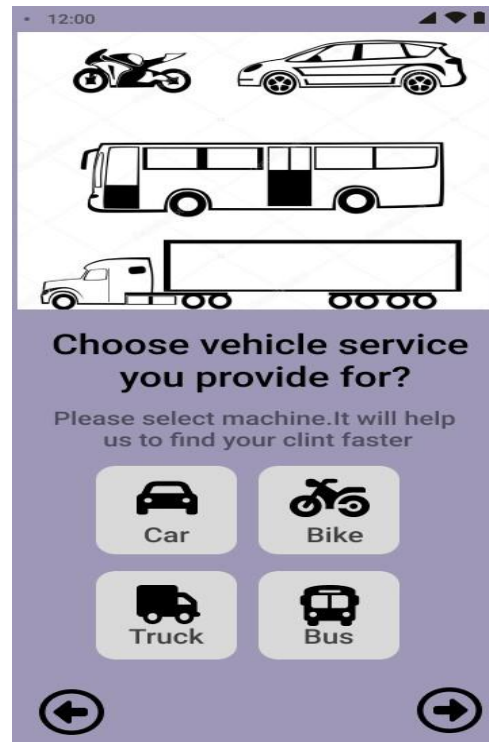
Log In

Don't have an account? [Sign Up](#)

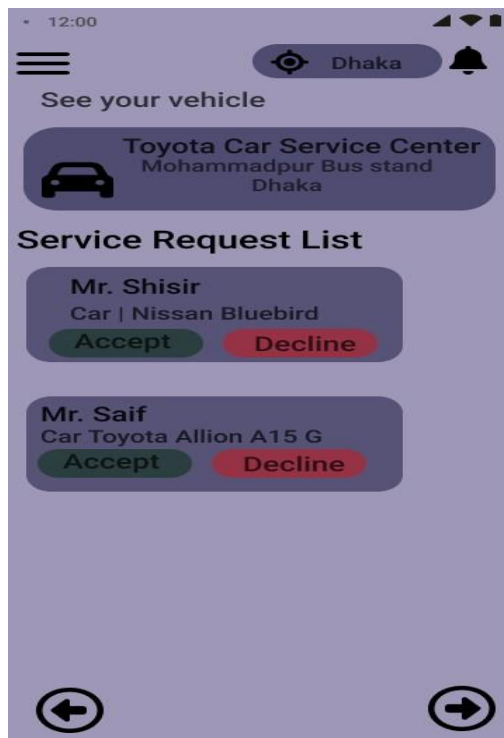
3.



4.



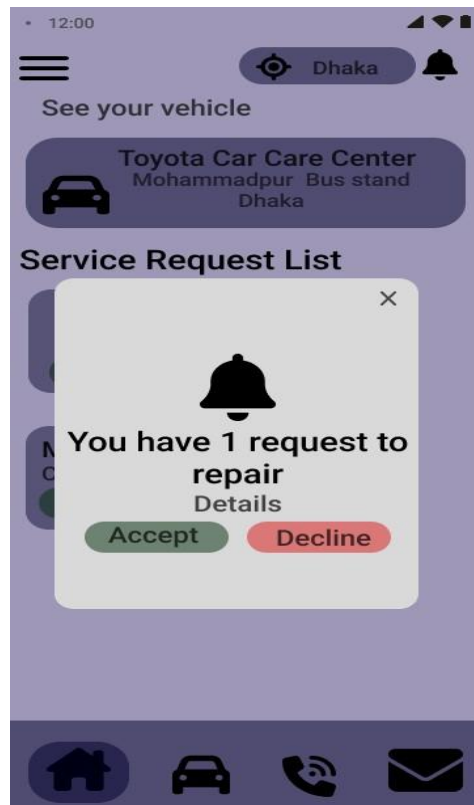
5.



