

# Mobile Tracking System using Web Application and Android Apps

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**Abstract-** Parents are very much concerned about their children now a days and are compelled to provide an Android phone to their children. They want to monitor children activities and movements, where they are going and what they are doing. But this process is difficult. To solve this problem a *Mobile Tracking System* has been designed, using this system parents can track children's location. An Android application (Mobile Tracking System) needs to install in mobile phone of the children and parents have to register this application with a password. After completing the registration, parents can monitor mobile phone's location of their children through a web site ([www.mobiletrackerbd.com](http://www.mobiletrackerbd.com)) from anywhere. Parents can track children's mobile phone's location by two methods, one is manually and another is automatically. In manual system children have to click a button of the apps for sending mobile phone's location. In automatic system parents have to set a time period into the apps and then apps automatically send mobile phone's location periodically as setting time. Parents can track last and previous location of their children's mobile phone.

**Keywords:** GPS, GSM, Google MAP, API, Smartphone, MTS.

## I. INTRODUCTION

Tracking system is not a new concept. GPS is a popular technology for tracking system. Different types of GPS devices are used to track different types of object's location. GPS devices receive signal from satellite. GSM is another technology that is also used for tracking system. GSM Devices receive signal from connected base station. Mobile phone technology has been developed over a very short period of time. Mobile phone includes GPS sensor, so it can receive signal from base station and Satellite.

Now GPS tracker is used for track location but it needs to buy extra GPS devices and have to pay periodically for this services. Device location does not display in GSM technology, it display base station location. If someone wants to find location of the device in GSM technology, it needs to pay to the service provider.

Here a mobile tracking system has developed without purchasing and using extra devices and no need to pay for this service. User can download this tracking apps free of cost from [www.mobiletrackerbd.com](http://www.mobiletrackerbd.com) and register as a client

without any cost. Client can track immediate location of registered mobile and can also see previous position as the date. This mobile tracking system will help parents to monitor their children's mobile phone location.

## II. RELATED WORKS

Amit Kushwaha & Vineet Kushwaha (2011). 'Location Based Services using Android Mobile Operating System' [1]. International Journal of Advances in Engineering & Technology, ISSN: 2231-1963. In this article Amit & Vineet designed an Android based tracking system, which can help user to find nearest important locations like hospital, market, ATM booth, School etc.

Manav Singhal & Anupam Shukla (2012). 'Implementation of Location based Services in Android using GPS and Web Services' [2]. International Journal of Computer Science Issues, ISSN: 1694-0814. In this article Singhal & Shukla designed an Android application which can find nearest address and calculate distance between user location to another address.

Ch. Radhika Rani, A. Praveen Kumar, D. Adarsh, K. Krishna Mohan, K.V.Kiran (2012). 'LOCATION BASED SERVICES IN ANDROID' [3]. International Journal of Advances in Engineering & Technology, ISSN: 2231-1963. In this article Radhika, Praveen, Adarsh, Krishna and Kiran designed an Android apps which input two address from user, one is source address and another is destination address and then shows the route between these two locations.

Radhika Kinage, Jyotshna Kumari, Purva Zalke, Meenal Kulkarni (2013). 'Mobile Tracking Application' [4]. International Journal of Innovative Research in Science, Engineering and Technology, ISSN: 2319-8753. In this article Radhika, Jyotshna, Purva and Meenal designed an Android application which allows specifying different safety zones of a user. The application runs on a single mobile and the alert messages can be sent to any mobile.

Prof. Seema Vanjire, Unmesh Kanchan, Ganesh Shitole, Pradnyesh Patil (2014). 'Location Based Services on Smart Phone through the Android Application' [5]. International Journal of Advanced Research in Computer and

Communication Engineering, ISSN: 2278-1021. In this article prof. Vanjire, Unmesh, Ganesh and Patil designed an Android apps with 3 modules, 1) Profile changer based on place or area, 2) Person Location tracking by Family Member (SMS), 3) Nearest Friends notification reminder. Mahesh Kadibagil and Dr. H S Guruprasad (2014). 'Position Detection and Tracking System' [6]. International Journal of Computer Science and Information Technology & Security, Vol. 4, No. 3. In this article Mahesh and Dr. Guruprasad designed an android application which can be used to locate the position of the friends and family members. This application has an alert mechanism to send a popup SMS to the user when his friends or family members are nearby. Text message can be shared with online user.

