

EMERGENCY WHEELS

Tilak C¹, Prof B.S Meghana²

PG Scholar, Department of MCA, PES College of Engineering, Mandya, Karnataka, India¹

Professor, Department of MCA, PES College of Engineering, Mandya, Karnataka, India²

Abstract: The Emergency Wheels project is designed to provide a reliable and efficient solution for individuals experiencing vehicle breakdowns, regardless of their location. Through an Android application, registered users can seamlessly connect with approved mechanics via a secure and monitored system. The app exclusively enlists authorized mechanics, ensuring the trustworthiness of the services offered. Users can report breakdown incidents and efficiently connect with nearby mechanics through the app's intuitive interface. To prevent unauthorized charges, the system closely monitors mechanics, while users provide feedback on the service received to maintain quality standards. With a focus on accessibility and user-friendliness, the Emergency Wheels project aims to offer a dependable solution for on-the-go vehicle breakdown assistance across various locations.

Keywords: Infrastructure Development, Rental Service, Breakdown Services, User Interface.

I. INTRODUCTION

The need for effective breakdown assistance, especially in far-off areas, has increased as reliance on cars for travel rises. An Android app created by the Emergency Wheels program will help to simplify communication between qualified technicians and those having vehicle problems. This technology ensures only registered authorized specialists, thereby improving the trustworthiness of your service. Linking users with local specialists, the program provides a straightforward and trustworthy way for them to get assistance should an issue arise. The aim of the project is to minimize the problems resulting from road breakdowns by means of a carefully watched and user-friendly platform. The project's primary objectives are to satisfy the required standards for offering emergency breakdown support during crises and enhance the user experience by including new features. In case their car breaks down and customers want quick transportation to a certain location, the Android application also offers a car rental service. Should it be impractical to conduct repairs at the site, the service also covers towing assistance. Moreover, clients have the option to use fuel delivery services should their gasoline run out while driving. The aim of the project is to create a user-centric platform covering all facets of on-road assistance. This would let consumers take use of a wide spectrum of services right at their reach.

II. LITERATURE SURVEY

In [1] People nowadays prefer to commute in their own vehicle to avoid traffic and annoyance. However, in the event of a breakdown while travelling, finding a repair in an unfamiliar location is quite difficult. As a result, we presented a mobile and web-based help solution to solve this problem. All mechanics will be able to register with their service information using this system. The end user, on the other hand, must download and install a mobile help programme on their Android device. When the user is online, the mobile app will track his current position and save it in a database. The system will generate a list of nearby service providers based on the user's current location, which will be saved in the user's smartphone. In[2] Now-a-days people prefer to travel in their own vehicle as travelling has become an integrated part of a life. Traveler's might plan and make all precautions to make the journey safe and smooth but in the unfortunate and unforeseen event of a breakdown during journey, what is needed is immediate help which becomes very difficult to search a suitable service provider in unknown area. This is the worst experience that the travelers have to face. Therefore, to overcome this issue we have proposed an android based application with the aim of providing emergency road side assistance services within no time to ensure a pleasurable and uninterrupted journey anywhere. To build this application Android Studio is used as a platform, XML as a front-end and Java/Kotlin as a back-end development and Google cloud Firebase as a real time Database which includes variety of custom tools and libraries that helps to develop Android-based mobile/tablet app. The proposed approach utilizes registration and login through email-id. This application will fetch user's current location and will list out the nearest service provider through Dijkstra's algorithm within just one click. User can put their issues of breakdown (if known) accordingly one of the garages would take the job and go to the traveler's location and repair their automobile. This Android Application is going to be a good solution who seek help in unknown location. The approach has been tested for its performance and has attained superior results. Hence, this application lets the users have a stress-free travel time.