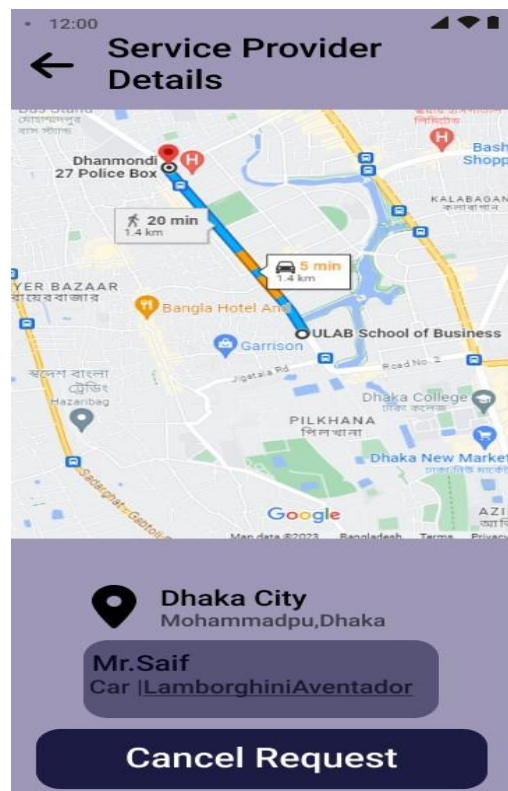
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7.



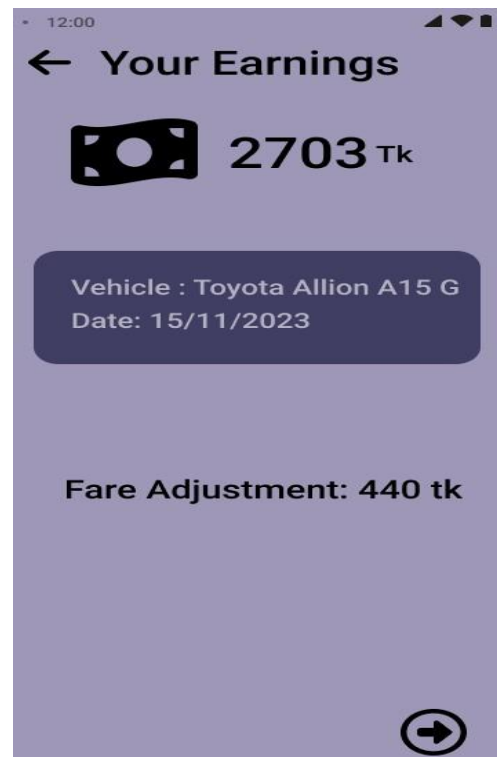
8.



9.




10.



12:00

←

Feedback








Toyota Car Care Center

Mohammadpur Bus stand.Dhaka

Ratings

You have High Rating



Feedback From Customer

Skilled person.

Good Behavior

• 12:00

 **My Profile**



Toyota Car Care Center

Full Name

Email

Phone Number

Update Profile

[illegible]

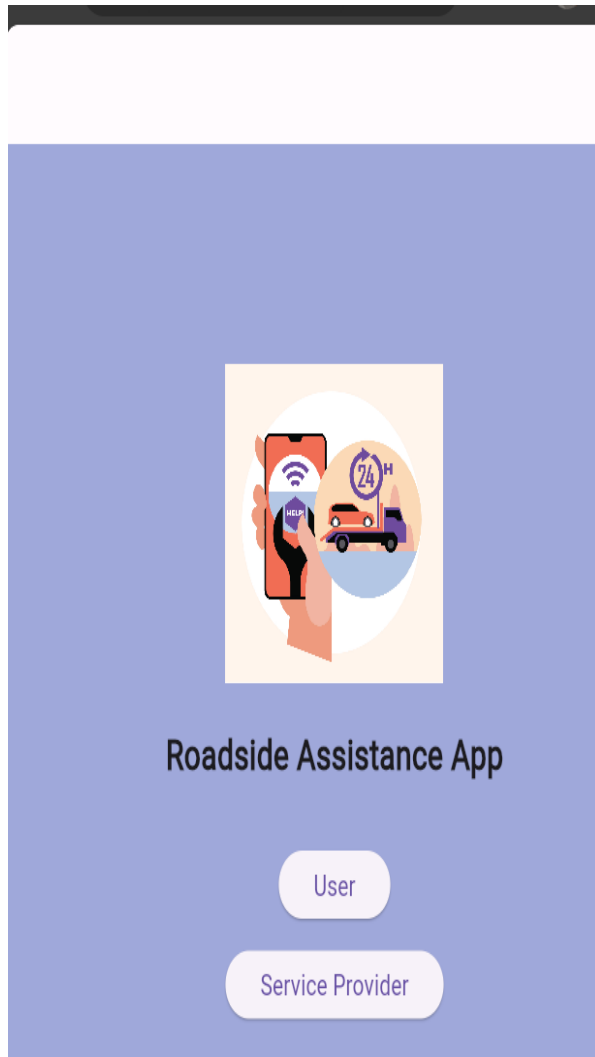
Code:

