Anywhere Autotech

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Abstract:*Nowadays everyone has a motor vehicle and accidents are one of the worst scenariosthat can happen with anyone of us at any time.Lot of peoples facing difficultiesgetting help when their vehicle breaks down on the middle of their journey. Many ofthem do not have any automobile repair service provider's contact number and couldnot get help as the automobile repair service providers might be far away from their locations.These problems are the motivations for the development of this project to helpthose who are in need when their vehicle breaks down along the roads.So Anywhere AutoTech is the app which will help the customers to connectwith nearby garages and make it easy to solve the problems regarding their vehicles.The customers will not have to bother while they stuck with problems regarding to their vehicles.*

Keywords:RFID, GSM, attendance system, efficiency, reliability, scalability

I. INTRODUCTION

No one knows the situations of the road where you are traveling. On a particular day, accidents may happen or there can be massive traffic, or your vehicle may not respond nicely. Situations are many, but the only answer is a precaution. One way to achieve the solution to the problem is to maintain your vehicle condition and check whether everything is working before going on a trip. The problem with this solution is that it's not full- proof, and if by any chance you encounter some problems in your journey, then what will you do? So, here we are with a modern app-based solution to solve all these problems. Don't worry if your vehicle breaks down during the journey or you face a minoraccident. You can immediately use this app to get assistance at the place where your vehicle broke down. There is a challenge of automobile outdoor service in terms of locating exact GPS coordinate of the car, hence help may not reach on time. The current way thattheir customers to request for automobile outdoor service is either call the shop using phone or ask for other to fetch them to the shop to bring a mechanic to the breakdown location. However, this will introduce some inconveniences. Especially for merely phone calling, it may require the shop to spend more time and efforts to call back the customers again and again to confirm the correct car model, car plate number and broken-down location in case the shop cannot find the vehicle and the customer. Moreover, the shop is also currently facing the problem of some customers cannot wait for long queue. If long queue happened, some customers may choose not to wait their turn and leave the shop. Therefore, the shop is now losing this group of customers and losing some potential profits from them at the same time.

II. MOTIVATION

We assume that almost every Indian are having a vehicle nowadays. However, we must also know the fact of no matter how luxurious a car is, it is still like a human being, luxury or ordinary cars also will be broken anytime and requires to send to "Automobile Garage" which is the mechanic shop for repairing or regular maintenance. Owner can choose to send their vehicle back to genuine service center or any other third-party mechanic shops. However, for the case of third-party car mechanic shops in India, most of them are still operating their business in a traditional and manual way. We cannot predict the timing of our vehicle that suddenly breakdown on theroad. It may due to tire puncture or any other problems that we face during road trip. The traditional and manual way is that the shop is running on first come first serve basis. We can only wait until the mechanics finish serving the customers come before us, then only the mechanics will come to serve us.

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AIM

To develop an android app this helps the people when they are in need of any automobile services. Anywhere AutoTech also aiming to grow the business of local garages by registering them as service provider.

OBJECTIVE

I. To make a user-friendly design that will also make the business of Auto mechanicseasier to run and more profitable.
II. To provide better information for the users of this system for better results andmaintenance of their vehicles.
III. To provide a good level automobile service with reduced cost which will lead toattract more customers.

III. BACKGROUND HISTORY

In last few years every human being is all are digital but only one thing is any vehicle breakdown in on road so what can you do? This is very problem statement in travel life. I understanding this problem & That's reason I making this app for all vehicle users. This app is very helpful for like your own bike, moped, car & commercial vehicle. This app help you about various services for your vehicle at any location & also his provide service to your nearby location. This is one of the best app for growing business in automobile industries.

IV. LITERATURE SURVEY ON EXISTING WORK

The survey regarding this application includes information from several sources. These sources include some of the car showrooms and service centers , various related web sites and similar projects developed previously.

