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On road assistant finder

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Abstract

The proposed application helps to find mechanics easily and quickly. It is difficult to find mechanics nearby area wherever you are travelling. This system helps to overcome this issue by providing mechanic details in one click. Here the locator allows you to search mechanics from different locations. Admin is allowed to access and manage mechanic details. This online mechanic locator reduces work and can easily find the mechanics from various location. Reduces your time and cost. The main objective is to provide a better service and to make the process easily and finally appointing a mechanic quickly. Proposed system is accessed by three entities namely, Admin, Mechanic and User. A mechanic can perform task such as viewing request received from users and can also send feedback to the admin. User can send a request and can appoint a mechanic on respective date-time. A service organization is a business entity that takes care of servicing a customer instrument in the after sales domain. As the customers and size of operations increases, the organization divides the geographical area into service areas and branch locations, to allow Engineers to be more responsive to the customer-needs.

Keywords: Assistant, Mechanic, GPS, Booking Appointment, Shortest path

1. Introduction

Now a day's most of the people uses their vehicle for their own transportation. While travelling most of the drivers facing problem as vehicle breakdown on the road. This causes a waste of time and the worst experience they have to face. In that case, the driver has to search for a nearby workshop and mobile mechanics to rectify their problems. So, it's hard to find the mechanic or emergency assistant in the middle of nowhere. But if driver have an android phone, he can easily locate the workshop and mechanics easily with their profile details. User can save their time by finding nearby mechanics with the help of mobile phone. Another very significant benefit is that now the person can locate a specialist based on their position. If a consumer requires automobile spear-parts, the facility to check any shops is available. If a person has a technical issue with their car, they can ask for help through message. It will help to create a platform that will help mechanics and drivers work more efficiently. This device alleviates the problem by supplying mechanic information in a single click. The locator here helps you to look for mechanics in various locations. Through mobile assistant finder saves time and allows you to find technicians in a variety of locations. It saves you time and money. The main goal is to have better service, make the process easier, and then quickly hire a mechanic. The person must have a clear understanding of how to use a cell phone and the internet. The user must first build an account by

logging in with his phone number or a username and password. The most remote locations can now connect to the internet, so we can now use this application, that can be used by people in distress due to a breakdown to incorporate the many potential assistance that can be given during the journey. Individuals with Android phones and tablets can download our application and use our assistance service whenever they need it.[1-5]

2. Problem Identification

2.1. Aim of the Paper

This paper is primarily intended to reduce the amount of time spent waiting of the drivers. The driver's region is measured using the built-in GPS feature in smartphones, and the optimal route from their current position is found using Google Maps Application Program Interfaces (API). Everyone is eager to use this phenomenal handheld app in this insane world with the ability to perform almost any task with a variety of applications on the Google Play store - a location where several million smartphone applications can be found. People in the Android community will now be able to download this app and have access to our assistance service whenever and wherever they need it.

2.2. Issue

The current system provides assistance to travellers, but it is severely limited in terms of the facilities it offers. Assistance through helpline is vulnerable to unavailability, which exacerbates the traveller's experience. The facilities available to travellers are not open to them due to their location. Users keep books to keep track of information such as product details, distributor details, orders, sales details, and accounts for each month. Maintaining historical records is extremely difficult. The traveller is totally unaware of the facilities available in their immediate vicinity. Users may feel insecure in the middle of nowhere without knowing the details about the mechanic and workshop. Due to unavailability, individuals are often forced to remain in situations where they receive no assistance. Finding support only from mechanics is not quite enough for the users and their needs are remain unfulfilled only with the mechanic service.

2.3. Factors affecting vehicle performance

Some problems affect vehicle performance, so it's not good for long-distance travellers and active drivers that may cause sudden failures. The sudden failures are difficult to solve without the help of the assistant. The main failures are flat or faulty battery, damaged tyres and wheels, Engine problems, Transmission, Starter motor. These kind problems are very difficult to solve without assistant and also hard to find better solution in that particular time. Vehicles may also get affect by climatic changes and un-usability. Users must have knowledge of the factors that are affecting vehicle performance by that everyone can easily manage and maintain the performance.

2.4. Work flow

The working flow of this system is based on application and user interaction. The first step is switching on the app and allows permission for the location, and it provides access for GPS to grab the user's location within a minute. The working flow of this system is based on application and user interaction. The first step is switching on the app and allows permission for the location, and it provides access for GPS to grab the user's location within a minute. If a person became a new user for this application, they must have to create an account for further access and they can easily book an assistant whoever they want within the nearby location.[6-10]

3. Proposed System

3.1. Application

Android product creation is the method of creating new apps for smart phones that run the Android operating system. According to Google, Android applications can be written in Kotlin, Java, and C++ using the Android software development kit (SDK), but other languages are also supported. Google Maps is a popular tool for determining the destination location, calculating distance, and estimating travel time from your current location. Basically, Google Maps has a large number of application programme interfaces (APIs) that allow you to integrate Google Maps' excellent features and effectiveness into Smartphone applications.

