

# Survey on Vehicle Tracking Services

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## Abstract

If a person moves to a new place or a new city and there is some problem to vehicle then it is difficult to find a mechanic nearby. This application provides service of mechanic to the user. This application helps to search nearest mechanic available to the user's location. This application allows to trace the mechanic and provide different services to the user and it also provide video tutorial to help the user. Our application tracks the mechanic and user location with the help of google maps. Also, we have studied some papers and application related to the tracking of the vehicle using some hardware devices, we are planning to use google map and GPS tracking available in mobile to track a vehicle.

**Keywords:** Mobile application; Two-way tracking; Mechanic; Tracking system

## Introduction

Mobile Mechanic is a mobile application that provides the user to interact with the nearest mechanic when needed. Purpose of mobile mechanic is to provide services to the user with the help of local mechanic in less time. Mobile mechanic also provide service to two-wheeler and four-wheeler. Mobile mechanic allows the user to track the mechanic once the mechanic is booked [1].

Mobile Mechanic also provides video tutorials on how to solve small problems that may happen to vehicle. Mechanic interact with user using an app and it will trace the user location and user will be notify if the mechanic is busy. User get the notification once the Mechanic is booked and with unique repair id and it can pay the money by cash or Net banking. Mobile Mechanic is a Simple application which can be use by any local mechanic which does not use any app [2].

Mechanic as well as User both need to register first and then the user can trace the mechanic and the problem can be solved. If mechanic is busy another Mechanic will be available to user.

## Goals or objectives

- To provide employment opportunity to local mechanics.
- To Track mechanic location [1,2].
- To provide troubleshooting tips for user.
- To create interface between user and mechanic.

## Literature Survey

### First choice

It is the application which is providing the service of mechanic to the customer. The problem of the application is that when a customer wants to register there is a registration problem, also the customer who is demanding for the mechanic must have his/her car registration first as there is field in the registration form where customer have to fill car registration number [3].

### Meri car

It is application provides the nearest mechanic location and also provide location of the nearest workshop location. The problem with the application is it crashes after certain time, also it is not that user friendly. Manual searching option that is available in the application do not work properly [4].

## 24/7 mechanic

It is the application allows you to search the mechanic area wise. This is the only application that provides service to two-wheeler. The problem with the application is that the registration timeout before filling the complete form [5].

## Wrench

It is a mobile mechanic service that comes to your home or office to work on your car. This app provides scheduled maintenance for vehicle owners. Wrench offers a membership for hassle free car maintenance - we come to you once a quarter to change your oil or rotate your tires, and perform a thorough safety inspection and fluid top offs. The limitation of this app is that there is no tracking mechanism of your job [6].

## Child safety and tracking management system

It ensures maximum security and ensures live tracking for their kid. This paper proposed a model for child safety through smart phones that provides the option to track the location of their children as well as in case of emergency children is able to send a quick message and its current location via Short Message services. Parent's side used SMS and GPS services for communicating with child's mobility and Google maps parent used to view child's location on map and as well as their distance from automatically calculated and displayed mobile screen. At the child side another android phone supports GPS and SMS facilities. Table 1 provides information about different app and website on which we have done survey from 2015. This system depends upon the GPS functionality therefore; its working completely depends upon the cellular network, it will not work perfectly if the cellular network is poorly or not available. In that case, the application fails to provide the exact location. But the application stores the last location which stored in the database server. This system is unable to sense human behaviour of childlike-crying etc. When the mobile is switch off, then we consider

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S no.	Mobile Application	Reviews/Findings	
		Advantages	Disadvantages
1	First choice	Chat option available, Transparency, pickup and drop facility	Registration problem, registration compulsory
2	Meri Car	GPS search to nearest workshop and car mechanic, car washing and cleaning centres	Not user friendly, Manual search doesn't work, Crashes
3	24/7 Mechanic	Helps you find service centre for 2 wheeler and 4 wheeler area wise.	Registration page time out before registration complete
4	Maruti Suzuki care	Good user interface, updating about service due and other things about users car	Login issues, registration problem
5	Auto repair and car maintain	Cost estimator, Mechanic shop finder	Server down constantly, unable to put  Vehicle information properly

**Table 1:** Different applications and website on which we have done survey from 2015.

this as one of the drawbacks of the system [1].