### III. PROPOSED SYSTEM

The paper describes mobile phone location tracking system which has the following objectives:

- ❑ Develop an Android application which is used to receive GPS location and a web application that can be used to track mobile phone's location.
- ❑ This application can track the last location of children's mobile phone.
- ❑ Previous locations can be tracked.
- ❑ Parents can monitor how frequently their children go a particular place.

### IV. TECHNOLOGY BACKGROUND

**GPS:** The Global Positioning System (GPS) is a utility that provides users with positioning, navigation, and timing services. This system consists of three segments: the space segment, the control segment, and the user segment. The space segment consists of a nominal constellation of 24 operating satellites that transmit one-way signals that give the current GPS satellite position and time. The Control Segment tracks the GPS satellites, uploads updated navigational data, and maintains health and status of the satellite constellation. The user segment consists of the GPS receiver equipment and uses the transmitted information to calculate the user's three dimensional position and time [6].

**Android:** Android is a mobile operating system which offers a unified approach to application development. Developers need to develop applications using Android and these applications can run on numerous different devices, as long as the devices are powered using Android [6].

Here Google Maps: PHP; My SQL: HTML, JavaScript are used.

### V. SYSTEM ARCHITECTURE

In proposed system architecture there are two diagrams, one is concept diagram and another is block diagram.

#### A. Concept Diagram

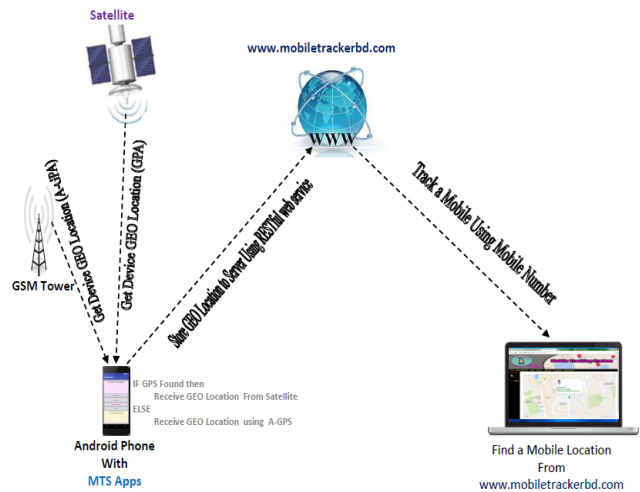


Fig 1: Conceptual Diagram of mobile tracking system

#### B. Block Diagram

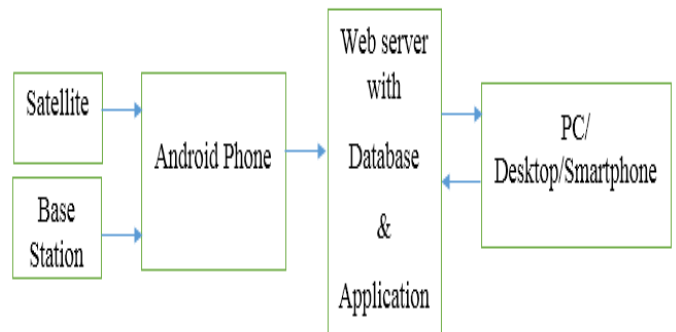


Fig 2: Block Diagram of Mobile Tracking System

Android phone is tries to receive GPS location signal from satellite if fails to receive signal from a satellite then it receive location signal from the base station of mobile phone. After receiving the signal, android phone store location in the web server database. Registered user can monitor the mobile phone's location from anywhere using the web application.

### VI. IMPLEMENTATION

This research has two modules, one is mobile apps another is a web application. Mobile apps receive GPS location and store into web server database, web application is use to create user profile and track mobile phone's location.

