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E-Garage: A Virtual Car Breakdown Assistance System

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ABSTRACT: While travelling sometimes vehicle is breakdown, and searching garage it is waste of time. Driver searches garage near to his location. In E-garage system provides accurate information about nearest garage and also provides facilities around any location, allowing drivers to reduce the time spent searching for garage at the time of incident occur. This E-garage system informs drivers about nearby garage with facilities and have available and at what price.

KEYWORDS: Garage, GPS, Android Application, Payment Mode

I.INTRODUCTION

In this paper, the E-garage System will be developed on android platform due to the time constraint and a lot of research needs to be done to develop the system. The system will use the driver's current location to determine the nearest garage available and display a list of garage nearby for the driver to choose. In order to perform the search of nearest garage, Google Places API for mobile will be used to connect people to places of interest with the power of location awareness on Android. As for the cost of service, the price charged by each garage is impossible to be displayed as the root cause of car breakdown must be determined before the cost can be calculated. The scope of this system will focus on searching the nearest garage for the drivers, providing help to people who do not possess any mechanics number in hand. The business deal is between the garage and the driver which is out of the systems control.Here E-garage provides detailed and accurate information about nearest garage facilities around any location or destination, allowing drivers to reduce the time spent searching for garage once the incident happens. This innovative service informs drivers of nearby garage facilities that have available and at what price.

II. LITERATURE REVIEW

[1] NeelimaSutar, PoojaDorge, Monika Kadam, Prof. RashmiTundalwar, "A Car Breakdown Service Station Locator System".

While travelling sometimes vehicle is breakdown, and searching garage it is waste of time. Driver searches garage near to his location. In virtual garage system provides accurate information about nearest garage and also provides facilities around any location, allowing drivers to reduce the time spent searching for garage at the time of incident occur. This virtual garage system informs drivers about nearby garage with facilities and have available and at what price.

[2] Prof. ShilpaChavan, "Automobile Service Center Management System".

Now a day, technology is on a boost. People wish to live a luxurious life with minimum physical work. Here we provide a mobile application for 'Automobile Service Center Management System'. This application is an android app which can be run on any android compatible tablets and mobile phones. The app will enable any car user to search and communicate with any car service center in the vicinity. The user can find the service center, get its location and check and select any of the services provided by the respective service center. The user can send request for pick and drop, appointment for servicing, test drive as well as accessories purchase to the dealer. The dealer processes these requests and gives a response back to the user through push messages. This app also enables the user to set alarms for next servicing date, payment of insurance instalment, etc. The app is provided with an extra feature of EMI calculator too. Thus we are developing an application which goes hand in hand with the new age technology and characterizes user friendliness, in formativeness and time saving.

[3] VarunKapadi, SaigitaGuruju, BhupeshBojja, Prof. NilimaNikam, "Emergency Breakdown Services using Android Application".

Many android applications are available for intimating emergency services. Our emergency breakdown services initialize the apps and directly connect with Google GPS system and it shows the user current location. If the user in one location wants to search the hospital within 2km range. Our project will show the name and address or location of all hospital those are in the range and the user will be able to select any one hospital, its shows the way to reach our destination. This process is same as that for the petrol pump and same for the service station and police station.

[4] Miss. K. Iswarya, Miss. D. Devaki, Mr. E. Ranjith, "Road Assistance System Using GPS"

The Road Assistance application was developed with the aim of providing emergency road side assistance services round the clock to ensure a pleasurable and uninterrupted journey virtually anywhere. The application is designed to enhance the user experience and ensure that users get immediate and hassle free service in the event of any vehicle breakdown. Our application shall make all possible efforts to locate and direct the nearest service provider to user's location. The application doesn't just assure a prompt service in the rare event of a car breakdown, but it also helps with the mechanical breakdown towing, fuel delivery, flat tyre change and car collision etc. The application helps you to find your nearby service centres as well as the fuel stations in case of emergency situations like insufficient fuel on vehicles and un-avoided incidents like puncture, break failure, doping etc. The exact locations with the distance from your place with the directions using Google Maps let you to know with ease to access with the help of this application on your smart mobiles.

