



Location based Interconnection of People through Mobile Application

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Abstract— Social Networking is one of the major trends nowadays. Being a social animal, human beings want to be connected with people. They want to communicate with a person whom they know and they want to be connected for different purposes like business, family matters etc. Taking into consideration various features that are available in android, the purpose of this application is that it provides the user the distance of the location of his friends who have shared their location with him. If the location sharing is enabled then the distance between them will be displayed and it will be updated. The user can also configure the particular location so that once his friend reaches that particular location the user will be notified with the message. User can also locate his friend's location in Google map.

Keywords— Location sharing, Messaging, GPS, Wi-Fi, Location Reminder

I. INTRODUCTION

Human lives in a society so there is a tendency that he wants to communicate with each other. As the technology is advancing the way people communicate is becoming simpler. The development of internet and various mobile devices made this communication easier. Nowadays people can communicate with the others around the globe just by sitting in one place. Android is one platform using which many applications have been developed which made the socialization very easier [1]. Location based applications are quite common in the modern era and are applied in variety of applications such as localization and tracking [4][5][6]. Location based Services are emerging as most significant applications with the development of mobile and wireless technologies [2]. Location-based services provide the mobile clients various services with respect to their current

location. They provide a new area for developers, network operators, and service providers to develop various value-added services such as helping the user to find a nearby shopping mall. [3]

The location based information can be implemented in the android with the help of Location Manager, Location Provider, Geocoding and Google Map. [2]

This application is an android application that helps the user to see the distance of his friends who are in his contacts. It also helps him to configure the location so that in case if the user in his contact reaches that particular location then he will be notified with the message. This helps him in saving time so that he can go to that place once his friends reach that place. Privacy is preserved by allowing the users to cancel the location sharing option, if they have already shared the location with their contacts. The users of this application can chat with each other by sending messages. The emergency alert option button is also provided, when the user feels that he is in danger and if he cannot make a call then he can press this alert button which will send the message to the backup mobile numbers which the user has entered while registering the application. The message sent will be having the details of the location of the sender who has sent a message along with the alert message stating that person who sent a message is in trouble.

II. RELATED WORK

In past many years, we have observed that many social networking websites have been developed which helps the people to be in touch with each other. The development of smart phones which made the life easier by using technologies like augmented reality through which location details can be found. Many tracking applications have been developed using various technologies. Meetyou: Meetyou is an android application which helps the user to create various groups of friends; families etc and he can see the distance of them if the location sharing is enabled [7].

Life360: This application has been designed to keep family in touch. it also acts as a tracking device. The location of the users can be shared and using the GPS technology, they can also view their family member's location. The user has the option to notify his family members or make a panic call in case if he feels he is in danger [8].

Tehula: This is an application designed for iPhone which lets the users to find their friend's location through text messages [9].

Google Latitude: Feature provided by Google which will allow the users to view their location and then if they wish then they can share the information with their friends [10].

Gypsii: Allows the users with a choice of creating and saving geopoints on the Google maps and they can describe it with their photos and messages [11].

Locimobile: It's an android application which helps the users to search other people and it, provides access to social networks and it provides an privilege for writing the messages to one or many friends as well as to upload the photos [12].

Match2Blue: This application helps the users to connect with new people to whom they can communicate. It orders the people by displaying distance from the user, thus by sharing the pictures and posts a new friendship can be formed [13].

Glympse: This is an application which helps the users to share the road for a particular amount of time [14].

These are various applications which meet few of the features, but it does not focus on configuring the location which will notify the user in the form of message once the intended user for whom the location has been configured reaches that location.

III.SYSTEM ARCHITECTURE

There are three layers in architectural design namely: presentation layer, business layer and access layer.

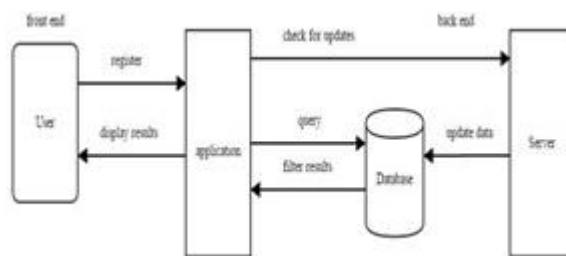


Fig 1 Architectural Diagram

Presentation layer:

The front end of the system is in the presentation layer. The presentation layer interacts with the user, transforming the user activity into request and passes that to business layer. On receiving the response from access layer, it displays the result in appropriate form to the user.

