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**DESIGN AND IMPLEMENTATION OF ANDROID PHONE BASED LOCATION  
AND FILE SHARING SYSTEM**

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**ABSTRACT**

The position detection and tracking system enhances the accuracy of locating friends and family member's positions by using GPS and standard web technology. This system includes a mobile client, a repository, a web client and a map service. The mobile client is used to find location and send a Popup SMS to user when his/her friends or family members come around the user's area of direction. This location information can be sent to the server and the same information can be managed and viewed using the web client by other users. Wide usage of mobile internet technology and Smart Phones, more attentions is on network access and interactive application through mobile phones. Android is becoming popular as it is available for free. These days social networking becomes an important media for the people, friends, family and other relatives to communicate with each other. Communicating or knowing their friends and family location is really new and rapidly the technologies are arising in this field. Finding the location by various devices is a simple and very small service for people of all ages in all countries. Devices like GPS is needed since it is as simple carrying device as moving from one place to another by using one's device to find the location and direction only.

**KEYWORDS**-Android mobile device, GPS, Location Sharing, File Sharing, Webserver.

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**INTRODUCTION**

Aristotle said: "Man is by nature a social animal", by this he meant to emphasis the fact that human being is destined to live in peers within organized community. As there is no society without communication, so there is no person without social interaction. Today's age is the world of technologies, where lots of inventions and discoveries have made everyone to rely on the use of latest technology. Today one can share information with others using the communication technology. Now a days, more and more people start using the smart phone, laptop. With the growth of mobile users, wireless data access is also growing. Due to this mobile devices are the most convenient and efficient tools for people to obtain data, and smart phones will be one of the main forces of the tools in the future. Software applications based on smart phone can give people easier and very efficient way of life, so the software design is becoming a hot spot. Android becomes the most favorite smartphone by the people due to its Linux based open source, easy to use and biggest global market share.

The paper describes Android Phone Based Location and File Sharing systems. The main highlight of our work is listed below:

- 1) Connect with the external database MySQL to maintain a centralized database.
- 2) Interact with the webserver and sharing location and message.
- 3) To find the current location is obtained from GPS enabled android device and is sent to webserver and webserver will display location position and send to the android devices.

The rest of the paper is structured as follows. Section II introduces the proposed system. After discussing the System features in Section III, we describe our system module design in Section IV, and the implementation of the system in Section V. Finally draws the conclusion and future works.

**PROPOSED SYSTEM**

The system is Android Phone Based Location and File Sharing System, which adopts Client / Server scheme. Client is implemented on smart phone which supports for the Android operating system whereas the server side is implemented. System uses a lightweight design to minimize the server load. Server is responsible for the storage and management of registered user information, and the communication data forwarding. Client is

responsible for the system interface and application and access. Smart phone user login to the phone client connect to the server in Internet. System uses GPS technology to check the location. This system includes a mobile client, a repository, a web client. The mobile client is used to find location and send a Popup SMS to user when his/her friends or family members come around the user's area of direction. This location information can be sent to the server and the same information can be managed and viewed using the web client by other users

## SYSTEM FEATURES

The System architecture is shown in Figure1 and consists of the following five modules



Figure:1. System Features

### 1) Mobile client:

The mobile client consists of a mobile phone and a GPS receiver which can be used to find the location of family and friends. The mobile client can send a popup SMS about the location to the user when someone is nearby.

### 2) Repository:

The repository consists of all the information about the users, location maps, and the location-related results.

### 3) Web client:

The information in the repository can be managed and viewed using the web client. The user receives the location information from the web client on their mobiles.

### 4) Map service:

The map service is an agent based which provides both the mobile and the web client with map data. The map service uses GPS to track the position of friends or family members. The location information is updated to web client every time by the mobile phone.

### 5) Message Alert system

The message alert system deals with detecting position of our friend and family member and update on server. It sends location update to the user when friends are within specific range from him/her.

## SYSTEM ARCHITECTURE

This section explains functions of each and every module used in the system design. The system contains the below mentioned modules:

### 1) Login Module

Login module is used to provide registration of new user and login to the system. Register interface takes user information and after the registration is successful, user can login to the system.

### 2) GPS Module:

GPS module deals with position based services. Using this module, user can find his/her own position, friend position and family member position.