### Android based application for efficient carpooling with user tracking facility

It is an environment-friendly method where sharing of rides can reduce the number of vehicles on the road which in turn reduces the problems like environmental pollution, traffic congestion and lack of space for parking area. By having more people in a single vehicle, reduces the various costs of the journey. There are some applications like BlaBlaCar, Pool My Car etc. provides sharing of journey, user rating, feedback, payment, etc. But these applications are not providing features like user location detection, location sharing, traffic anomaly detection etc. [7].

### A real time GSM/GPS based tracking system based on GSM mobile phone

A GPS based tracking system is proposed which keeps track of the location of a vehicle and its speed based on a mobile phone text messaging system. The system is able to provide real-time text alerts for speed and location. Particularly, the present location can be locked and the system will alert the owner if the vehicle is moved from the present locked location. In addition, the speed can be locked and an alert texted if this speed is exceeded. It also includes a hardware assembly that acts as a connecting device. The proposed system comprises of a EM-406A model GPS module. This was chosen for its small size as it has an inbuilt patch antenna for the GPS receiver. The tracking sensitivity is also very good of this module. The data comes out at TTL level which is useful as it can be directly interfaced with a microcontroller without any voltage level converter. The microcontroller used is PIC16F877A for its reliable and peripheral rich features along with enough number of ports which can be used for future use as well. The GSM modem used is a SIEMENS TC35i model for its reliability and easy availability in the UK along with the easily available instruction set. The tracking system has the following features: Provision of adding one admin number to the system with the option of one more phone number. Lock/Unlock the current GPS coordinates of the vehicle by second a SMS to the system. Lock/Unlock the maximum speed the vehicle should go up to and get

an alert if the vehicle goes beyond that speed. Get current location of the vehicle at any time. This system provides a localise approach to track and keep an eye on their vehicle, which is able to track the localization and speed of the subject of interest that is equipped with GPS and GSM devices. The owner can get the current location of the vehicle at any time. Lock/unlock the current GPS coordinates of the vehicle to detect unauthorized movement and lock/unlock the maximum speed of the vehicle to get an alert if the vehicle goes beyond that speed [8].

### Real time vehicle tracking system based on arm7 GPS and GSM technology

It presents GPS based tracking system has many application in today's world. For example Vehicle tracking, children tracking, any equipment tracking, fleet management etc. An efficient vehicle tracking system is implemented for monitoring the movement of any equipped vehicle from any location at any time. With the help of Global Positioning System (GPS), Global System for Mobile communication (GSM) modem and microcontroller are embedded with the aim of enabling users to locate their vehicles with ease and in a convenient manner (Figure 1). This system provides the facility to the user to track their vehicle remotely through the mobile network. This paper present the development of vehicle tracking systems hardware prototype and GUI application for displaying the actual position of vehicle [9].

### Design and development of android based bus tracking system

Tracking of organization buses while moving on highway is crucial task. A person patiently waiting for the bus may want to enquire about the position of current location of the bus. Phone discussion is not possible due to traffic disturbances. Further it involves variant costs due to the calls and message service over phone and the person in the bus may get annoyed if he gets multiple calls from people boarding that bus. Mobile based bus tracking system provides a solution to this problem which helps anyone to retrieve the location of the bus without calling or disturbing the person travelling in the bus. The people boarding the bus and the coordinators of the bus should own an android driven mobile phone with internet connectivity. The Global Positioning System (GPS) supports in area following with backing of Global Standard for Mobile (GSM) in cellular telephone to report transport area information again to the servers [2].

### Proposed Work

The application we are going to develop will provide ease to the customer to find the local mechanic around their location. Sometimes it is difficult to find mechanic when moving to the new area or when we go somewhere in the new place and there is some problem with the vehicle and we have to take lot of trouble to repair it all by ourselves or wait until we get help the passers. By this application customers can find the nearest local mechanic and can also even the mechanic to if the mechanic is coming for the help. The Application will have 3 Modules:

- User Module: End user can register and login to order a mechanic or troubleshoot small problems, user can also view their previous orders.
- Mechanic Module: Mechanic can register and login in this module. After registration and logic, mechanic can accept the order request by user and start tracking the user and complete that order.
- Admin Module: Admin Module is present in our app to verify the details of mechanic and monitor unethical users.