[5] Khoo Jin Sheng, Ahmad SuhaimiBaharudin, Kamal Karkonasasi, "A Car Breakdown Service Station Locator System".

A lot of people are facing difficulties getting help when their car breaks down on the road. Many of them do not have any Car Repair Service Providers contact number and could not get help as the Car Repair Service Providers might be far away from their locations. These problems are the motivations for the development of this project to help those who are in need when their car breaks down along the roads. This project will start with the analysis of the car breakdown incidents on the road. It expects that through some research, the statistics of car breakdowns can be obtained to see if this project is helpful to those in need. The next step would be an analysis and comparison of those existing Car Breakdown Service portals or applications to identify the flaws. Development of a Car Breakdown Service Station Locator System will be carried out after planning and analysis. Internal testing and user testing of the application will be carried out before the system is being deployed. As part of the expected results, the proposed system connects Car Repair Service Providers (CRSP) and the Public through this system. If the car owner's transportation breaks down on any highway or federal road in any part of Malaysia, the owner could enter information with regards to the place of breakdown in the system using mobile phone, tablets. The system will automatically search for any CRSP nearest to the reported incident spot. The users are able to contact the CRSP to service the vehicle. This project aims to develop a Car Breakdown Service Station Locator System. The proposed system connects Car Repair Service Providers (CRSP) and the Public through this system.

[6] "Availability evaluation of machine repairable system with service station breakdowns".

This paper studies the machine repair problem; there are K identical unreliable machines, N identical unreliable service stations and c identical reliable repair facilities in the system. The service stations maintain the failure machines only, and the repair facilities repair the breakdowns of unreliable service stations only. Every distribution of time lasting is exponential distribution. The breakdown rate of each service station is changeable; it may be different between busy time and idle time. We give the transition rate matrix of the model. The availability characters in symbol form for the special case of the model. The numerical example is presented.

III. PROPOSED SYSTEM

In that system will register garages with the provided facility and contact details. The system will fetch the person current location to searching the nearest garage. In order to perform the search of nearest garage, Google Places API for mobile will be used to connect people to places of interest with the power of location awareness on Android. The proposed system will help in reducing the human effort, paper, printer ink and cost for manual changing of the notices.
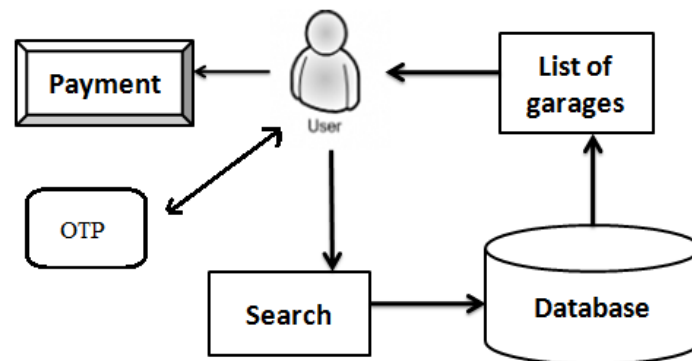
Fig.1 : System Architecture

MODULES

User Management

      User is our main prior of our system, user management module deals with user's registration and access.

Locations

      Location of user and respected garage services around an area is mapped & based on it the distance. We use Google map API Application Interface for getting detailed geographical information for identifying mess around the user over a fixed radius.

Online Searches

      Our applications automate traditional dealing and subscribing garage service over. Before placing request we make sure that the user is registered to avoid anonymous entry, if user gives repeated fake request misusing our application will be blocked by checking their record. Request is placed after selecting garage based on customer's requirements such as price, time, type, rating, reading reviews, popularity, etc. This is done by using appropriate liters which will sort accordingly. Request is only proceed after there is conformation from customer as well as garage service provider for that customer.

