

## E-Garage Management System

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**Abstract:** There are three panels which are enrolled in this service, first is user who want to take service, second is the garage who provide the requested services and the Admin who control and monitor all activity taking place between user and service provider (i.e. garage). With the help of this platform user first give the vehicle registration number, after that they can select his/her willing garage, notify problems and get the service (e.g. Tyre puncher, Break and clutch related, engine related etc) and estimated charges will also be generated at the time of placing order. The admin notifies the garage and send OTP to both user as well as service provider. Garage will provide the service and take the OTP in order to notify the admin, after completion of work. Toll-Free service can be used in case of emergency. User is able to give feedback to the service provider based on the performance which helps the admin to give rating to the garage.

**Keywords:** Active garage, Android app, E-garage, Nearest garage list, Toll-free emergency service.

### I. Introduction

In today's developing era, the numbers of vehicles are increasing in almost all over the world. So providing efficient service to each vehicle user is a challenging task for garages in future. And vehicle users have to stand in queue for getting service. Using this application the user can locate the nearby active garages/mechanics and communicate with them to get service in need. The purpose of designing this application to facilitate the user as well as service provider (i.e. garage) user will be benefited because they not need to move the garage which ultimately saves the time, efforts and money. On the other hand (for garage) number of user increases which increase the turn over and give high return of investment.

### II. Literature Review

In this era of technology everybody wants their work done very quick and on finger tip. The number of vehicle goes on increasing so it is difficult task for garage shop to provide quick and efficient services to their customers. The survey regarding this web application includes information gathering from various sources. These sources include some of the garages service application, websites such as Ola app, MyMazda. Ola garage is web application provide the platform through which user is able to get services which include all types of service. Although it is provided by Ola but it is not so popular. Serviceko is also an android application basically meant for vehicle service purpose, it is not fully developed and currently not in use. The GUI is not simple hence difficult to use. IEEE papers are used for knowing the advantages and disadvantages of previously proposed system. Example In paper titled as "Automobile Service Centre Management System": -It is a android based application which provide facility like Notify user for service, Next service installment, EMI calculator but not provide service in out areas, no emergency service when net wont available and mechanics not go outside for service[2]. In paper titled as "Online Management System for Automobile services": -It is a web based system using Angular JS, Mongo DB and Node-JS which provide the feature like find nearby garage service notifications but not provide Emergency service[1]. For clearing the concepts and algorithms included in this project. Example Dijkstra's algorithm for finding shortest path algorithm to schedule the available mechanics and provide the services to customer in a very efficient way [3].

Advantages over existing system are:-

- (1) Emergency toll-free number to get service in case if user is not accessible to internet.
- (2) Service to the requested location on time and in affordable budget.
- (3) Mechanics not associated with garage can also provide services.
- (4) Estimated cost and time will provide to customer in advance.

### III. Proposed System

By keeping all the drawbacks of the existing system in the mind new proposed system have been designed. This consist of three panel User, Garage and Admin

[A]User:

1. User who wants to take service from this platform must have registered them self by providing necessary details. After registration login will be required.
2. They have to enter the vehicle registration number (Plate Number), validate the number for further processing.
3. They have to choose the types of vehicle (i.e. whether 2 wheeler or 4 wheeler), on the contrary they are able to use emergency option in case of rapid service.
4. User has to define the problem or issues in vehicle by choosing the problems. Whether the user know the problem or don't know (select accordingly).
5. Select the nearest active garage, listing of garage is based on location and the rating. Estimated amount for the selected problem will be calculated and displayed to the user, User may continue for further processing or can change the garage. User may either come to garage or get the service to his location once agreed on price; request will be made to a respective garage.

[B]Garage:

1. Notification for a service is received and depending upon the condition (i.e. user is coming for service, or want service to that' location) action will be performed.
2. Mechanic will be assigned if service required to requested location and then mechanic details are send to user.
3. Keeping track of the mechanic.

[C]Admin:

1. Notify the user and garage.
2. Send the OTP to user which help the garage owner to notify the assigned work is complete and your mechanic is free.
3. Keeping track of all feedback as well the time stamp between requested to be made and granted.
4. Feedback helps to rate the garage and evaluate the list

#### **IV. System Features**

Features such as:

1. User Registration: Garage shop, vehicle user and mechanics all will register.
2. Login: Both Garage shop, vehicle user and mechanics will have to Login.
3. Virtual Application Tour: One time tour about the Application.
4. Type of vehicle: People will allow choosing type of vehicle.
5. Vehicle validation: Validating vehicle by using vehicle number entered by user.
6. Type of service Required: Choosing from list of services.
7. Display list of nearby active garage: List of nearby active garage.
8. Choose and send request to garage: By choosing garage from list send request to get service.
9. Estimate cost and time: Cost and time required to provide the service.
10. Accept or reject response: User can accept or reject response on basis of cost and time mentioned in response.
11. Emergency toll free no. In case of user not getting access to internet or nearby garage are unable to provide service.
12. Payment gateway: Online or offline.
13. Track services: Tracking of both side activity

#### **V. Implementation**

In this section we have demonstrated the various stages such as user have to register himself/herself on this application either as garage or vehicular user or mechanics .After signing up user can login to application by providing the user name and password. Then user will provide their vehicle number which will be verified by using an API, then user have to choose the problem form given list on basis of it user will be provided with the list of nearby active garage and services offers by them along with cost .User will have freedom to choose any garage from list as per his convenience and will send request to garage to get service. Garage can either accept or reject the request. User will be provided service detail such as estimated time, cost on basis of it user also have option to reject the response of one garage and can choose other. After acceptance from both sides, service will be provided and after completion of one services admin will be notified by garage and customer will give feedback about the service.

