International Journal of Advanced Technology in Engineering and Science
Vol. No.4, Special Issue No. 01, March 2016
www.ijates.com
ijates
ISSN 2348 - 7550

LOCATION BASED REMINDER

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ABSTRACT

The use of smart phones has increased day by day. The idea of using smart phones in today's world is to get benefit of more services. The motivation to design a new application based on location is to get correct information at appropriate time and at right place. Such needs can be fulfilled by using GPS and internet facilities. The application is designed for mobile operating system "Android". It uses GPS (Global positioning system), Internet and java technology. The global positioning system (GPS) is a space based navigation system that provides location and time information anywhere on earth where there is an unobstructed line of sight to four or more GPS coordinates. Location based service (LBS) are a class of services that use location data to control features of mobile device. Most of current LBS services do not require users to input location manually, like giving zip code or street name. Latitude and longitude coordinates plays an important role in finding the position or location of any device.

Keywords: Android, Google maps, GPRS(General Packet Radio Service), GPS (Global Positioning System), LBS (Location Based Service).

I.INTRODUCTION

Every day we use special messages in order to help us remember future tasks. These messages, known as reminders, take many forms, such as post-it notes, emailing ourselves, to-do lists, and electronic calendar alerts. For example, a student may use post-it notes to remind himself to carry a particular book at some specific day. When we placed reminder in Mobile phone then they are most useful. An increasing number of mobile phones and Personal Digital Assistants (PDA) allow people to access the Internet where ever they are and whenever they want. From the Internet they can obtain on one hand information on events (cinema, concerts, and parties) and on the other hand information on places (city maps, restaurants, museums, hospitals.) There are in-built applications in mobile phones for reminding the tasks but those are time based. Location based applications available in Google play store such as 'GeoBells' provide only one facility of reminding tasks based on location. They do not provide any facility to find nearest friend or to automatically change your profile based on location.

Reminders can be more helpful when rich contextual information is used to present them at appropriate times in appropriate places. Hence the idea of a location based reminder, which ensures not only that the user is reminded of his task at appropriate time but also at appropriate location. A grocery list reminder is more helpful

while passing by the supermarket and route home from work, rather than while at work or after getting home which could easily happen in the case of a time based reminder.

1.1 Objectives

The objective of our project is to create an android application that provides:

- Location based reminder facility[2]
- Automatic profile changer based on location[1]
- Parent child tracker
- Emergency services
- Nearest friend notification[1]
- Person location tracking by everyone[1]

II. LBS COMPONENTS

2.1. Positing System

Allow geographically localizing the mobile device both outdoor and indoor using: satellite-based system, cell-ID, REFID, Bluetooth, WiMax, and Wireless.

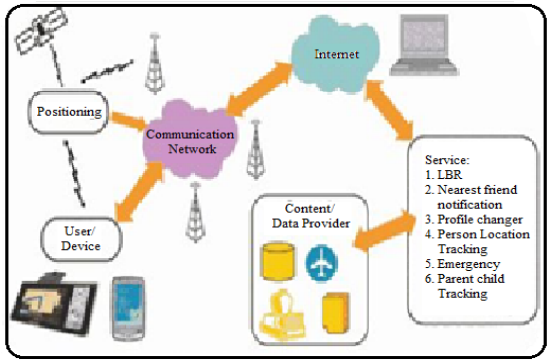

Fig : 2.1 LBS component

2.2. Communication Network

The wireless network is the one that allows transfer of data between user and server. Nowadays in most cases it is wireless internet (e.g. GPRS, 3G, 4G).

2.3. Service And Application Provider

The LBS provider including the software and other distributed services and components that are used to resolve the query and provide the tailored response to the user.

2.4. Data And Content Provider

Service providers will usually not store and maintain all the information, which can be requested by users. Therefore geographic base data and location information data will be usually requested from the maintained authority or business and industry partners.

2.5. Mobile Devices

Any portable device that has capabilities to utilize above stated components of LBS, For example: mobile phones, tablets, palmtops, personal navigation devices, laptops etc.

2.6. User

Operator of the mobile device and the person that is utilizing potential of modern mobile device and infrastructure in order to get value added information or entertainment.

III. SYSTEM ARCHITECTURE

The system architecture is the conceptual model that defines the structure, behavior, and more views of a system.Basically it has two modules: Central server and Mobile *device*.

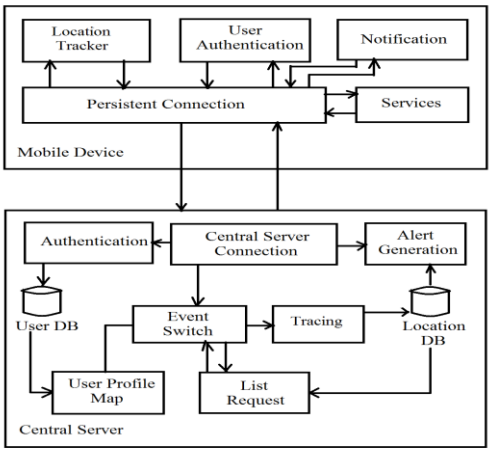

Fig 3.1 system architecture of location based reminder

IV.PROPOSED METHOD

We have implemented 6 services in our paper namely:

4.1 .Location Based Reminder[2]

Every day we use remainders in order to help us remember our future tasks but these reminders are time based. We are implementing location based reminders which ensures that the user is reminded of his task at appropriate time and location. For example if there is super mart on my way to home from college. So I will schedule a reminder if I have something to buy at super mart and the remainder will ring when I reach near to super mart.

4.2. Profile Changer Based On Location[1]

In this service we are implementing an automatic profile changer facility that is from normal to silent or vibrator mode according to the location. For example if user is at hospital and forgot to change his/her profile to silent then the application will automatically change it to silent.

