"SMART MECHANIC SYSTEM"

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Abstract – *An android is based electronic devices such as Smartphones and computer tablets are mostly used for many intentions like instant messaging, gaming, word processing, Internet and download number of applications online. A boom of android phones has enabled to change PC's software and other licensed software development technologies. There are dissimilar kinds of Mechanic applications developed in android Smartphones which help Users and their mechanics to decrease time and money efficiency. In this survey work, an application is developed that locates the nearest about two km radius with the proper mechanic. The nearest position of mechanic shop is planned with a constitutional feature of (GPS) in Smartphones and finds the way from their present location through Google Map (API). An informative survey of different mechanic shops in location is conducted to capture an exact list of mechanic's available in each nearest mechanic shop. With the help of this smart mechanic android-based application, a users can determine the nearest mechanic shop according to nearest mechanic accessibility. Profile done of mechanic and mechanic shop is obtainable in the application contain the mailing addresses and contact numbers.*

Key Words: Smart mechanic, Smartphone application, Google MAP, Caregiver Mechanic etc.

1. INTRODUCTION

The system proposed here will help the users book a mechanic easily in an instant. The user will have to select the mechanic Destination. In case of emergency, the user will have to just select the pick-up point and the system will automatically book the nearest Mechanic shop. Once booked the Mechanic operator will receive a notification for confirmation of the booking. The Mechanic can view the pick-up and drop location on Goggle Maps. The users will receive the contact details of the Mechanic. The Mechanic Shop can also view the booking history.

This is how this Mechanic Booking App will act as a Time savior in times of Vehicle emergency. In this system, the User will be able to book Mechanic in advance according to the Vehicle Problem and selected Nearby Mechanic shop, or the user can also book a Mechanic for emergency regardless of its Vehicle Problem and a random shop will be allocated to the user. Then the Mechanic will accept or reject the booking from the user, after accepting or rejecting the status will be updated for the same to the user. Mechanic can view the bookings history of the user for that particular Mechanic shops. We got the solution of the problem "Smart Mechanic". Using this we can book our mechanic anytime anywhere. who comes to your location and solves your problem? this all will happen using just application. you just need to login, share location and problem to your nearby mechanic.

1.1 Objective of the work

In now days Mechanic plays a very crucial role when an accident/vehicle problem occurs on the road network or in case of any vehicle emergency and the need arises to vehicle. Manual call of a Service Centre at times of emergency can take away precious time as it is a time-consuming process. Furthermore, the delay caused due to the heavy traffic congestion in between the pickup spot and the Service Centre facility does not do anything. This is how this Mechanic Booking App will act as a Time savior in times of Vehicle emergency.

- Follow simple steps to book mechanic.
- Properly booking mechanic.
- Customers car problems are solved.
- Search nearby mechanic.
- Successfully implementing all procedure.

1.2 Project scope

Currently, this application shows the static list of mechanics available in the particular area. This application can be enhanced to provide real-time information about the mechanic present in particular time in the specific area. This application is designed and tested within the Specific area and possibly not work outside the city at the moment. Furthermore, this application can be upgraded to cover more cities and all major area of India. Presently, a radius of two km is fixed in the coding and in later version user can be select their specific radius by their own. This application is designed for android devices, later it will be designed for Android, windows OS and other popular mobile operating systems. A questionnaire survey will be helpful in determining the benefits and usability of this application in general users.

2. METHODOLOGY

This research work was conducted in two steps. The first step was an informative survey and it conducted to gather the latest information about mechanic shops and mechanic. The next step was to execute an application for android Smartphones, so that it will be available to all android users. After a while it will be implemented something else mobile operating system. Figure 1 shows the flowchart of the entire project.

2.1 Informative survey

The first step was to collect authentic information about mechanic and mechanic shop that would be used in the application database. For this purpose, an informative paper-based survey was conducted in five major mechanic shop in specific area with the aim of acquiring valid information such as a mechanic shop, a list of mechanic, mechanic contact numbers.