III. PROBLEM STATEMENT

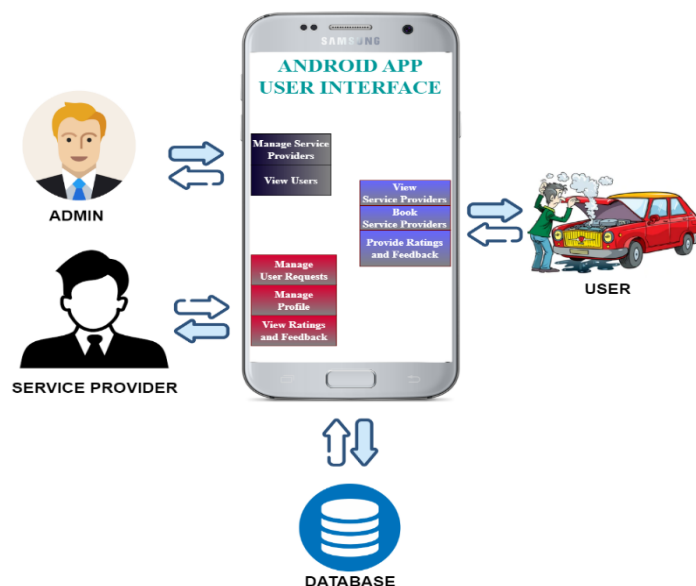
People who live in rural areas often have to deal with the difficult problem of car breakdowns without quick access to trustworthy help. It might be especially difficult to find reliable technicians, make other travel arrangements, and get towing or fuel services. One factor contributing to the issue is the lack of an efficient method for linking consumers with a variety of approved breakdown help providers. The project intends to create an Android app that not only links customers with certified technicians but also incorporates rental services, towing assistance, and fuel delivery in order to fully solve these complex difficulties. The goal of this project is to provide a one-stop shop for those who have car problems by providing a single, easy-to-use platform with a range of reliable, fast service alternatives.

IV. OBJECTIVE

- **Enhance Emergency Response:** Develop a platform that connects users with authorized and registered technicians, ensuring quick and reliable assistance during vehicle breakdowns.
- **Improve User Experience:** Create a user-friendly Android application that simplifies the process of obtaining emergency breakdown services, ensuring ease of use and accessibility for all users.
- **Ensure Service Trustworthiness:** By vetting and registering authorized specialists, the app aims to build trust and reliability in the service provided, reducing the chances of users encountering unqualified or fraudulent mechanics.
- **Comprehensive Service Coverage:** Offer a wide range of on-road assistance services including vehicle repairs, towing, car rental, and fuel delivery, catering to the diverse needs of users during emergencies.
- **Facilitate Local Connectivity:** Link users with nearby specialists to ensure prompt service delivery, especially in remote or far-off areas where breakdowns can be more challenging.

V. METHODOLOGY

Designed as a systematic approach, the System Development Life Cycle (SDLC) seeks to build information systems by means of a comprehensive, multi-stage process. Starting with preparation, the process consists of numerous steps: analysis, design, development, testing, implementation, and maintenance follows. We clarify the goals, scope, and feasibility of the project during the planning stage. Gathering and recording system requirements is a fundamental component of the analysis process. During the design process, the found needs are turned into thorough requirement papers including exact system architecture, data models, and user interfaces all around. Developed and programmed at the implementation stage is the system. Guaranturing that the system satisfies all criteria and operates as expected depends on testing. Using this whole approach helps to create dependable and outstanding systems.

**Fig.1 System Architecture**

**VI. PROPOSED SYSTEM**

The Emergency Wheels Android program is especially meant to transform the way people manage cases of car failures. The software ensures quick and efficient help whenever needed by means of a user-friendly interface. This program is designed especially to help those experiencing car breakdowns. It connects consumers to a fleet of certified technicians, towing companies, rental options, and fuel delivery providers. The design of the app helps users to easily report issues. The actual arrival time of service providers is guaranteed by the real-time monitoring technology, therefore guaranteeing openness and accurate estimates. The provision of on-site rental services is meant to meet the various demands of customers, particularly those looking for a convenient and quick substitute means of mobility. By means of a feedback system, users may share their experiences, therefore promoting the growth of a clear and ethical network of service providers. While guaranteeing a great degree of security, the application includes a strong and dependable payment system that streamlines the process of doing transactions for rental services, towing, and fuel delivery. This improves user experience across-through. The program is supposed to be simple, reliable, and powerful. It provides a complete cure for those who run into unanticipated vehicle breakdowns. The program ensures consumers at every moment they require it fast and consistent help.