4.3. Person Location Tracking By Everyone[1]

People having our application are visible in the general list. We can add known people to our friend list. User will be able to see location of every person in the list.

4.4. Nearest Person Notification[1]

If any person in the user's friend list is near to user's location then he/she will get a notification that your friend (say XYZ) is near to you at (say ABC) location with the distance. The radius of any person coming in user's vicinity is given 50m.

4.5. Emergency Services

In this service, user can save any message (say I need help) in the database. A button will be provided at the home screen. As soon as user clicks on the emergency button, the above saved message will be sent to every person in the friend list and the nearest friend will get a call. Do to this each person can track user's location easily and can get help at the earliest.

4.6 PARENT CHILD TRACKER

User can define himself as parent or child in the app. Then the app will give the location of child to parent.

V. MODULES

5.1 Mobile Devices

Firstly user has to register to app. For registration he/she has to enter all information about himself. Mobile device gets connected to server and sends all the collected information to server by using TCP protocols. When server receives all information, it stores the information to database. If user requests server about any information, then server sends the related information to mobile device. The mobile device then does related changes and moves to the next page. For example, if user logins, mobile sends requests server to cross check the username and password. Server sends back the related information to mobile device about whether the information is correct or incorrect. If not, then "login failed" toast will appear and login fails. If yes, then server allows all access to the services that user wants.

5.2 Server Devices

All mobile devices are connected to server through TCP protocols. If mobile device sends request for any service then server accepts the request, processes that request and sends all related information back to mobile device.

For example,

If user wants to login then he/she enters user-id and password at login page. The mobile device sends entered user-id and password and additional information. Additional information is a flag which is used to compare different services. These flags are saved in the database for different services. The server accepts these values sent by mobile and compare with flag named "Login". Server gets connected to database through Mysql and fire

a query to compare the user-id and password. If id and password is correct then server sends next information and if wrong, then sends a message "login failed".

VI. IMPLEMENTATION

The implementation includes six services:

6.1. Location based reminder

For this service we have provided a Google map. User needs to find the desired location on the map where he wants to set an alarm and give the message that needs to be displayed. When user reaches the saved location then alarm will be raised.

6.2. Profile changer based on the location

In this service, first user needs to save a particular place for which he wants his profile to get changed. The user's mobile device will get located using GPS technology. The profile will get changed according to the saved location.

6.3. Person location tracing by everyone

In this service, user can find the location of any person in his/her friend list by just viewing the person's profile.

6.4. Nearest person notification

If any person from user's friend list is near to user's location then user will be notified. For implementing this service, the GPS needs to track user's location continuously.

6.5. Emergency Service

When user clicks on emergency button, a message saved in database should be sent to all contacts in friend list. The person nearest to users location should be called using the calling service of sim card.

VII. RESULT

Below given are some of the snapshots in the application developed. These screenshots are about location based reminder service. The first screenshot shows the location map where a reminder has to be set. The GPS coordinates are automatically calculated when we select a location. Second screenshot shows a textbox where a message has to be typed. This message will be displayed when our reminder rings. Third screenshot shows that the reminder is saved.

7.1 SNAPSHOTS

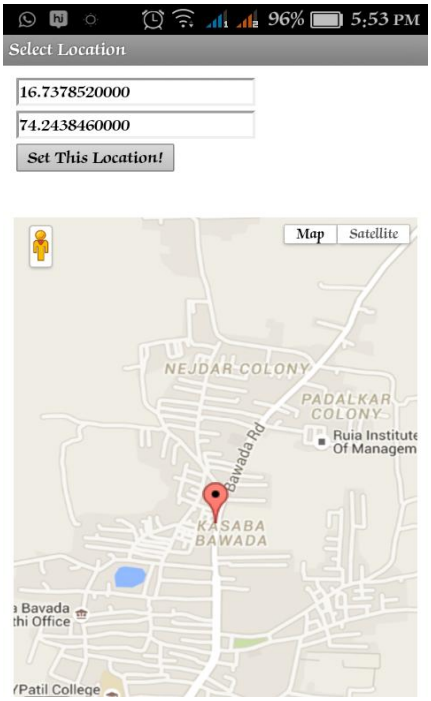

Fig: Select Location for reminder Fig: Enter message to be displayed

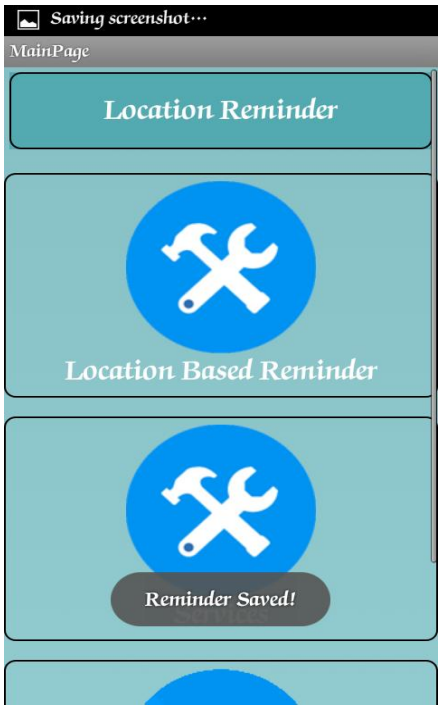

Fig: Reminder saved

VIII .CONCLUSION

Taking into mind the busy life of people, this application is developed to remind people about their daily tasks. Also a main purpose to develop this application is to help people in some emergency situations. This application

is useful for many girls who need to face critical situations and also for senior citizens who live alone. It is also an useful application for parents who wish to know if their children are safe in their colleges/ schools.

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