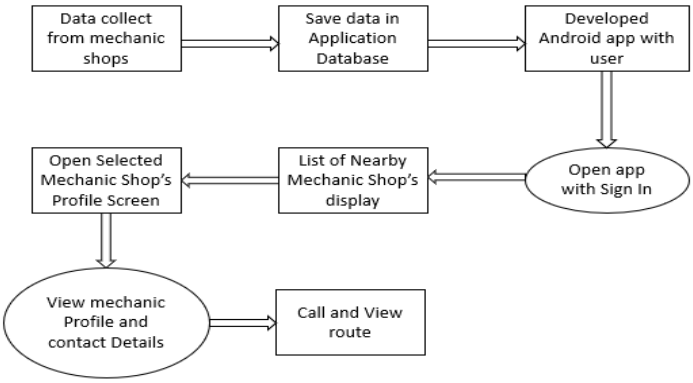

Fig 1 : Flowchart of Project Implementation

2.2 Development tool kit

This smart mechanic android-based application advance in Java Programming Language by means of the Eclipse Ganymede Integrated Development Environment (IDE). Android Software Development Kit (ASDK) was guide which includes an assortment of practice instrument that help to evolve mobile applications on an android platform and the Android Emulator and the Android Development instruments push-in for Eclipse.

The user interface of the application is kept manageable and clear. A familiar user can easily clear the available of this application. The symbol is selected in kind that the user can easily clear and get to the suitable details. The screens were designed in XML and the basic logic was write down in Java. The web service is associate the android device with Google Libraries in PHP. Google Maps API has been used to make it further for the user to find the nearest mechanic shops.

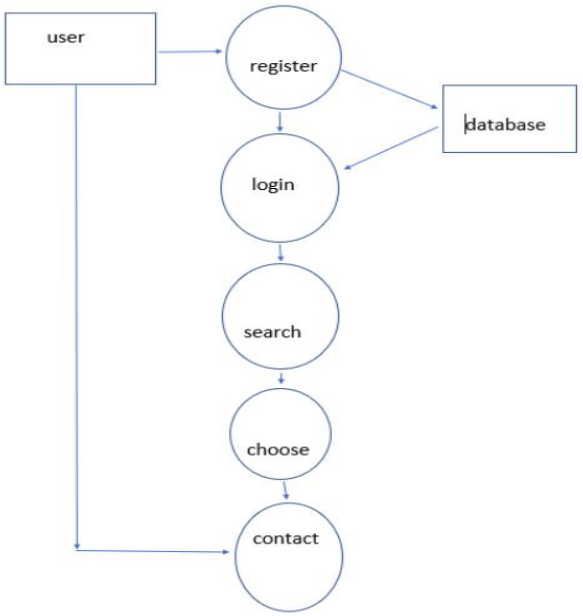

Fig. 4.3: DFD Level 1

3. REQUIREMENTS

3.1 Functional Requirements

1. Database Connection
2. Database on Firebase
3. User Interface

3.2 Safety Requirements

1. Higher Level Authentication.
2. All Information Shared with Encryption.
3. Encryption with Advance Encryption Standard(ADS).
4. Don't use app without internet connection.

3.3 Software Requirements

1. Operating System - Android
2. Application Server - Firebase
3. Front End - XML, java.
4. Database - Firebase real-time database
5. IDE - Android Studio

3.3 Database Requirements

1. System - Level Data Recovery
2. Application - Level Data Recovery
3. Application Data Availability

4. Multi - Level Data Security
5. Application Performance

4. SPECIFICATIONS

4.1 Advantages

- Vehicle Driver can now book a Mechanic for an emergency as well as for non-emergency services.
- User can keep history of the trips and can view any time.
- You can locate the nearest available Mechanic and request the same.
- Instantly get the information contact details of the Mechanic.

4.2 Limitations

- Incorrect inputs will work on the project outputs.
- Internet Connection is compulsory.
- The android mobile user will incapably insert or visibility item if the server collapse.

4.3 Applications

- This system can be used by user's who needs to find out nearest mechanic shop and mechanic for an emergency as well as non-emergency services.

5. CONCLUSION

In this study, a basic and up-to-date mechanic application is designed to help the User's and caregivers(mechanic's) to determine the nearest mechanic shop with a specific area. The mechanic shop names along with their address and route are determined by Smartphone GPS receiver within five km of radius. With the help of Google Map, the distance and route to each of the mechanical shop is displayed for the user. This application is greatly useful in emergency cases as well as for the non-resident person of the specific area.

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