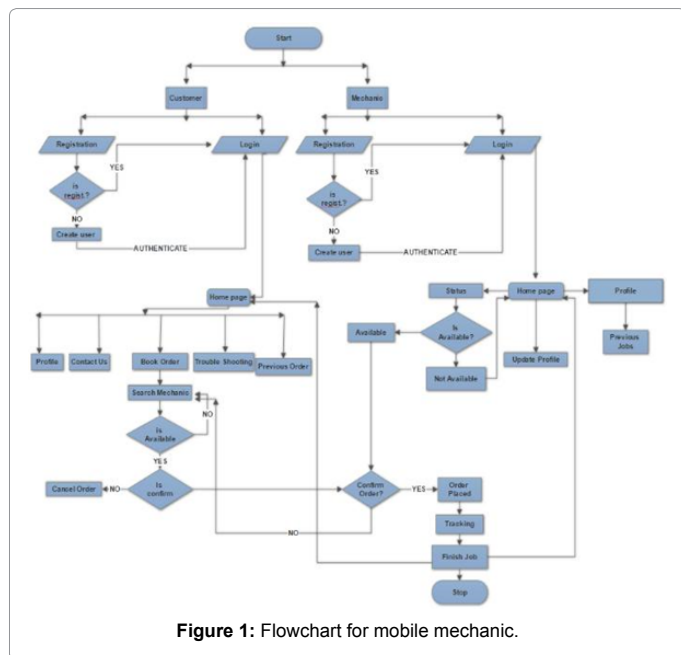


Figure 1: Flowchart for mobile mechanic.

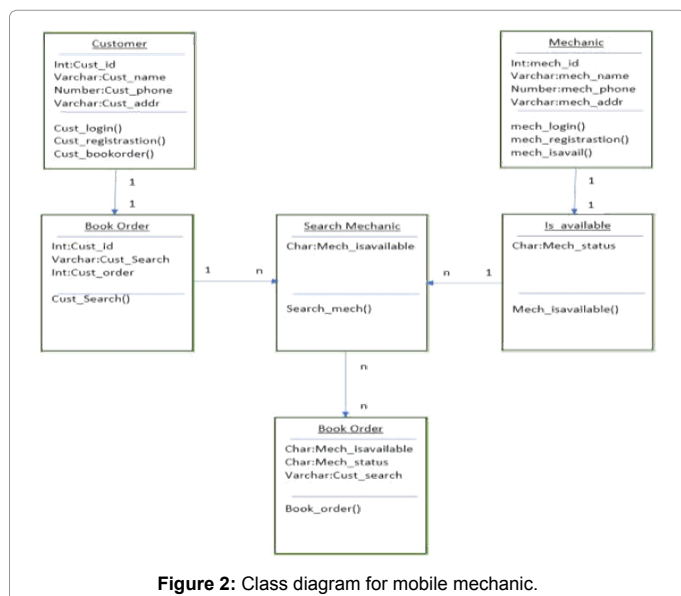


Figure 2: Class diagram for mobile mechanic.

The above Figure 2 shows the flow of our application. First the user will open the application and will get an option of User and Mechanic. If the customer wants to use the choose user and if mechanic wants to use the choose mechanic.

The figure shows the way our application will work and the attributes present in the application are also showed, also it contains different parameters of user and the mechanic.

The class diagram of the system consists of various classes such as customer, mechanic, bookorder, is Available, bookorder depending on the requirement of the different classes.

## Conclusion

The survey helps in improving the application, as different survey paper and application surveyed contains various disadvantages and advantages. The survey was conducted for providing the tracking

of mechanic. Various survey paper and the different application we have studied mainly focus on the tracking. We have implemented the advantages and tried to ignore the disadvantages from our application. The goal of our project is to order a local mechanic for basic vehicle breakdowns and it is available for both two-wheeler and four wheelers. We implemented two ways tracking so that user and mechanic can track each other after placing order. The proposed system includes local mechanic and user can order mechanic irrespective of vehicle manufacturer. Also, this will provide employment to local mechanic.

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