### 3) Data sharing Module

Data sharing module deals with sharing the data such as Image, Text, Audio and Video. The user desired files can be uploaded using `imageUpload()`, `uploadVideo()`, `uploadDocument()`. The desired files can be downloaded using `downloadDoc()`, `downloadVideo()`. The image files can be saved using `saveImage()`.

### 4) Notification Module

Notification module sends a notification to the user when his/her friends or family members come around the user's area of direction. A notification is given to the user in the form of a popup message having the location information along with light or sound.

### 5) Chatting Module

Chatting module is mainly to implement word communication among friends. For chatting, user can search for the friends available online.

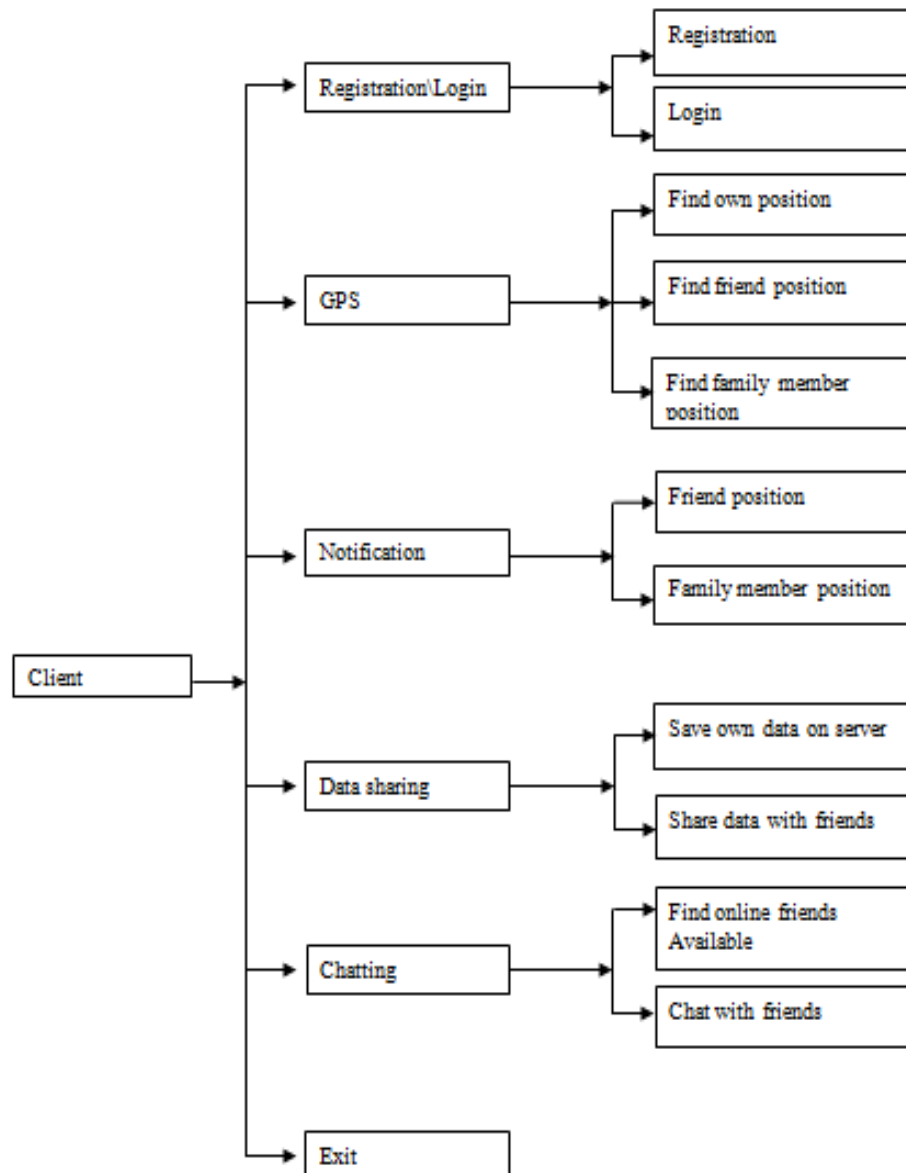


Figure2. Functional Module of System

### EXPERIMENTAL RESULTS

The system uses the Google Map API to achieve the GPS location and navigation functions. Getlocation() function is used to achieve self-location and locate friend's position. When you want to locate friend's position, you must achieve agreement of your friend firstly. If the friend agrees, the friend's location information will be sent to the server and the server will be forwarded the information to your phone.

