PUSL2021 – Computational Group Project

Group Proposal – Group B 24

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# **Introduction & Overview**

While traveling in a remote region in Sri Lanka, if our vehicle face any technical difficulties, we will have to face a critical condition. Our main purpose in such a situation is to find the nearest garageman or a mechanic. As a remedy for this common problem that every driver has faced at-least once in his life, our team has decided to create a platform where the clients and mechanics could connect through an app in-order to troubleshoot the issue. Our vision is to make it convenient for those who are faced by the breakdown of their vehicle during their journey in Sri Lanka to get in touch with a mechanic at an instantaneous time via this system.

We believe that our system, will be a great fit for travelers, tourists, businessmen and also the remaining citizens of the country as they will be able to travel anywhere within the country without having to worry about the vehicle breaking down anymore.

We provide details to the user about the mechanics around him through this system. We track the real-time location of both the parties to establish a connection between them.

The system consists of 03 user categories :-

1) Normal System Users

2) Garage Mechanics

3) Admin

We provide registration and login for all these 3 categories. After the user login to our system via the mobile application, this system tracks the real-time location of the user and finds the nearest garageman or mechanics around him.

In this system, users are allowed to make their own decisions through this app.

For example :- If the user is in a challenging situation due to the breakdown of the vehicle, he / she can utilize the mobile application on the phone to bring the mechanic to them within a short period of time.

The user can call and message through the app to connect with the mechanic and also he / she can share his or her live location to the mechanic through the app. Mechanics can receive those notifications on their devices via the mobile application.

In here we are going make a Web Application and a Mobile Application. The mobile application will control all the functionalities of our system and the web application will manage the entire system. We create both the mobile application and the web application using the same database. We hope to build a good connection between garagemen and the users who are inconvenienced by the vehicle breakdown in Sri Lanka using this system.

# **Objectives of the Project**

## **Location and Availability**

We are going to track real time locations of both the user and garage or mechanic to find the real time locations of them and also we provide all the details about the garage location via the system. We also provide working hours and all the contact information of mechanics and their garage.

## **Garage discovery**

Help user to find a nearby garageman by detecting the real-time location of the user.

## **Service Information**

Provide information about the mechanics as well as their specific services including replacements, repairs, maintenance and also specialty services.

## **User Education**

Provide content and resources that are helpful when diagnosing the issue of the vehicle so that the user could understand about the issue.

## **Alternative Solution**

The users have the freedom of using the web application, if any issues arise when using the mobile application.

# **Target Users**

1) Businessmen in Sri Lanka

* We believe that our system is quite significant for businessmen who across different parts of the island for their business activities. They can use this system to quickly move to a garage, avoiding the difficulties that are being faced if their personal vehicle breaks down during their business duties.

2) Researchers

* Researchers can collect data from this system to assist with safety research, which will result in better experience. They can additionally investigate many more systems that help to avoid many transportation difficulties.

3) Students and Educators

* Our system ensures a secure journey by developing safety features.
* As well as maintaining punctuality for classes and meetings, educators can conduct virtual sessions, work-shops and meetings.

4) Travelers

* Travelers in Sri Lanka can benefit from this system well. It is because travelers love to travel in unknown areas. During that time if they face a critical technical issue, this system will be useful to them.

5) Tourists

* Tourism is a very important aspect for Sri Lanka. There are many ways to think that this application will be very helpful to enhance their transportation facilities in Sri Lanka.

6) All the vehicle owners in Sri Lanka

* Every vehicle owner/driver has definitely faced this inconvenience at one point in their life. So this application will be very important for every driver in Sri Lanka.

# **Proposed technologies & tools**

1. We use FLUTTER, which is an open source frame work in the programming language called DART To build the mobile application.

Flutter is an open-source UI software development toolkit by Google, enabling cross-platform app creation. It offers a single codebase for iOS and Android, with expressive and customizable designs.

1. We use FIREBASE as the database of the mobile application.

3) We will be using Svelte for the front-end development of the web application. In-order to develop the back-end of the web application, we will be using Firebase.

Timeframe

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