ON ROAD VEHICLE ASSISTANCE SYSTEM

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ABSTRACT

On Road Vehicle Assistance System aims to develop a Car Breakdown Service Station Locator System. The proposed system connects Car Repair Service Providers (CASP) and the Public through this system. As part of the expected results, the proposed system connects Car and Ambulance Service Providers (CASP) and the Public through this system enter information with regards to the place of breakdown in the system using mobile phone, tablets. The system will automatically search for any CASP nearest to the reported incident spot. The users are able to contact service provider CASP to contact the service provider which is nearest to their location. It is the real-time surveillance system.

KEYWORDS: Car Ambulance Service Providers, Car Breakdown, Car Breakdown Service Station Locator System.

I. INTRODUCTION

On Road Vehicle Assistance System is the Car Ambulance Service Providers as they are more knowledgeable and for personal safety on the road as well. Contacting the Car Repair Service Providers is the main concern at this point as the public has limited information to the providers. All these happen on the road as the drivers will get panicked when cars break down and they have no idea who to seek for help. The scammers take advantage of this and make their service looks convenient, but it is actually a scam. From the above problems, it is important that further investigations should be made to solve this problem faced by the public. There must be a solution to this problem, not just to decrease the tow truck scam incidents, but to help the public to contact a trustworthy service operator to assist them in such situations too. The other interesting part is that, travelers can use this application since they are just few taps away to communicate the problem and get immediate possible assistance. In this crazy world with amazing technology, everyone is using Smartphone. People with android phones and tablets can install our application and can have access to our assistance service when needed.

II. METHODOLOGY

Travelling to different places at a higher distance creates an issue of facing mechanical or accidental issues. While travelling to unknown places travelers or drivers may not know nearby services center or hospital. Current system are not able to provide the quick result for unique requirement. To solve the scenario be proposed or road driver assistance system to solve certain issues for a above problems. Following are the methods to solve problem.

a) Proposed System

The assistance provided to the travelers are in wide range where they can enjoy in all in one manner. The services provided are made available with the information of the service provider with which the traveler can have access. The access to and the presence of services are made to known to the travelers with Google API for map services.

b) Advantage of Proposed System

The traveler is provided with more services with more services and support to ensure that they have a good travelling experience. The traveler can have easy access to the services based on the current location using
Google Maps Navigation System. The services are provided in a wide range so that travelers enjoy the maximum benefit out of it.

c) **System Requirements**

**Hardware Requirements:**
- Android phone
- Core i3 Processor, 320 GB HDD, 4 GB RAM

**Software Requirements:**
- Java (Version 8) + HTML5
- Angular JS
- NODE JS
- Android Studio
- .NET

d) **List of Modules:** Road Assistance system project comprises of 5 main modules which are listed below:
- Mechanical Module
- Tyre Repairer Module
- Service provider person
- Ambulance service
- Petroleum service

### III. MODELING AND ANALYSIS

![System Architecture Diagram]

*Fig 1. System Architecture*
Module Description:

- **Mechanical Module**:
  In case of mechanical breakdown & accidents, change user has to find someone who offers this service and more over the service provider should be available closer to the user’s location. Tow service module helps user to find the available service providers based on the user’s location details.

- **Tyre Repairer Module**:
  In case of tyre puncture, tyre change user has to find someone who offers this service and more over the service provider should be available closer to the user’s location. Flat tyre module helps user to find the available service providers based on the user’s location details.

- **Service Provider Person Module**:
  Service station Module helps the user to navigate and locate the nearby service stations. Service station module helps to find the service station location, details, contact number and distance from user’s and operation timings. This module is directly connected & linked to the web services like Google which gives the service station data based on the user’s location.

- **Hospital Module**:
  Hospital Module helps the user to navigate and locate the nearby hospitals in case of any accidents or emergency situations. This module is directly connected & linked to the web services like Google which gives the hospital data based on the user’s location. Hospital module helps to find the Hospital location, details, contact number and distance from user’s location and also about the ambulance services.

- **Petrol Service Module**:
  Fuel station module helps the user find the nearby Fuel stations in case of insufficient fuel on vehicles. Fuel station module gives output of locations of nearest fuel station with respect to the location of the user. This module is directly connected to the web service which fetches fuel station data based on the user’s location.

- **Uml Diagrams**
  The Unified Modeling Language (UML) is a general-purpose, developmental, modeling language in the field of software engineering that is intended to provide a standard way to visualize the design of a system as shown in fig 2.

  In 1997 UML was adopted as a standard by the Object Management Group (OMG), and has been managed by this organization ever since. In 2005 UML was also published by the International Organization for Standardization (ISO) as an approved ISO standard.[2] Since then it has been periodically revised to cover the latest revision of UML.
Above figure shows that the how the application will work when the end user will actually going to use it.

Followings are the some contents of the project which will shows the how application will going to work actually.

- **User 1**: It allows user to register their details in order get access of the application.
- **User 2**: It allows user to fetch the location of the services provided by application in order to access them.
- **Road Assistance System**: The traveler is provided with more services and support to ensure that they have a good travelling experience. The traveler can have easy access to the services based on the current location using Google Maps Navigation System. The services are provided in a wide range so that travelers enjoy the maximum benefit out of it.
- **Json & Jsoup Configuration**: JSON is java library; it provides a very convenient API for the extraction of & manipulating data. JSUP is java HTML Parser.
- **Service Provider Information**: A Services provider information gives the all information about the all types of services which will be provided by web application to access them.
- **Information Gathering**: Information of all the services $ all their list of the Tyre repairer, Hospital, petrol pump which provides the nearest location to the user.
- **Map Integration**: It gives the nearest location from user location at given service which is specified to limited distance.
- **Location Services**: Its gives nearest location services from user location.
III. DFD (DATA FLOW DIAGRAM)

• USER DETAILS

Fig-3

• HOSPITAL DETAILS

Fig-4: Level-2 Data Flow Diagram For Hospital Details

• SERVICE STATION DETAILS

Fig-5: Level-3 Data Flow Diagram For Service Station Details
• FUEL DETAILS

![](image1)

**Fig-6**: Level-1 Data Flow Diagram For Fuel Details

IV. RESULTS AND DISCUSSION

• Home Page

![](image2)

It allows user to welcome on Home Screen $ Select the Services which will be user need.
• Nearest Hospital Location

It directly connected to the web services like Google which gives the list of Hospitals which is based on user location.

• Nearest Petrol Pump

It directly connects to the web services which gives the list of the petrol pump based on user’s location.

V. CONCLUSION

In this paper, we presented the design and implementation of android application called Road assistance system, with which mobile users can get travel related service information they need anytime and anywhere. The development cost of this Car Breakdown Service Station Locator System is being kept to a minimum and that is why it is capable of providing assistance to the user with free of charge on the application download. The system provide information query of the Fuel stations, Hospitals, Service station details, and the importance services for the travelers like Flat tyre service provider details and tow service provider details based on the user’s location. The system is a combination of smart phone and web services and will help tour and life for user. Tow service details can be accessed from the application, which is stored in the server as part of the
broader roadside assistance service. Positioning support (GPS), highlights the user’s current position on the map. The built application successfully provides ease of access (one-touch access) for locating required service.

VI. REFERENCES