IV. ALGORITHM

K-mean Algorithm
Input: K- the number of clusters
Dataset: a data set containing n objects
Output: A set of k clusters

- Step 1: Randomly select k data objects from dataset D as initial cluster centers.
- Step 2: Repeat
- Step 3: Calculate the distance between each data object di$(1 \leq i \leq n)$ and allk cluster centers c j$(1 \leq j \leq k)$ and assign data object dito the nearest cluster.
- Step 4: For each cluster j $(1 \leq j \leq k)$, recalculate the cluster center.
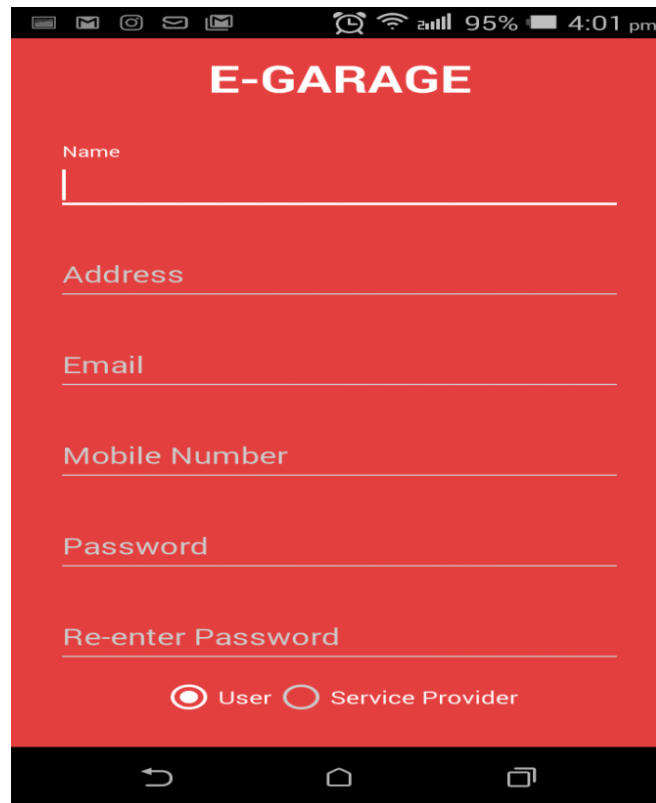- Step 5: Until no changing in the center of clusters.

The computational complexity of the algorithm is O(nkt)
Where, n: the total number of objects
k: the number of cluster
t: the number of iterations