Business layer:

This layer contains the logic which will be used for computation in the system. The data from the presentation layer is used in computation and the results are stored in the database present in the access layer. This layer doesn't deal with data storage and display mechanism.

Access layer:

This layer includes the database which is used to store and retrieve the information to and from the database.

IV.IMPLEMENTATION

The application is implemented in android studio. Here the user has to register with the server. Then all the details of the users who are registered with the server and who are in the contact list of the user will be displayed now if the user sends the location sharing request to the person who is in contact list and if he accepts the location sharing then the distance between the two people will be displayed unless the other user cancels the location sharing.

The users can also set the location reminder for his contact so that once that person reaches that location the user will get the notification.

Hardware Requirements

- 20GB Hard disk or more (for the server)
- 1GB RAM or more (for the server)
- Android phone

Software Requirements

- Android SDK
- Android Development Tools (ADT)
- Java Development Kit (JDK)
- Eclipse
- SQLyog

V. RESULTS

The application is installed in android mobile, the display screen will be visible as shown in Fig1. Once the application is installed all the contacts of registered users will be displayed. If the user want to see the distance of his friend then he can send a location sharing request to his friend, now if his friend accepts the location sharing request then the distance between them will be displayed as shown in the fig 3.. If GPS is on we get accurate location. If GPS is off still we will get the distances between users through Wi-Fi or through mobile networks.



Fig2: Display Screen

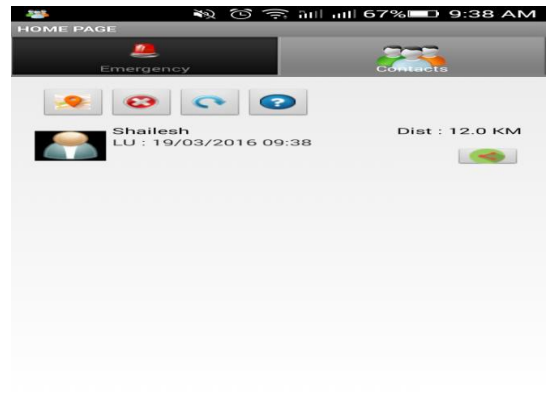


Fig3: Distance between User and his friend

We ran this application for 100 users and we found that as the number of users goes on increasing the response time of server gradually decreases.

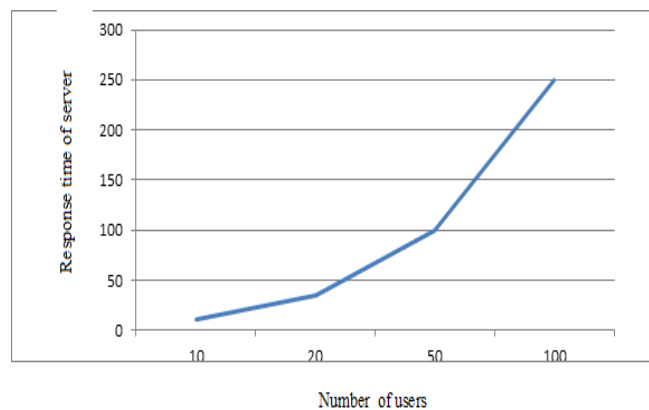


Fig4: Performance Evaluation Graph

VI. CONCLUSION

This application allows the users to share location-based information with his/her contacts. The user can also set reminders so that he will be notified when his/her contacts reaches the desired location. The users of this application have the privilege to see the distance of all his contacts with whom the location has been shared. The application allows the users to communicate with each other by sending messages to each other. Thus we have developed an application which enables user to communicate and share location with people thereby allowing the users to check whether their friends are in safe or danger. The parents can check their children's location to see if they reached a particular place in case if they go out alone.

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