**MOBILE­-BASED ON ROAD VEHICLE BREAKDOWN ASSISTANCE SYSTEM**

**BY**

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**ABSTRACT**

*The problem vehicle users facing while travelling is majorly the breakdown of vehicle on the road. Mobile-based on road vehicle breakdown assistance system is going to be a good solution for the people who seek help in the remote locations with mechanical issues of their vehicle. Users of the proposed system will be the registered public and they will get connected with a particular mechanic through the trustworthy assistance system because only the legally licensed and approved mechanics are enlisted in the system. In an existing system there are users who have their own mechanic database which is very minimal. And also they have no idea if their vehicles are broke down or had any mechanical issue in remote locations or any long distant locations from their known mechanic shops. In the proposed system here the users of system can search for list of mechanic at any location or the nearby locations which will help them in an unexpected situations raised by the mechanical issues of their vehicles. Mechanics and vehicle users will be interviewed by the project researcher and the system will be designed using flutter for the frontend and Python (Django) for the backend and SQLite3 will be used for the database, the above language combination forms the programming language for the system.*

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**CHAPTER ONE**

**INTRODUCTION**

**1.1 BACKGROUND OF THE STUDY**

A lot of people are facing difficulties getting help when their car breaks down on the road. Many of them do not have any Car Repair Service Providers’ contact number and could not get help as the Car Repair Service Providers might be far away from their locations. These problems are the motivations for the development of this project to help those who are in need when their car breaks down along the roads. During the holiday seasons, cases of car breakdowns increase more as long trips put vehicles at greater risk of breakdown. In case of breakdown in the state route and the route in the city, it can be difficult to get help because if the driver is not familiar with that place. When it comes to breakdowns in rural areas, it could be worse since the breakdown point is far from the car repair service providers.

This application helps you to find your nearby service centers, exact locations with the distance from your place with the directions using Google Maps let you to know with ease to access with the help of this application on your smart mobiles.

The proposed mobile-based on road vehicle breakdown assistance system goal is to provide the system with the highest level of user-friendliness through efficiency, accuracy, availability and reliability that can be achieved through system performance. Information on the existing system is essential to achieve the goal of our project. The following are the methods used to locate facts.

1. Interviews
2. Questionnaires

**1.2 Problem statement**

The problem while travel is breakdown of our vehicle. In this situation, the only way is to look for some other transportation at that time of issue and then they need to get a mechanic to the particular location at which they have left their vehicle. In this application, the mobile users can get nearby area mechanics by searching at anytime and anywhere. The admin can handle user management.

**Existing System**

1. In the existing system there are users who have their own mechanic number and it is also difficult for them to arrive at that remote location.
2. Vehicle might breakdown in locations where the driver might not know the environment or how to get to the next mechanic or how close to them it is.
3. Most times if breakdown happens the only way is to look for any other transportation at that time of issue and then they need to get a mechanic to the particular location at which they have left their vehicle.

**Proposed system**

1. The proposed application helps to find the nearby mechanics easily and quickly
2. This application shows the distance between the mechanic location in km from the driver location.
3. It allows us to search for the nearby mechanics from different locations and provides the mechanic contact information.

**1.3 Motivation**

Today most people use their own vehicle for travel. While travelling most of us encounters troubles with breakdown of our vehicle on the road. This is the worst experience they have to face.

Several of them don't have any vehicle Repair Service contact, even if they do, they might not get help because the vehicle Repair Service Providers may be distant from their locations. These issues are the motivations for the event of this project to assist those vehicle breaks down on the roads.

**1.4 Aim and objectives of the study**

The project is aimed at designing a working mobile-based application to facilitate on-road vehicle breakdown

**Objectives:**

1. To develop a platform which improves the efficiency of the driver and the mechanic.
2. To design and provide an estimated measurement of length distance and time for the match requested service
3. To build a common platform which connects the driver and the mechanic

**1.5 Methodology**

The method used for collecting data on this research work is interview, Questionnaires. This will be done by meeting some vehicle owner and mechanics for oral/verbal conversation or giving them questionnaires in order to get additional information that will be useful to this research work. This system is expected to be an independent application which will be designed using flutter for the frontend and Python (Django) for the backend and SQLite3 will be used for the database, the above language combination forms the programming language for the system

**1.6 Summarized Literature Review**

**A Vehicle Breakdown Service Provider System. Krishna et al. (2021).** Everyday travel became a part of everyone’s life. We travel in many sorts of automobiles. A machine is not supposed to last forever, and with day-to-day use and time-tested in varied settings, it is meant to see some type of failure, breakdowns. Self-repairing may address many problems on the spot. Many people are having difficulty obtaining assistance when their vehicle breaks down on the road. These issues motivated the creation of this effort to assist individuals in need when their vehicle breaks down on the road. Moreso, For the development of the front end of the project it has been made friendly to user with better use of HTML, CSS and JS. The back end has been written in Python Programming Language.

**On Road Vehicle Breakdown Services. Elakkiya and Bavithra (2020).** Many individuals have difficulty obtaining assistance when their vehicle breaks down on the road. Many of them do not have a contact number for a car repair service provider and are unable to obtain assistance since the car repair service centre is located far from their location. This initiative will assist folks in need when their automobile breaks down on the road. Furthermore, they may use the present location alone to discover the place in the existing system. If we wish to find a nearby place, we’ll need to use another programme, which has certain limitations. That is, we should provide the location, and it will search the neighbouring locations for what we have entered in the search box.

**Low and Lukman (2021) recently made research on Campus Location Finder Using Mobile Application.** The university campus is made up of several buildings and rooms, each with its unique name and function. Aside from that, moving from one building to another will take some time because the campus is not tiny like a primary or secondary school. A standard map does not appear to be useful because it does not identify the user’s position. It may take some time to determine the user’s present location. Finding a location inside a building is difficult since the halls are nearly identical. Asking other individuals in the are’ for directions may provide results, but it will be difficult when the route to the destination contains several turning points. Another issue was remembering all of the locations correctly.

In conclusion, using the Thunkable website and other tools, this indoor/outdoor navigation application was completed. Recommendations to increase the application’s usefulness in the future include making indoor navigation available for all buildings in the use case of the study. Replacement of   QR code indoor navigation with real-time navigation using several navigation methods such as Wifi, etc. Furthermore, because the Thunkable website has many limitations, the application may be improved by using Android Studio to develop the application.

**1.7 Conclusion**

As a consequence, our emergency vehicle breakdown service provides superior location results. Our programme quickly detects nearby locations, which is extremely valuable for users in emergency situations. It also features an offline mode that provides recommendations when the internet is not available. This technique simplifies the user experience and outperforms the old system in critical situations.

**1.8 References**

Ziebinski A., Cupek R., Grzechca D., and chruszczyk L. (2017)’. Review of advance driver assis

tance system (ADAS) (DOI: 10.1063/1.5012394).

Kumaar.A, Balakrishna, Subha. S, Harin. K (2019)’. On Road Vehicle Service finder.

Tracking of Automobile Service Centers Using Android Application (Visit Mechanic). Available

from: https://ieeexplore.ieee.org/abstract/document/9121172.

Kapadi V., Guruju S., & Bojja B. (2017)’. Emergency Breakdown Services using Android

Application.

Monica, 2018. A Car Breakdown Service Station Locator System. INTERNATIONAL

JOURNAL OF ADVANCE SCIENTIFIC RESEARCH, 3(4), pp. 13-16. Morales, O., 2016.