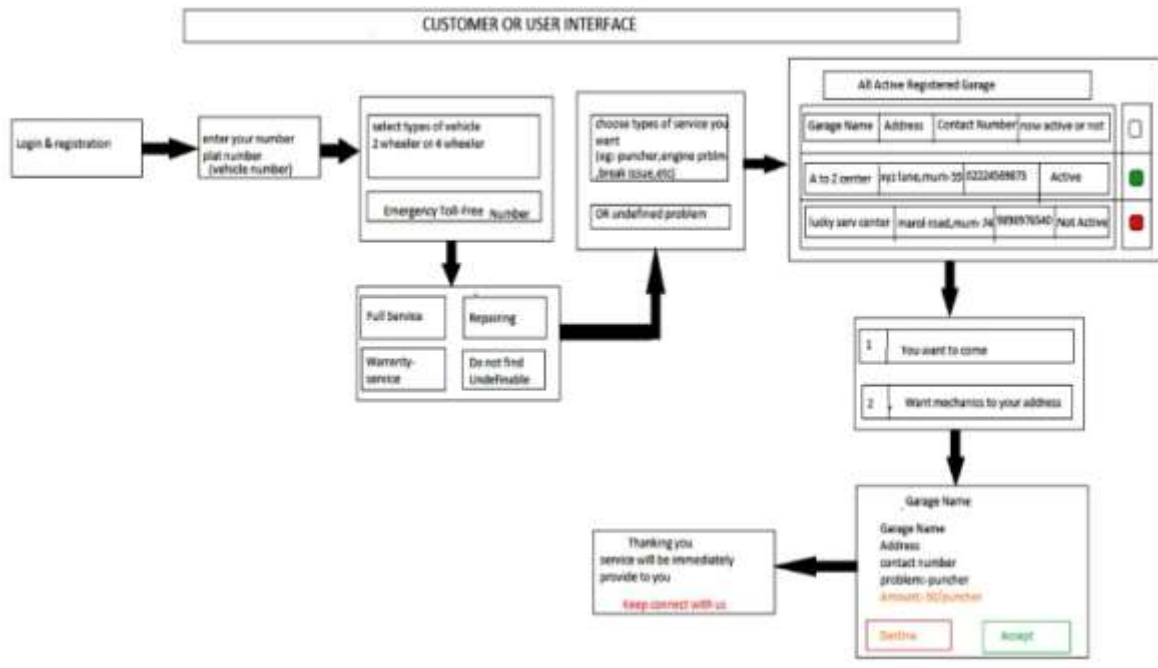


Fig no.1

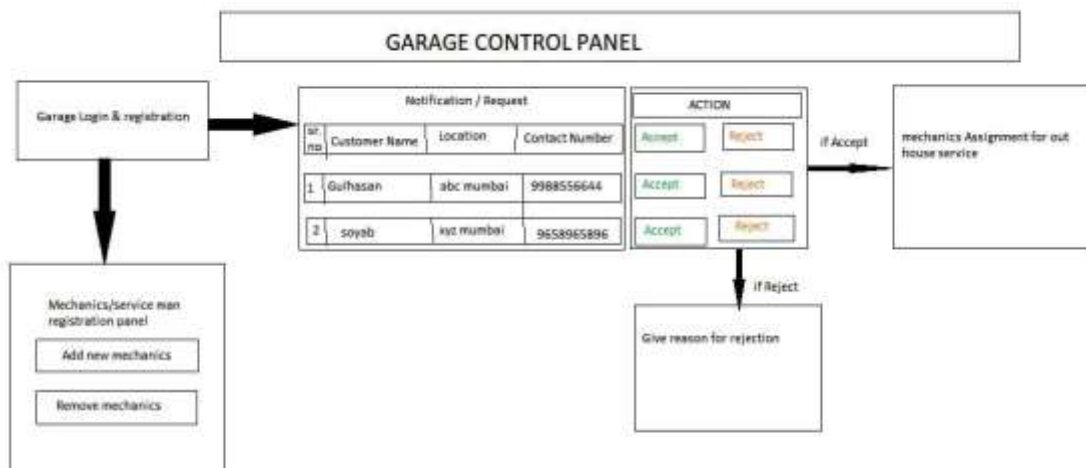


Fig no.2

## VI. Future Scope

Most of the people are having vehicle but they don't have time to spend for vehicle service. They can use this platform to service their vehicle by trusted service provider. User will be able to search the garage and request them for service. Easily select the problem and garage and take service from that. In emergency case user can use the Toll-Free number and get quick response. Also provide the service at location from where the request has been made whether it is remote area or area under coverage, this can be widely used to facilitate user in all over country since there is no solution for it. It also promotes the provider business and increase the number of user and return of investment also. Future scope in enlarging the system we can add one more module where user will be provided a rent based vehicle in case he/she cannot wait till repairing. User can connect and inform each other wirelessly if they are passing close to each other so that user can also help each others in need.

## **VII. Conclusion**

To overcome the drawbacks of the existing system of automobile servicing, this application will provide a platform which facilitate user who wish to take services at its location as well as in emergency also and will increase its business value .User friendly GUI and quick response will attract the user. It will increase the employee opportunities.

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