Advantages of Proposed System:

- The program provides consumers with instant access to a network of licensed mechanics, rental services, towing, and fuel delivery, therefore lowering the time needed to receive assistance.
- Combining many services—such as quick rental options, towing assistance, and gasoline delivery—the program offers consumers a whole spectrum of options on one platform.
- The user-friendly design of the program allows simple reporting of breakdowns, service requests, and feedback posting, therefore improving the speed and smoothness of the support process.
- By means of comments and ratings for the acquired services, users enable a transparent feedback system that supports the maintenance of the quality of the services.

VII. SOFTWARE IMPLEMENTATION

The idea behind the System Development Life Cycle (SDLC) is to break down a system into smaller, more manageable parts in order to create it in an iterative manner. Unlike the conventional waterfall technique that requires finishing each stage before going on to the next, the iterative paradigm lets one review and improve past phases depending on feedback and insights acquired along the process. Including planning, analysis, design, implementation, and testing in every iteration helps iterative development and improvement to be supported. This method is very good in controlling changes and making sure the end result satisfies customer expectations.

The iterative model of the Systems Development Life Cycle (SDLC) repeats planning, designing, developing, and testing in order to progressively enhance and perfect the system for use in sequence. Every iteration starts with the conception and execution of a predefined set of features, then extensively tested and evaluated. User and stakeholder comments are received and analyzed to identify areas needing improvement. Following that, iterations enhance the previous ones by adding fresh elements and using feedback to implement necessary modifications. This approach ensures that the program always adjusts to meet user needs, address fresh issues, and improve its general usability and performance. Ultimately, this produces a robust and user-oriented answer for housing and handling municipal concerns.