A. Flow Chart

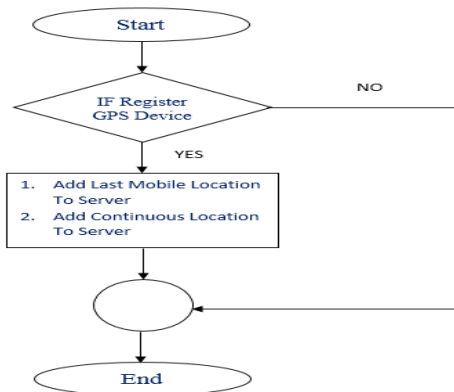


Fig 3: Flowchart for Android Apps System

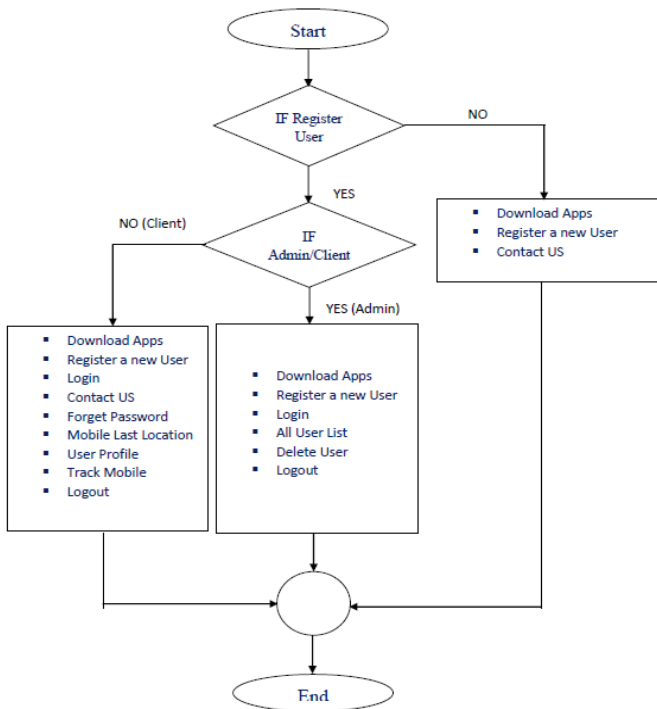


Fig 4: Flowchart of Mobile Tracking System Web Application

B. User Interface Design

The software becomes more popular if its user interface is: Attractive, Simple to use, Responsive in short time, Clear to understand and Consistent on all interfacing screens



Fig 5: User interface for Mobile Tracking System

When a registered user logged in, this page will appear and user can track last location, previous location.



Fig 6: User interface for Mobile Tracking System (Tracked Mobile Location)

When the user select last location menu then this page will show with user picture and time.

C. Screen Shoot



Fig 7: Mobile tracking system first page without registration

This is the front page of mobile application before registration. The user should register this application by clicking the Register button.

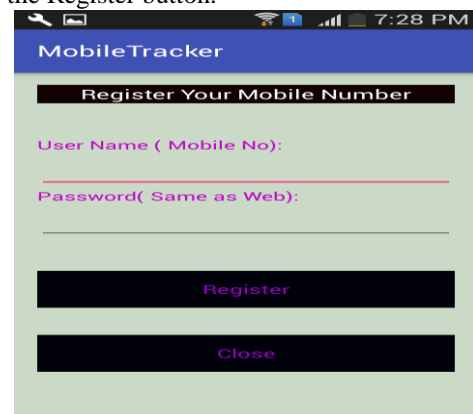


Fig 8: Registration page of mobile tracking system

This is the registration page of the mobile application. The user has to type mobile number into the user name text box and type password into the password text box. After entering a user name and password, click register button, then this application will be registered.

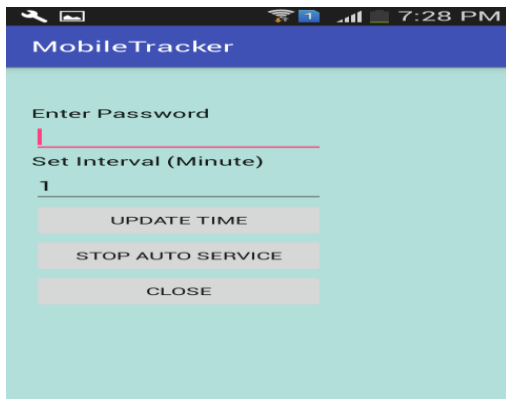


Fig 9: Auto services start and stop page of mobile tracking system

This is the auto service start and stop page of mobile application. To enable this service user has to type application password and type interval time in minutes and click update time button. Then the auto service will start and application will send mobile location automatically as setting time interval. User can stop the auto service just type password into the password box and click the stop auto service button.