3.2. Grabbing location

The assistance given to drivers is extensive, and they can take advantage of it all at once. The services are made accessible along with the service provider's records, which the traveller may access. The Google Maps Navigation System informs travellers about system availability and

accessibility. More services and assistance are given to the traveller to ensure that they have a pleasant journey. Using Google Maps Navigation System, the traveller can easily access resources based on their current location.

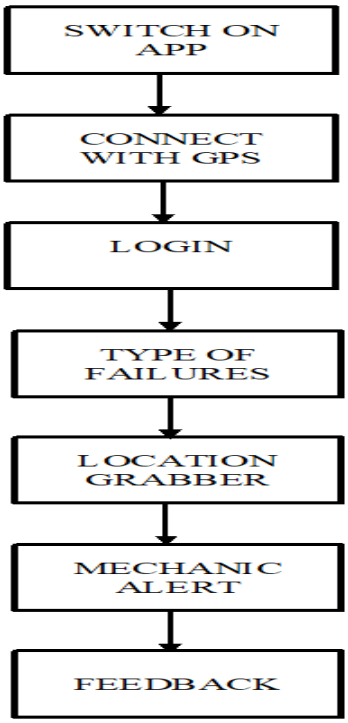


Fig.1. Work flow

3.3. Modules

In this system, there are three modules are available. They are assistants, users, and admin. The user and assistant are making their interaction via chat without the help of the admin. Once the user selects the assistant, the admin makes sure the assistant available at the time and allocates the particular assistant to that user. After the work gets over, the assistant notifies through a message to the admin that the admin can make him available again for workspace. This is a cyclic process through all the day any assistant can make them available whenever they want with no restrictions.

3.3.1 Assistants

Assistant are categorized based on their skill and performance. Assistant can improve their orders and customers with the help of this application. The assistant can also attend to many orders and customers with no limitations. This kind of opportunity became very productive for the assistants and get helps to develop their performance.

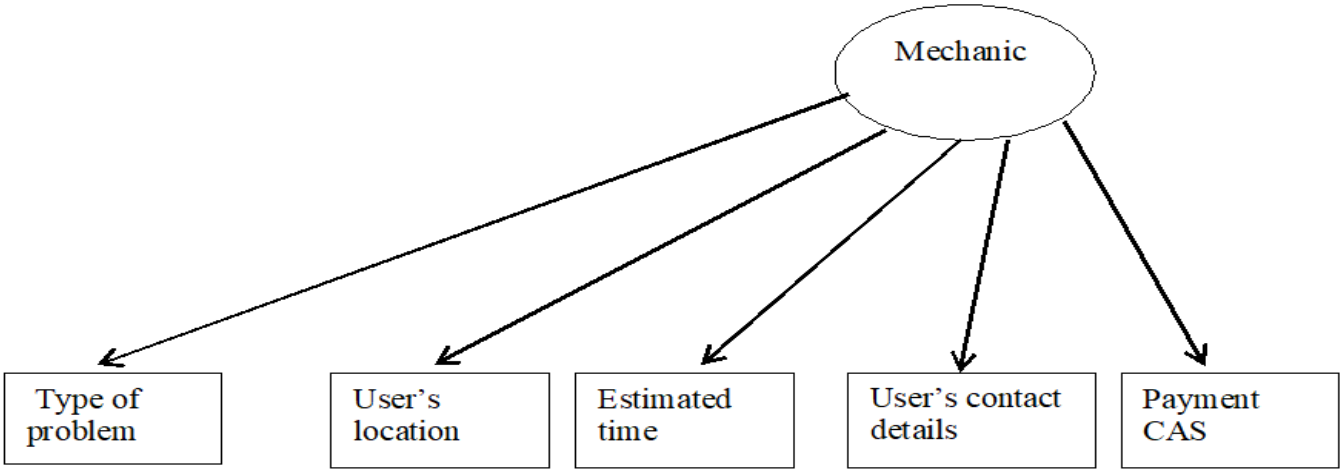


Fig.2. Assistant's flow chart

3.3.2. Admin

User and Assistant's data are processed and maintained by the admin. The major role of the admin is to allocate the nearby assistant when the user needs assistance. Admin allocates based on Dijikstra's shortest path algorithm, which shows the closest customer first, followed by other customers in a cumulative order. Following the selection of the appropriate customer for service, features such as calling the customer will be allowed, and the assistant will be redirected to the user's location using Google Maps.

3.3.3. User

Users step into this application by registration and make the location access with GPS through mobile permissions and search for the assistant based on the failures. If the user can't find the problem, there are options there for other faults so they can search assistant according to their problems and it will give the nearest assistants within the closet location. Users can pick the particular assistant with their ratings and performance. Assistant details are transparently displayed for the users so they can trust them with no objections this leads to secure interconnection between them. After that, they can book their assistant and get help from that assistant for their happy journey.