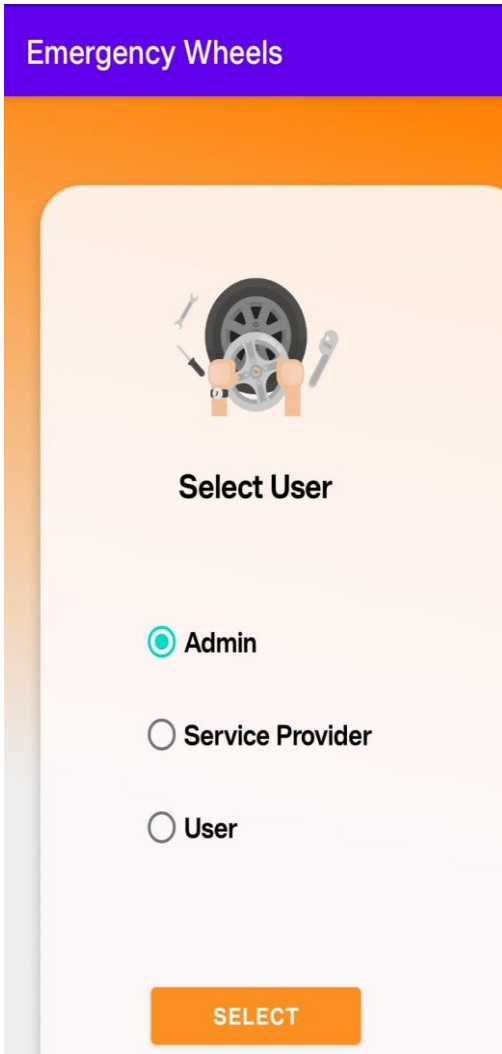


Figure 1: Home Screen

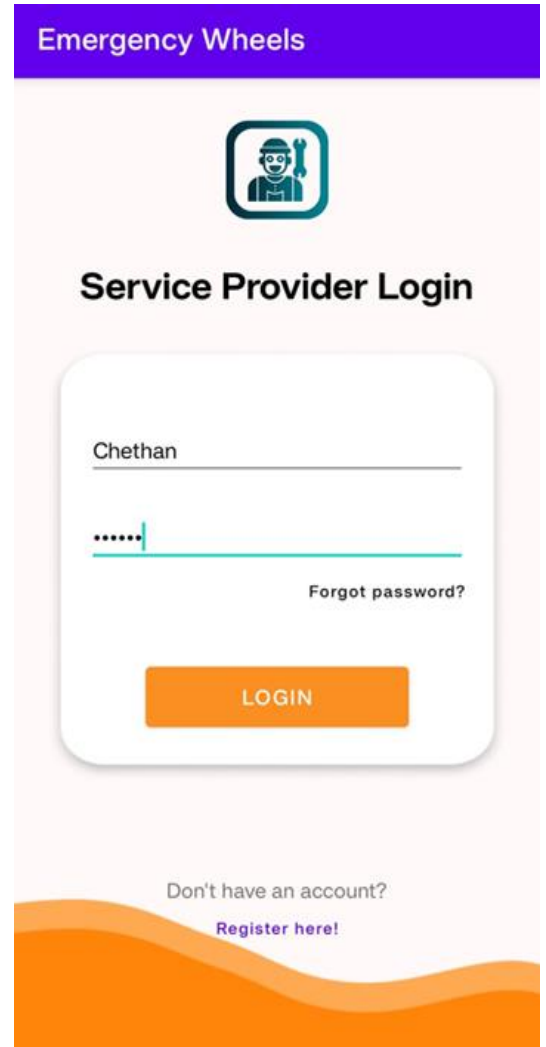
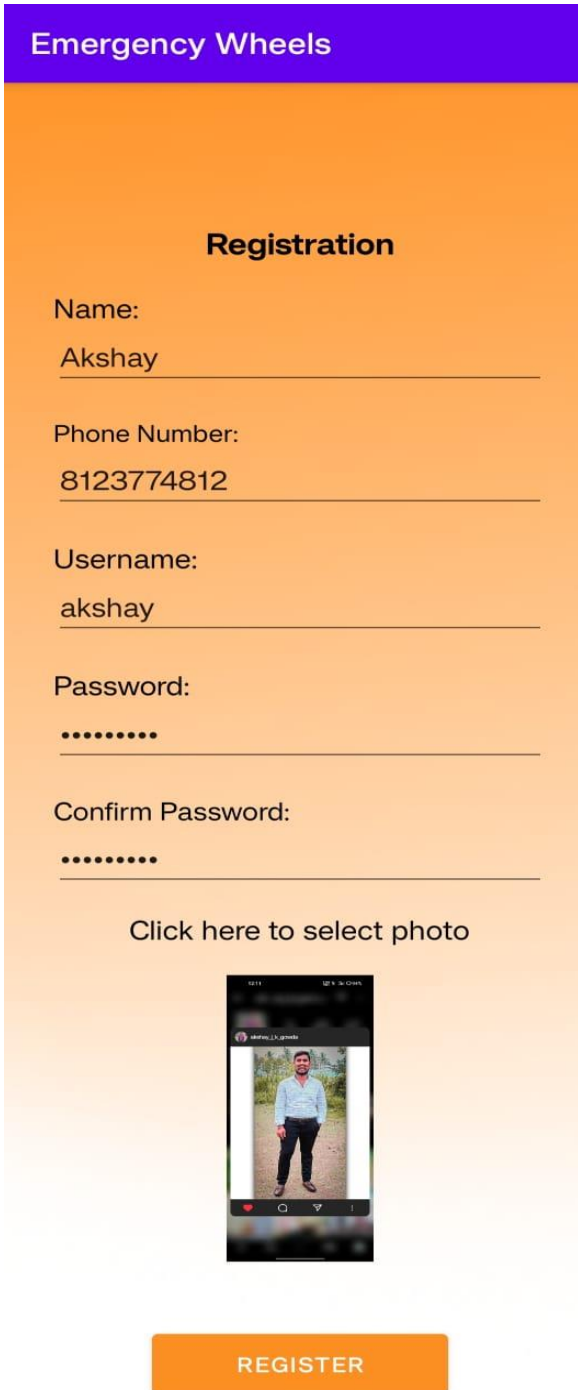


Figure 2: Citizen Login Page



Emergency Wheels

Registration

Name:
Akshay


Phone Number:
8123774812

Username:
akshay

Password:
.....