Fig 10: Application main page after registration

This is the main page of mobile application after registration. By two ways users can send mobile phone's location, one is just clicking send position button and another is auto service by set interval time button.

### VII. EXPERIMENT & RESULT

A software wrong output can cause users to lose interest in using the software. Result of the application is shown below:



Fig 11: User and Admin Login Page

Admin or a registered user can login to this web application by user ID and Password. After clicking **login** menu login page will display. Admin or user enters their ID and Password and click login button. After a successful login admin will get administrative facilities and registered user will get user facilities. This page a user or admin can login for their details activity.



Fig 12: User List Page (Admin Panel)

After successful login to admin the admin click All User List menu, then all registered user list of the web application will display in a new page. This is user list page, only admin can see all registered users of the web application using this page.

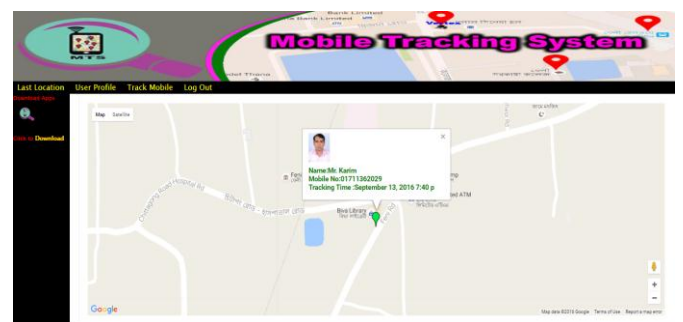


Fig 13: Last Location of a User (User Panel)

When registered user click Last Location menu then a google map will display with a marker, the marker indicates the last location of the registered mobile. When user click over the marker, the user profile picture and tracking time will be displayed. This is last location tracking page, a registered user can track last mobile location by this page.

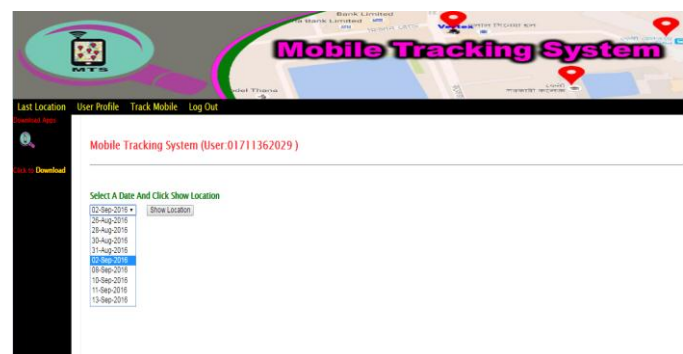


Fig 14: Track Mobile Page

Registered user can track previous location as the date. When a registered user click Track Mobile menu a page will display with drop down list that contain previous dates. When user selects a date and click Show Location button, then a google map will display with multiple marker with number. Multiple markers mean multiple locations. This is mobile tracking page, a registered user can track previous date tracking record by this page.



Fig 15: Track Mobile Locations

When user tracks previous location this page will display. This is tracking page, multiple marker display with a serial number for a particular date in this page. User profile information will display left side of the page.

#### VIII. ADVANTAGES

There are many advantages of Mobile Tracking System.

- User can enjoy this service 24 hours.
- It is user friendly.
- It is secured.
- Unlimited number of users.
- Save multiple dates location record.
- It is free of cost.
- User can send location information automatically after some time interval set by the user.
- User can send location information manually.
- This web application works properly almost all browsers including android phone.

#### IX. LIMITATIONS

Some *limitations* of our research are given below:

- GPS connection problem inside the building area.
- If GPS connection is fail it may show base station's location that can make confusion.
- Android device must have internet connection for sending location data.
- If too many user access in this site at the same time it may be slower.
- Same mobile number may be register in different android devices, it will show fake mobile location.

#### X. CONCLUSION

This Mobile Tracking System has been designed and developed and works properly. It is very efficient, user can easily use this application. Any people can track any mobile location any time using this application. The application is free of cost and does not require any additional device. We have tested in different Android phones and different browsers it works smoothly. We think users will be benefited by using this application.

#### REFERENCES

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