[1]Abhishek Jain, Shiva Subhedar, "Reduction of servicing and maintenance time of car — A future need", IEEE, 11 April2016,2016 International Conference on Advances in Human Machine Interaction (HMI), 10.1109/HMI.2016.7449161. The car industry today is the most lucrative industry in India. Due to increase in disposable income, easy financial environment, change in the lifestyle, adaptation of nuclear families etc. are the major factors which results into high purchasing power of an individual in recent years, because of which number of cars have increased in our neighborhood. With the increase in the number of cars, queues on workshops/mechanic shop for servicing and maintenance have also increased. The objective of this study was to find the different factors responsible for effecting theservicing and maintenance process of a car and to look for the opportunities to reduce time required for it.

[2]Randall Cogill, Olivier Gallay, Wynita Griggs, Chungmok Lee, Zubair Nabi,Rodrigo Ordonez, Martin Rufli, Robert Shorten, "Parked cars as a service delivery platform", IEEE, 3-7 Nov. 2014, 2014 International Conference on Connected Vehicles and Expo (ICCVE), This paper introduces a new view of parked cars as a massive, flexible resource that is currently wasted. Given the power supply in batteries as well as computing, communication, and sensing facilities in cars in conjunction with the precise localization they can provide, parked cars have the potential to serve as a service delivery platform with a wide range of possibilities. We describe diverse applications that can be implemented using parked cars to show the flexibility of the infrastructure. Potential user groups and service providers are discussed. As an illustrative example, a simulation study of the use case of localizing persons in need of assistance is presented. Finally, the need for new algorithms and their analysis adapted to the specifics of parked cars is also highlighted.

[3]Eliane Pereira Zamith Brito, Ricardo Luís Beneduzzi Aguilar, Luiz Artur L. Brito, "Customer choice of a car maintenance service provider: A model to identify the service attributes that determine choice", International Journal of Operations & Production Management, this paper investigates the determinants of customer choice of a car maintenance service provider after the warranty period. It focuses on the alternative of using branded car dealers, who provide this service during the warranty period, or independent garages. A comprehensive list of 30 service attributes is developed drawing on the service quality literature, specific previous studies on car maintenance services, and including other purchase behaviour determinants such as perceived value. Simple random sampling with replacement is used to collect data from 400 car owners using the actual choice of a service provider as the dependent variable. A quantitative analysis using a set of logistic regressions links directly customer choice to the service attributes.

V. DRAWBACK OF PREVIOUS WORK

The Drawback of this system is that they did not consider vehicle repairing on site, if someone's vehicle having a problem in middle of road journey or any other unknown place, the existing system did not have provision to get there and solve customer's vehicle issue.

VI. REQUIREMENTS

Before stepping into System Design phase, functional requirements and non-functional requirements for this project are listed as follow:

Functional Requirements

1.Customers able to perform user authentication using registered email/password, Facebook, and Google Account.
2.Customers able to perform profile management.
3.Admin able to insert service record.
4.Customers able to book a service from service reminder listing or not from service reminder listing.
5.Customers able to request car breakdown assistant.

Non-functional Requirements

1.The application should be easy to learn, easy to remember, effective, pleasant, and Error-free.
2.The Firebase process should be accurate, and do not have any latency to avoid delaying from the front-end.
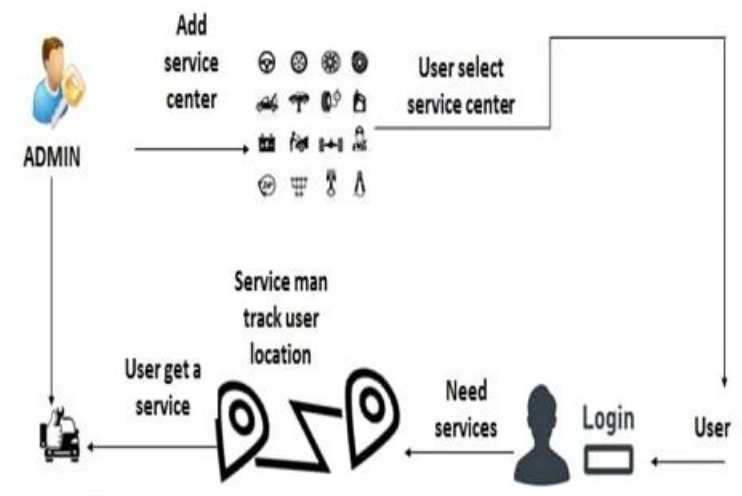
VII. SYSTEM ARCHITECTURE

