

# OnRoad Fuel And Breakdown Management

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**Abstract:** *The objective of the project is to create and implement a fuel and breakdown assistance on-road system that makes it easier for customers to refill their vehicles and to access mechanical assistance in the event of an on-road emergency. The system is composed of four modules: Admin, Fuel Station, Mechanic and Customer. An admin module will take care of the overall management of the system. This module will allow the administrator to keep an eye on and manage the operation of the system. A fuel station module allows customers to find the nearest fuel station, check the fuel prices and book the delivery of the fuel to the customer's location. A mechanic module allows customers to ask for mechanical help and connect with the nearby mechanics so that the customer can get back to the road as quickly as possible. A customer module will give the customer an easy-to-use interface that allows the customer to access all of the services that the system offers. The customer can log into the system and use the services provided according to their requirement. The system will be based on modern technologies that ensure scalability, security, and ease of use..*

**Keywords:** on-road emergency

## I. INTRODUCTION

On Road Fuel And breakdown management system will be a great solution for people who need help in remote areas with mechanical problems and fuel management of their car. Users of the system will be the members of the registered public and will be connected with the specific mechanic through the reliable On Road Fuel And Breakdown Management system. On road fuel and breakdown management system is a website that functions as a fuel Uber[1]. If you need to fuel your car but don't want to go to a gas station, simply visit the website and sign up. Then, you can click on the 'Request Fuel Delivery' button in the download location-based website. On road fuel and breakdown management system is the on-demand gasoline and diesel delivery website. It guarantees the timely delivery of the fuel to the customer. The vehicle needs to physically arrive at the gas station for refuelling. The speed of modern life and the hustle and bustle of business necessitates innovation. On road fuel and breakdown management system works in a straightforward, safe and dependable way to meet the needs of your customers. On Road Vehicle breakdown assistance system, you can search for a list of mechanics at any location or nearby locations that can help you in an unexpected situation caused by the mechanical problems of your vehicle. Only Trusted mechanics can be listed here during the search. Road assistance for car there are available mechanics who can come and fix the mechanical problems in your vehicle. It consists of 4 modules:

1. Admin
2. User
3. Mechanics
4. Fuel station

## II. METHODOLOGY

Until now, the literature on vehicle breakdown frequency has not focused on the effect of various factors [3]. However, in recent years, there have been a number of studies on macro level safety models, where spatial aggregated accidents have been modeled against area wide variables. These models have used various aggregation levels, including census tract, traffic analysis zone, county, city, state, and country. Attributes associated with these spatial aggregations (e.g.

population size, density of population, income, characteristics of land use, environmental variables, characteristics of traffic, trip generation rate, road density etc.) are commonly used to model crashes.

Crashes, vehicle breakdowns and hazards affect traffic speeds and create congestion. Understanding the factors that affect the frequency of traffic incidents is useful in suggesting countermeasures. While several studies have been conducted to evaluate crash frequencies, research on other types of traffic incidents is limited. The primary focus of this study is to determine critical variables that influence the number of vehicle breakdowns reported.

**System Design:**

Develop a comprehensive system architecture that encompasses user interfaces, databases, communication protocols, and security measures.

Design intuitive and user-friendly interfaces for mechanics, fuel stations, and users, ensuring ease of registration, profile creation, and interaction.

**Database Development:**

Design and implement a robust database structure to store mechanics profiles, user data, fuel stations details, payment information and feedback.

**III. EXISTING AND PROPOSED SYSTEM**

OnRoad's current fuel & breakdown management system allows vehicle owners to ask for fuel delivery & breakdown assistance by selecting their location, fuel type, and quantity. A fuel delivery truck will be sent to your location [2]. If your vehicle breaks down, you can ask for help and a mechanic will be dispatched to your location. You can monitor the status of your request on the OnRoad platform.

Proposed system OnRoad's new fuel and breakdown management solution will include new features to improve the user experience. The new system will include a pay -asyou-go payment system, so you can pay directly for your fuel and services. The platform will provide you with a detailed list of fuel stations and mechanics near you, so you can compare prices and services in real-time. The new system will also have a rating and review feature, so you can rate your experience with your fuel delivery truck and your mechanic. This will help you improve the quality of your service. The system will also give valuable insights to fuel delivery and fuel breakdown management companies, so they can optimize their services and enhance the customer experience.

**IV. BACKGROUND**

**Technologies used in the project:**

ReactJS is a JavaScript front -end library that allows you to build reusable UI components in a declarative way. It is a component -based, open-source, and has a strong foundation with a large community. It is responsible for only the view layer of your application.

React was originally created and maintained by Facebook. It was used in their products such as WhatsApp & Instagram.

**Node JS**

Built on Chrome's JavaScript runtime, Node.js allows you to build fast, scalable network applications in just a few lines of code. Using an event-based, I/O nonblocking model, Node.js is lightweight and efficient[5]. It's ideal for data-rich real-time apps that run on distributed devices. The Node.js library also offers a wide range of JavaScript modules to make web app development easier.