Github :

<https://github.com/saifululab/Roadside-Assistance-App/tree/master>


Code Output:

Home Page:



User:

Register Page:



Register

Let's Get Started
Create an account

Full Name


Mobile

Password

Register

Already have an account? [Sign In](#)

Login Page:



Login



Let's Get Started
Mobile


Password


Log In

Don't have an account? [Sign Up](#)

Choose Your Vehicle Page:











Choose your vehicle?

Please select the machine. It will help us to find your service faster

 Car

 Bike

 Truck

 Bus

Vehicle Information:

See your vehicle


Vehicle Company


Vehicle Model


Vehicle Number


→


Request a Service:


 Request a Service


Flat Tire



Tow Truck


Engine Heat


Key Lock



Location:

 Location Confirmation


Your Location

City

Address

Confirm Location

Details:

 Add Details


Add details

Are there any further details you'd like to pass on to your service provider?

Write something here...

Confirm Issue

Service Provider Details:

 Service Provider Details

Nearby Service Provider Details

Service Provider Name: ABC Services
Service Type: Flat Tire
Address: Mohammadpur, Dhaka


Confirm and Request

Message

Call

Cancel Request

Feedback:

 Feedback


How is your experience?

Your feedback will help improve service experience.


Additional Comments

Submit Review

Update Profile:

 Update Profile

My Profile



Full Name

Enter your full name

Email


Enter your email

Phone Number

Enter your phone number

Update Profile

Service Provider: Register:



Register

Let's Get Started
Create an account

Name of the Service Center


Mobile

Password

Register

Already have an account? [Sign In](#)

Login:



Login



Let's Get Started
Mobile


Password

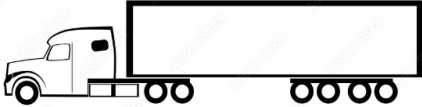
Log In

Don't have an account? [Sign Up](#)

Service Provide:







Adobe Stock | #51593220

Choose vehicle service you provide for?
Please select the machine. It will help us to find your service faster

☐ Car


☐ Bike

☒ Truck

☐ Bus

Notification:

← Notifications



You have a request to repair.

Details

Service Request List:

←

Service Request List

Client Name: John Doe

Vehicle Name: Toyota Camry

Client Name: Alice Johnson

Vehicle Name: Honda Accord

Client Issue Details:

←

Client Issue Details

Client Details

Vehicle Owner: John Doe

Vehicle Type: Car

Vehicle Company: Toyota

Vehicle Name: Allion A15 G

Fuel Type: Petrol

Vehicle Number: Dhaka Metro GA-5500

Client Service Request

Client Issue Type: Flat Tire

Client Location: Mohammadpur

Client Address: Beribad

Client added text below

Additional description goes here...

Accept

Reject

Confirmation Page:

←

Confirmation Page

Client Name: John Doe

Vehicle Type: Toyota

Message

Call

→

Feedback from Customer:

←


Feedback Page

Feedback from Customer:


Thank you for your service. Everything was great.

→

Update Profile:

 Update Profile

My Profile



Full Name

Name of the Service Center

Email

Enter your email

Phone Number

Enter your phone number

Update Profile