3.4 Type of Failures

There are some types of failures that are categorized under common fault. They are given below.

3.4.1 Faulty Battery

Leaving the lights on when the engine is turned off is a common cause of flat batteries. However, there's a fair chance the battery problem is due to a lot of short trips or a bad electrical link. This fault mainly because of leaving your vehicle unattended for an extended period of time or just using it for short trips, a problem with the battery itself, a problem with the vehicle's charging system.

3.4.2 Damaged tyres and wheels

Punctures are normally met with a groan, just like flat batteries. A sharp object is always to blame, but other factors include becoming older (due to worn tyre tread, even if still legal), the tyre and rim separating after a collision, and so on. The valve (where air is pumped in and out) stops or is broken if the tyres hit a kerb or a deep pothole.

3.4.3 Engine problems

Broken coolant or leaking hoses are most likely to blame for these issues. If the latter happens, the engine will become overheated, resulting in breakdowns. Examine the belts and hoses for signs of softening, cracks, or peeling. Check the auto fluid levels with a dipstick. Test the gas mileage and see if there are any unexpected declines.

3.4.4 Problem with brakes

The brakes are the most critical protection feature of any vehicle. Make sure the brake pads and rotors are checked twice a year. According to the car manual's specifications, you can need to change the brake fluid every two or three years. If the brake pedal feels sluggish or if you hear a metallic grinding or screeching noise when you brake, the brakes need to be repaired.

3.4.5 Transmission and starter motor

If your mileage suddenly decreases, you can have a transmission problem. If you're driving in one gear and it suddenly changes, it may be a symptom of a transmission problem. Other indicators of transmission issues include unusual engine noise and a thorough inspection of the car.

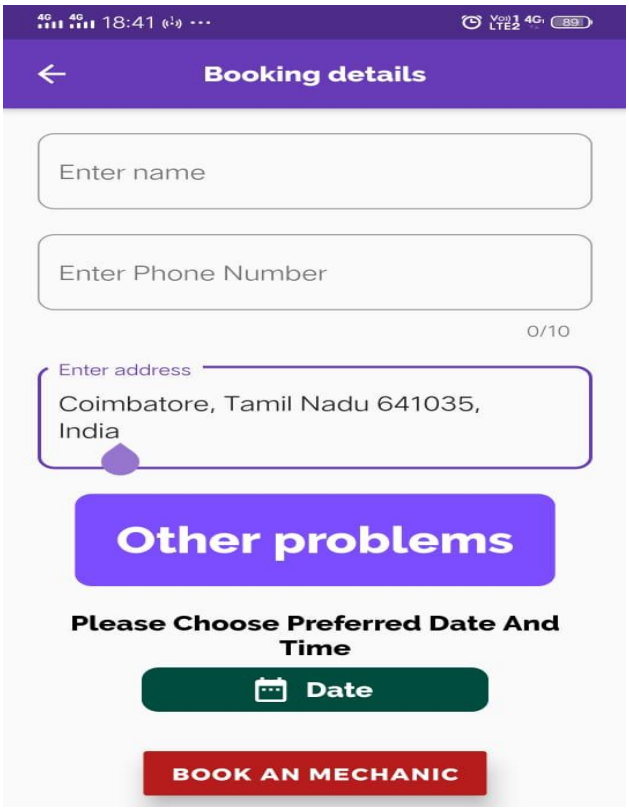
Even though starter motors are strong and durable, they will inevitably wear out. Possible faults can be eliminated and rectified by keeping up with the vehicle's maintenance on a daily basis.

3.4.6 Low fuel

The fuel filter is responsible for cleaning the fuel until it enters the engine. The fuel filter should be checked at regular intervals, because if you haven't done so in a while, it could be clogged, resulting in low fuel pressure. Fuel pressure in the fuel rail is regulated by the fuel pressure regulator. If the fuel pressure regulator is malfunctioning, the fuel pressure in the rail will be too low or too high. This portion failing is not very often, but it does happen. Gas pipes under the vehicle are frequently made of steel or aluminium, and if you touch a block, there's a chance they'll get crushed, resulting in low fuel pressure.

3.5 Booking

Users can book an assistant at a specific time and location with no delay. After selecting the assistant user will be directed to the confirmation booking page and payment will proceed.



Conclusions

When a car malfunctions, the driver must see a mechanic or a repair shop. The driver must get assistance from the crowd. If a driver uses this car breakdown assistance, he or she can quickly locate a mechanic near their place. The driver can get mechanical assistance quickly and conveniently. If spare parts are needed when restoring the car, the user must locate a spare parts store. When a malfunction happens, the customer may also locate a repair shop or spare-parts store. This can assist the customer in saving time while driving. The reliability of the whole machine is improved by automating it. It has a user-friendly graphical user interface that outperforms the current setup. It grants approved users sufficient access based on their permissions. It completely eliminates communication delays. Data updating has never been simpler.

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