Figure 1: System Architecture

The client side of the app mainly concentrate on getting new users to register, if user is already registered, they need to login and provide the location input details and thus the nearest mechanic workshop/garage details are presented.

Admin:

The main admin of the application is by using algorithm to find the nearest mechanic garage. By calculating the distance of the user location to all the workshop details and presenting the shortest distance workshop as the output.

Database (Back-End):

The database contains all the details which are used to retrieve such that the mechanic workshops or garages address, contact details etc. The logic uses these details to calculate distance to the nearest shop and also the user registration information is stored as well.

Block Diagram:

Figure 1 shows the overall architecture of the system going to be implemented which consists of AWS EC2 server in between customers side and admin side mainly to support for functionalities of Request Outdoor Services, Make Service Booking, and Service Reminder
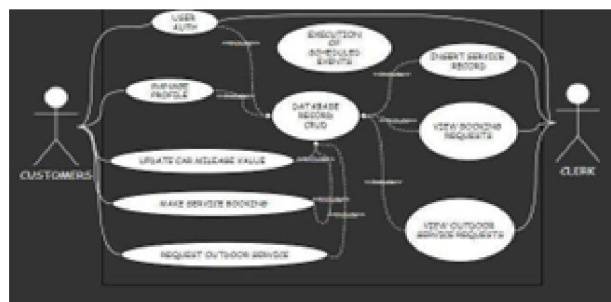

Use Case Diagram:

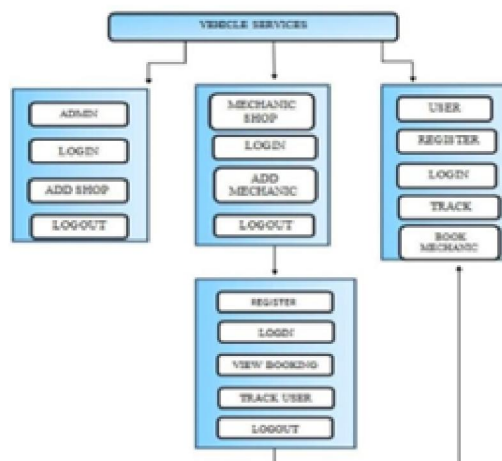Figure 2: Use Case Diagram

Algorithm:

Figure 3: Algorithm

When the vehicle breakdown occurs, the driver have to see a mechanic or the repair shop. The driver has to ask for help from the people. If driver using this On Road Assist Model user can find mechanic basis on user location easily. The user logging in to the App after User Registration. Then User current location track by GPS. Then user location goes to

DB and match with the mechanic who registered with the App. There is shown mechanic that nearest to user location. There is user can give feedback to mechanic after the repair done. This is help to mechanic that they are rated by their client. That is help to burnish the mechanic skills. The details of the functionalities are listed below:

Phase 1: It is a process for adding Registration of Mechanic and User. Mechanic details are stored in the database after the validation. All the details of user and mechanic is stored in real time.