V. RESULTS

Figure 2: User Registration
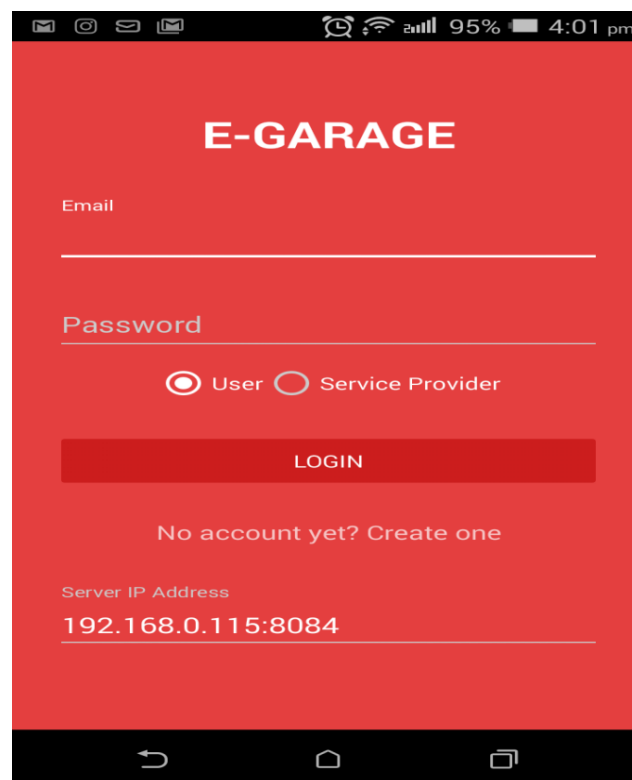

Figure 3: User Login
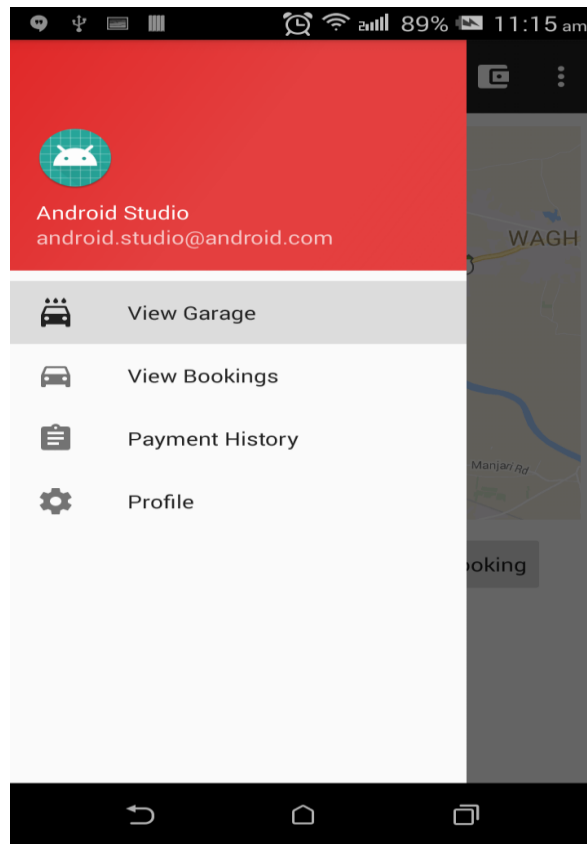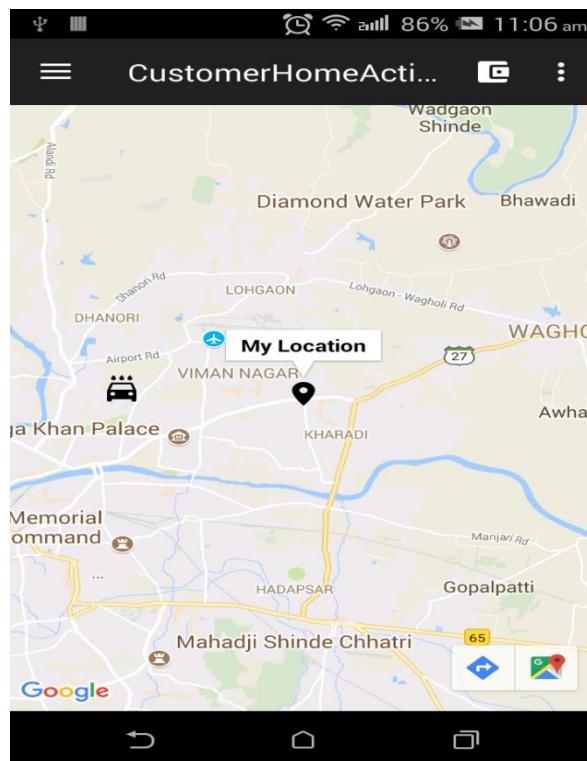
Figure 4: User Home page