**V. RESULT AND DISCUSSION**

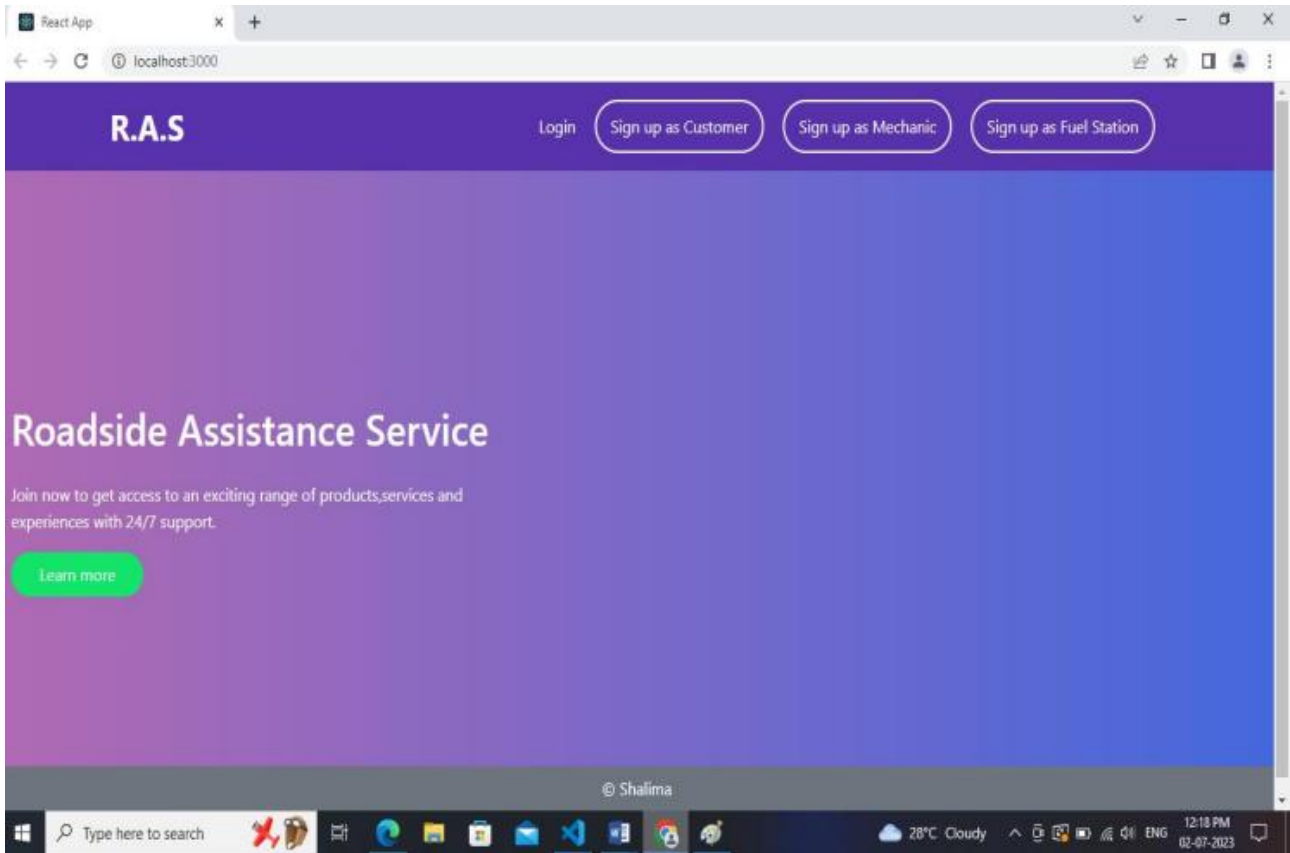


Figure 1: Homepage

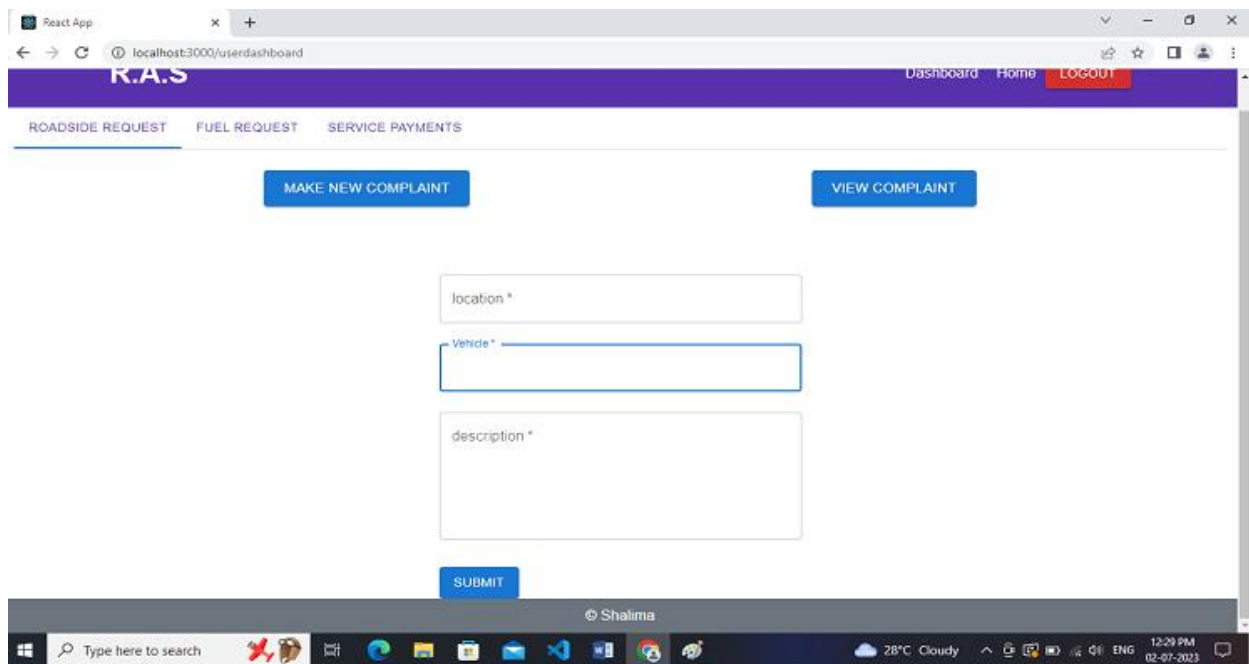


Figure 2: Manage or view complaints

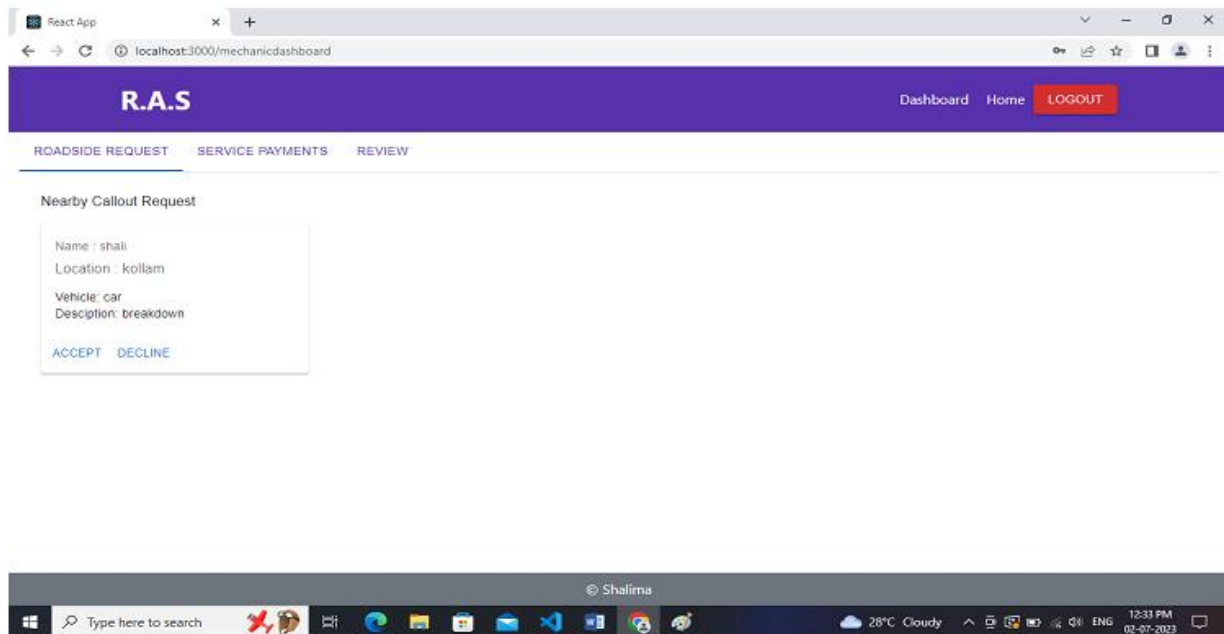


Figure 3: Manage or view complaints

## VI. CONCLUSION

This project will decrease the fuel consumption by providing fuel and requesting breakdown management. In case of emergency, the user can order fuel from his current location and request breakdown management. There are four login options on the website: home screen admin, fuel station, mechanical and user. Users need to select the appropriate login option to log into the application. When a user first uses the app, they have a chance to register. Therefore, they need to enter the required information. Users can either order or cancel the fuel and request breakdown management based on the available mechanics. In order to order fuel, you must enter the fuel quantity. The user's location is monitored using the device's live location. The user can view and select the nearest gas station within a certain range. When a user places a fuel order, the order is routed to their floor managers. The order placed by a user must be processed, and depending on mechanics availability, the user can follow the process described above for breakdown management. A fuel management system is a combination of hardware and software. It allows fleet managers to monitor, manage and optimize the utilization of fuel and ultimately reduce costs. It monitors a broad array of data, collects information, and displays it on a cloud-based platform to measure your fleet's fuel operating expenses and reduce fuel consumption.

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