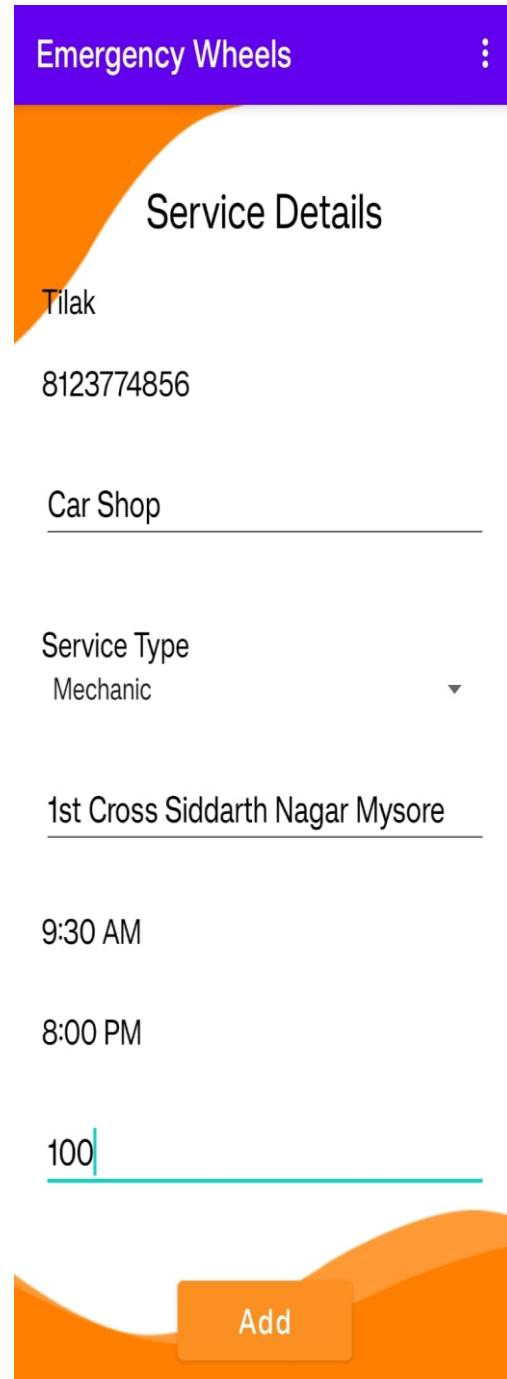
Confirm Password:
.....