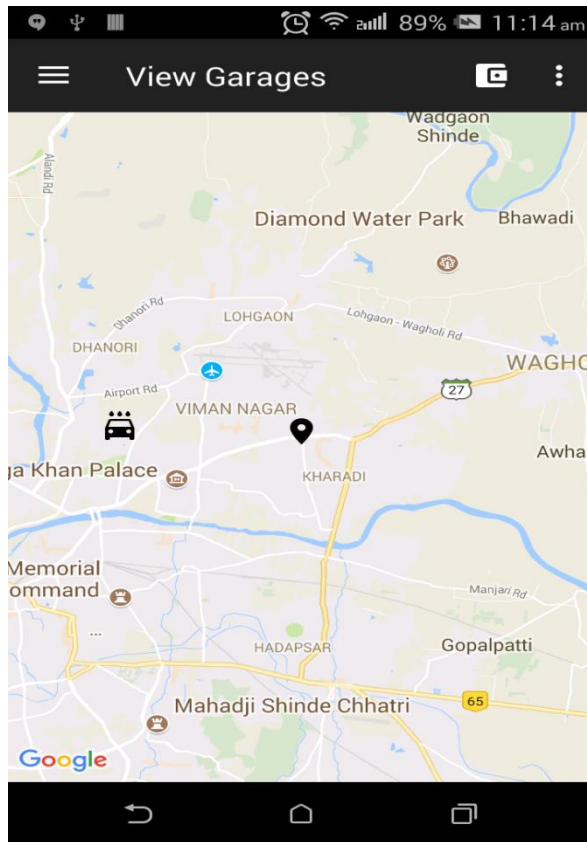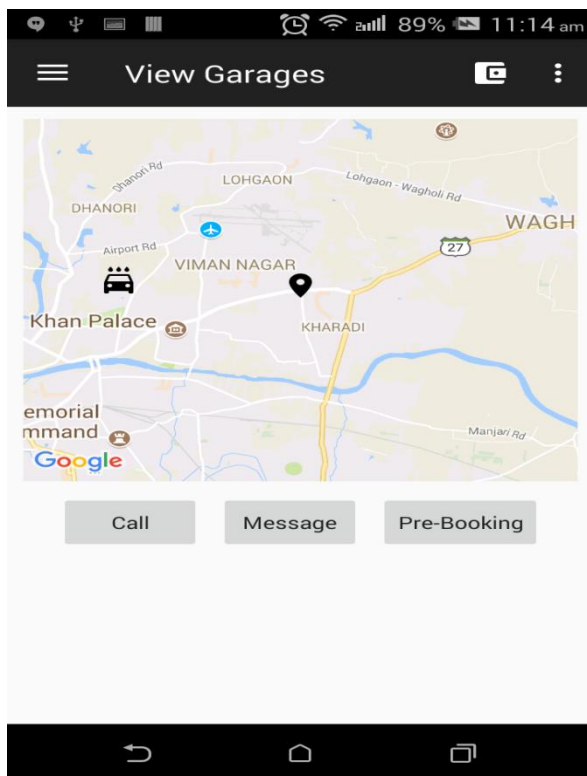Figure 5 : User Location

Figure 6: View Garage

Figure 7: Activity-Call/ Message/ Pre-Booking

VI. ADVANTAGES & APPLICATION

Advantages
- Easy to find nearest Garage
- Virtual payment Facility
- Easy to access
- Save time

Application
- Provide services by garage whenever there is breakdown by searching nearest garage

VII. CONCLUSION

In this paper we have proposed a system which will helps people to find nearest garage on road when their vehicle has breakdown. This will provide accurate information about nearest garage and all the contact details of nearest garage. E-garage system will save time and energy.

REFERENCES

[1] NeelimaSutar, PoojaDorge, Monika Kadam, Prof. RashmiTundalwar, "A Car Breakdown Service Station Locator System", International Journal of Innovative Research in Computer and Communication Engineering, 2018.
[2] Prof. ShilpaChavan, "Automobile Service Center Management System", International Journal of Scientific and Research Publications, Volume 4, Issue 3, March 2014.
[3] VarunKapadi, SaigitaGuruju, BhupeshBojja, Prof. NilimaNikam, "Emergency Breakdown Services using Android Application", International Research Journal of Engineering and Technology (IRJET), 2017.
[4] Miss. K. Iswarya, Miss. D. Devaki, Mr. E. Ranjith, "Road Assistance System Using GPS", International Journal of Advance Research, Ideas and Innovations in Technology, 2017.
[5] Khoo Jin Sheng, Ahmad SuhaimiBaharudin, Kamal Karkonasasi, "A Car Breakdown Service Station Locator System", International Journal of Applied Engineering Research ISSN 0973-4562 Volume 11, Number 22, 2016.

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