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Location based Reminder with Remote Request

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Abstract: ***We all being human usually forget some things which we have to get from other. In such a case, this application will be useful to remember the things.***
Location-based alarm using GPS is an attempt to add an alarm facility for mobiles, based on the location of the device and to set a to-do list that is the task to be performed. The location-based alarm will give you an alert and a notification when you reach your desired destination.
Moreover, we are up with a dynamic approach of remote handling for reminder system. We have put forth an idea where in user can connect and handle each other's reminder system. Hence when you forget of setting reminder itself, your connected friend may set it for you.
Keywords: Android application, GPS (Global Positioning System), LBS (Location Based Services), Location Based Reminder System,

I. INTRODUCTION

Technology and its future developments are basically the approaches to finding ways to make life easier. A good product is judged by its simplicity, practicality, and functionality.

Mobile information and communication technology determine society and behaviors' since it represents an element of individual quality and a way of communicating and doing business.

The potential of hardware is such that it's difficult to make a proper use of it. By adapting to the users' requirements through improvement in the software side, hardware's capacity can be justified for a bit. The mobile applications focus on the technology, hence they are developed for certain purpose or for special technologies. The main aim of location-based services is to notify the customer of particular things based on their current location.

We as human beings have a tendency to often forget things hence some of the important work to be done remains incomplete. We have location-based services at our disposal to overcome this shortcoming.

However, some of the current location based services fall short on some part as they do not efficiently use the information; services are provided to the customer irrespective of their intention and current location. Thus, to overcome such situation we have proposed a location-based reminder system.

This project is similar to an alarm, but the main and the most important difference is that it is not just a time alarm or task reminder but a location prompt.

It comes with a provision of setting an alarm for a particular plan. The location-based alarm is a GPS based alarm, If a reminder is set for a particular locale, it will prompt with notification once it detects you are within the user-defined range from the destination.

The users' current location will be saved in terms of longitudes and latitudes. The reminder will work when the user gets closer to the location.

This location-based alarm is useful for the traveling salespersons and passengers traveling in trains/buses. It is not an easy task to remember of all task and optimal routs for a traveling salesperson. So by using this application, he can set an alarm to the places, where he needs to go.

It works wonders as you will be given a reminder to do/buy things at the exact location rather than keep the reminder on all day. Here also a new additional functionality is provided; setting of the radius. If the user chooses 500 m as the radius, then the alarm will go off when the user is in the proximity of the set location but 500 m meters away from it.

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II. SYSTEM ARCHITECTURE

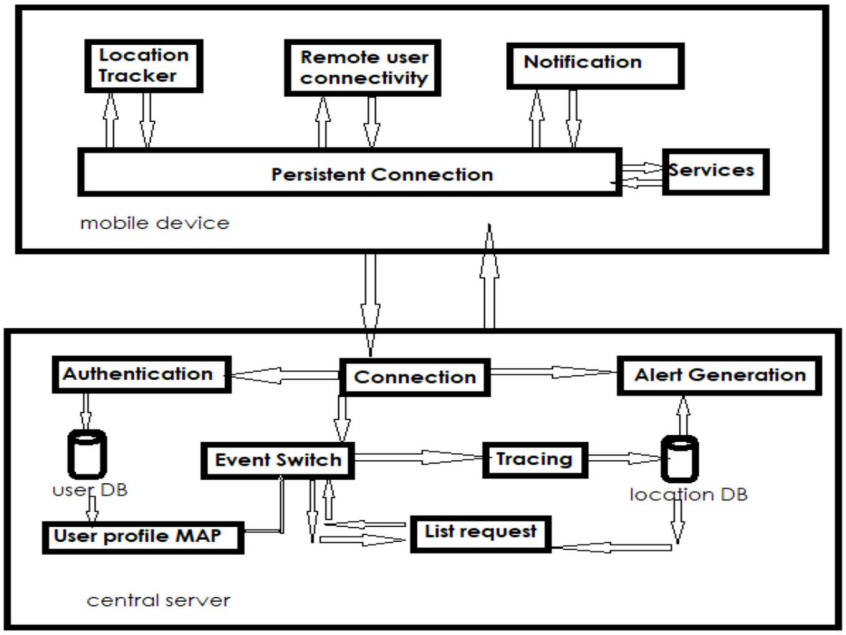

Figure 1: System Architecture

This application includes following modules:

A. Geo-Fencing Model

In the Geo-fencing model the GPS system is used for getting the current location and also the location for which the alarm is to be set. Google Server is a web mapping service application and technology provided by Google, which powers many map-based services, including the Google Maps website and maps embedded on third-party websites via the Google Maps API. There is a provision of street maps along with route planner for various traveling modes (walking, two-wheeler, four-wheeler, public transportation) including a locator for urban businesses in numerous countries around the world. Google Maps for Mobile introduced a Java application called Google Maps for Mobile, intended to run on any Android-based phone or mobile device. Many of the web-based site's features are provided in the application .The software looks up the location of the cell site using a database of known wireless networks and site.