Phase 2: It is an API for Live Tracking. User registration and requisition for the mechanic.System will pick the location using geolocator API. It will live track the mechanic and user vice-versa.
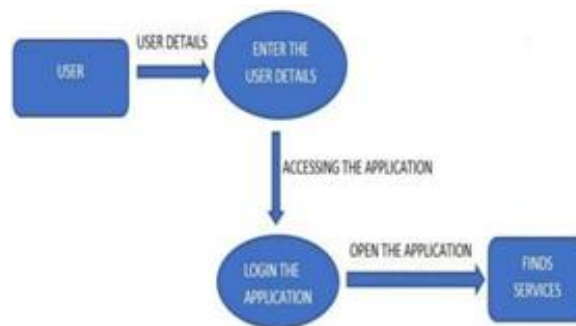
User Module:

Figure 4: User Module

Admin Module:

Figure 5: Admin Module

Data Flow Diagram System (DFD) for describing a method or system data stream (normally an information system). In addition, the DFD provides information on each entity's outputs and inputs and the process itself. The data flow diagram has six process and two sub process. The process consists of login, register, manage contact, Service, price and give feedback. The sub process consists of manage contact and services. The manage contact consists of update, verify and allow/block.Besides, the services consist of request service, select services, and locate workshop / Garage.

Implementation Tools:

Cloud Computing Software-
•Amazon Web Services (AWS) EC2 Instance for web service.
•Web-based phpMyAdmin database management tool reside in the instance to manage the cloud database.
•Cloud MySQL database reside in the instance to store mobile application data.
Software-
•Android Studio act as the IDE to develop the mobile applications and test run the mobile applications in the Android emulator.

APIs-
•Facebook Login API for Facebook User Authentication
•Google Login API for Google User Authentication
•Google Map API for locating the customers with car breakdown assistant need

Front End Admin:
•Login: Admin need to login with valid login credentials.
•View Mechanics: Admin can view the registered mechanics with their details and has the access to allow or block a mechanics.
•View Users: Admin can view all the registered user details.
•View Feedback: Admin can view all the feedback given by the user and mechanic.

Mechanic:
•Register: Mechanics can register with all their information.
•Login: Registered mechanics will be provided access to Login only if the Admin will allow or block.
•View Request: Mechanics can view the request which is sent by the user.
•Feedback: Mechanics can provide their own feedback.

User:
•Register: User can register with all their details.
•Login: Registered user can Login with their credentials.
•Search Mechanics: User can search for local mechanics on the basis of their locations.
•Send Request: On selection of the mechanics, the user can send the request to the respective mechanic.
•Feedback: User can give their feedback accordingly.

Back End
The database will maintain all records about the mechanic shop details and user details in this application. So that it is easy to access and retrieve data from the database. The user can search the nearby mechanics shop which is stored in the database.User details and business owner details are stored in database and it can be viewed by admin. The admin will provide approval for the registered business. The admin will keep on checking the feedback of the user to know the service provided by the mechanic shop.

Advantages:
•Vehicle is breakdown in any location this app will assist vehicle user.
•They can see the location of service stations on the map.
•The user can place calls & booking order to the mechanic and solve their issues.
•Secure registration of user's and mechanics
•Easy access to the data.
•The new system is more user-friendly, reliable and flexible.
•Reduced manual work.
•Search mechanics based on different locations.

Disadvantages:
•Mandatory vehicle user have smart phone.
•Requires an active internet connection.
•System will provide inaccurate results if data not entered properly.

VIII. CONCLUSION

The conclusions can be deduced from the development of the project. Automation of the entire system improves the efficiency. It provides a friendly graphical user interface which proves to be better when compared to the existing system. It gives appropriate access to the authorized users depending on their permissions. It effectively overcomes the delay in communications. Updating of information becomes so easier. System security, data security and reliability are the striking features. The System has adequate scope for modification in future if it necessary.

IX. FUTURE SCOPE

In the life of the software development, problem analysis provides a base for design and development phase. The problem is analyzed so that sufficient matter is provided to design a new system. Large problems are sub-divided into smaller once to make them understandable and easy for finding solutions. Same in this project all the task are sub-divided and categorized.

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