When a user sends a message, the message will be sent to the server along with his account. Server retrieves the information which the account is belong to, then sends the message to all account online in the queue. We can set time interval to get user location in minutes, so that system gets users location and compares location with all the other friends' location and check whether any user is within the radius of 1km.

The Operating System for smart phone is Android 2.2. Programming languages used are Java and PHP. MySQL is used as the database. We have used Eclipse as a Java Development Tool in Windows, Macromedia Dreamweaver for PHP programming. We first used an android emulator to run client application and local server as webserver. To obtain the longitude and latitude, we use getLongitude() and getLatitude() functions

respectively along with the features of LocationManager. After the obtaining location values, these values were send to database. We use HttpPost() to connect to the webserver and android emulator to set the value to send to webserver, and HttpClient() is used to send the information, ResponseHandler() to handle the response from the server. In server side, we use file\_get\_contents() to receive value from client. for receiving the information sent from server to client, we use HttpEntity() to handle the response from the server, HttpResponse() to execute HttpPost(). After the successful testing in the emulator and local server, we used real android smart phone with minimum Android Version 2.2 and online webserver. Fig. 3 shows some snapshots of the successful test.

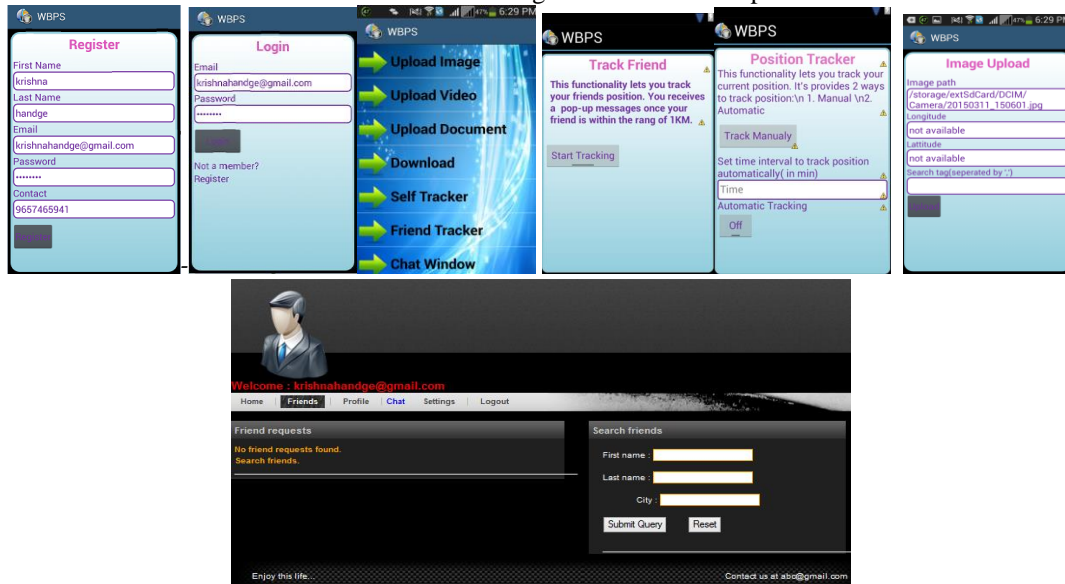


Figure3. a)Registration interface b) Login Interface c) Main Interface in android device c) Interface to track friend position d) Interface to select tracking system e) Interface to upload file h) Interface to search friends from web.

## CONCLUSION AND FUTURE WORKS

In this paper we have used Java programming language to develop the client side, and used PHP programming language to develop server side with MySQL as external database to store information. With the help of GPS enabled smart phone we were able to send the longitude and latitude to the webserver, analyzing the location data from the database and displaying the location. And finally we were able to send the message through webserver and android device and vice-versa.

Android Phone Based Location and File Sharing System is still in the development stage. Some enhanced functions are still needed to be added continuously. In future work in this area, it plans to explore the following extensions.

- 1) Improvement in user interfaces in android device as well as in webserver.
- 2) Traffic information inquiry, weather information and historic records collection
- 3) Improving the security of data by using other different cryptography method.
- 4) Maintaining different group of users to share information within groups only.

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