Click here to select photo



REGISTER

Figure 3: Registration page of the User



Emergency Wheels

Service Details

Tilak

8123774856

Car Shop

Service Type
Mechanic

1st Cross Siddarth Nagar Mysore

9:30 AM

8:00 PM

100

Add

Figure 4: Shop details of the Service Provider

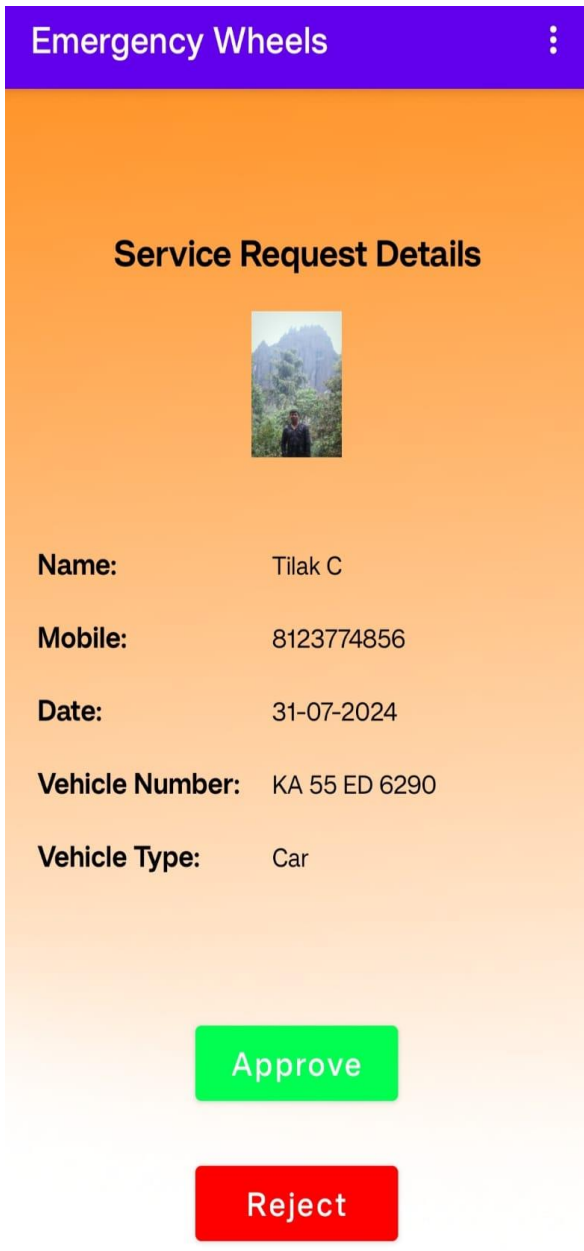


Figure 5: Service Provider Approve Page

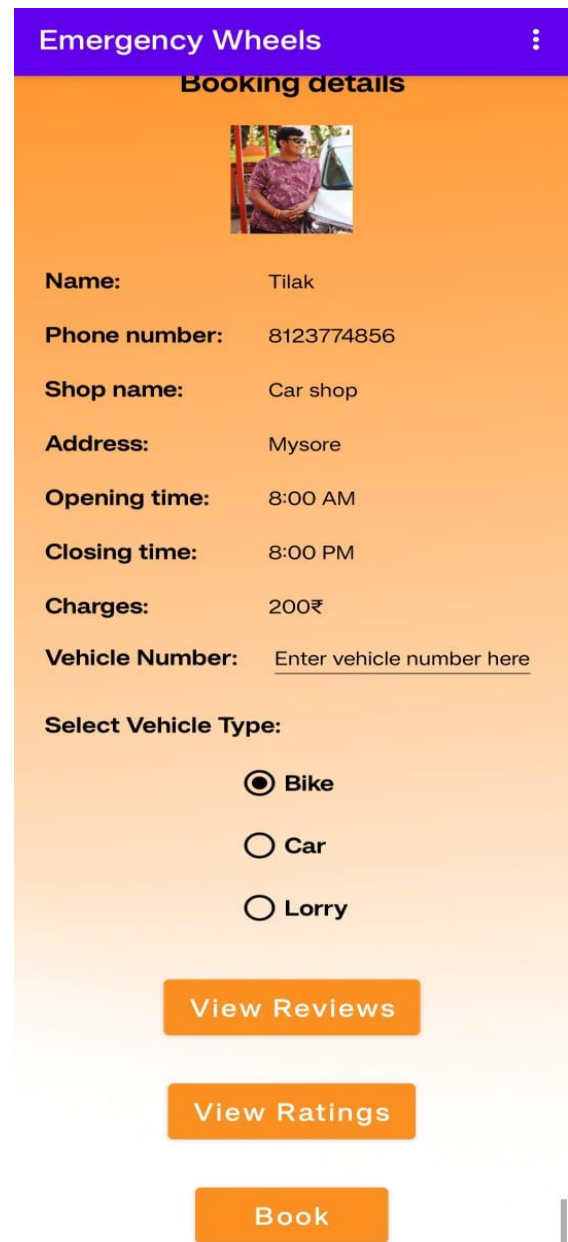


Figure 6 : User Booking Details.

VIII. CONCLUSION AND FUTURE SCOPE

In summary, the proposal provides a distinctive and user-centric solution to the problems associated with automobile breakdowns. The Android application includes rental services, towing assistance, fuel delivery, and a comprehensive network that not only connects customers with authorized experts but also gives a complete system for breakdown assistance. The program improves the dependability, effectiveness, and lucidity of traditional breakdown assistance systems. Implementing a feedback system enables us to ensure accountability and maintain the level of excellence in our services. The proposal endeavors to fulfill the diverse requirements of customers with a user-friendly interface that can effectively manage various situations, such as unforeseen malfunctions or the need of rental services while vacation. The app is a major breakthrough in on-road automotive assistance. It provides convenience and peace of mind, therefore revolutionizing how customers handle unexpected automotive problems.



In the future, the system might be expanded to incorporate other modules such as medical and food. This would enable the system to deliver services such as food supply and assistance during medical emergencies, among other things. By doing this, users may save both time and effort, resulting in a more advantageous system. In addition, this effort has been developed on several platforms, such as the Internet of Things (IoT), to provide If an emergency occurs, a roadside breakdown assistance will promptly arrive at the location. When paired with present technology, this will particularly increase the quality of human living and help reduce the required workload.

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