B. Set Location Alarm And Task To Be Performed

The user location is taken as input as soon as the location alert setting system is desired to be activated.. This reminder system monitors the mobile screen in consistency. The moment user gets within the radius of 500 meters, the reminder rings. The default radius range will be set to 500 meters that can be changed according to the users' desire. Not only the alarm, but its description and route map to the destination location is also provided.

C. Set Timer Alarm

In this module the timer is used to set an alarm such that if the user wish to set a location for a particular time, then in this case the timer alarm is also set for that location.

D. Remote Alarm

In this module the user can set an alarm remotely on someone else mobile by whom the user is authorized for an access to this reminder system. This allows the user to remember his clerk, co-partners or friends for some getting some particular things.

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III. USE CASE DIAGRAM

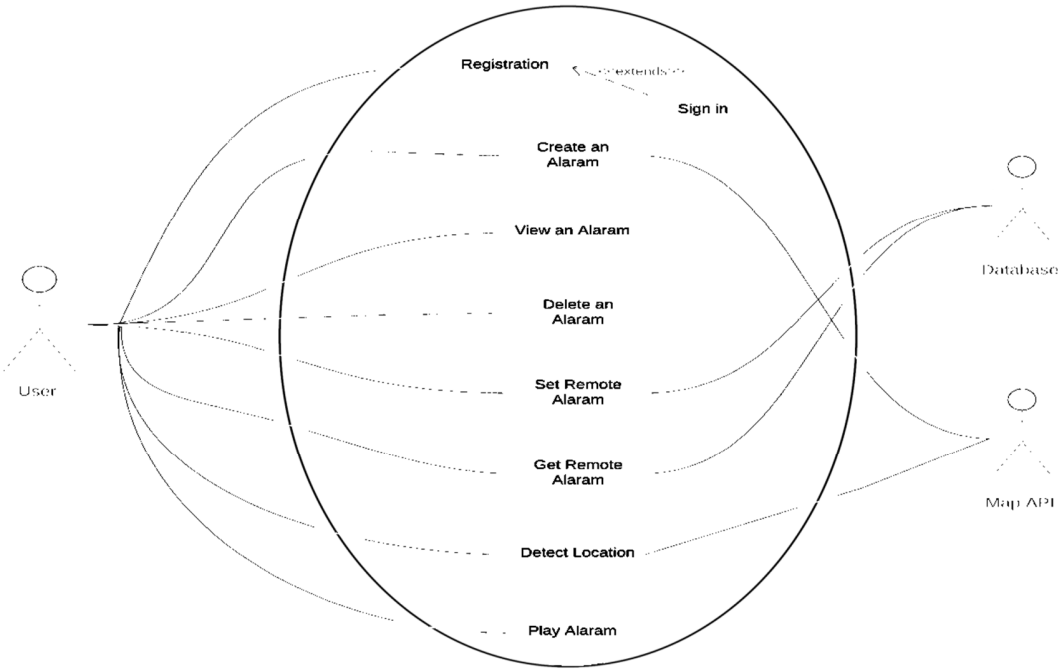


Figure 2: Use Case Diagram

IV. MATHEMATICAL MODEL

S is system,
S = {I, O, P, Ss, Fs}
Where,
I = Input
0 = Output
P= Process
Ss= Success State
Fs=Failure State
I= {I0, I1, I2, I3}
I0= User Details For Registration (Name, Mobile No, Password)
I1= User Details for Login (Username, password)
I2= Location task (Task name, start date, end date, location)
I3= Remote task (Task name, description, date, location, end-user)
O= {O0, O1, O2, O3}
O0= If valid details are provided then register.
O1= Validate & Provide access
O2= Set task
O3= set task and send message to end user.
P= {P0, P1, P2, P3}
P0= Registration of user
P1= Assign location based task
P3= Assign remote based task to end user
P4= Message sending
P5= Google map location validation
Ss= {Ss0, Ss1, Ss2, Ss3}

Ss0= if valid user only get access to system
Ss1= if task set correctly
Ss3= if alert on correct location
Ss4= if message send successfully.
Fs= {Fs0, Fs1, Fs2, Fs3}
Fs0= if invalid user get access to system
Fs1= if data not send on server
Fs3= if system takes more time
Fs4= if alert on wrong location

V. IMPLEMENTATION

A. Register/Login Page

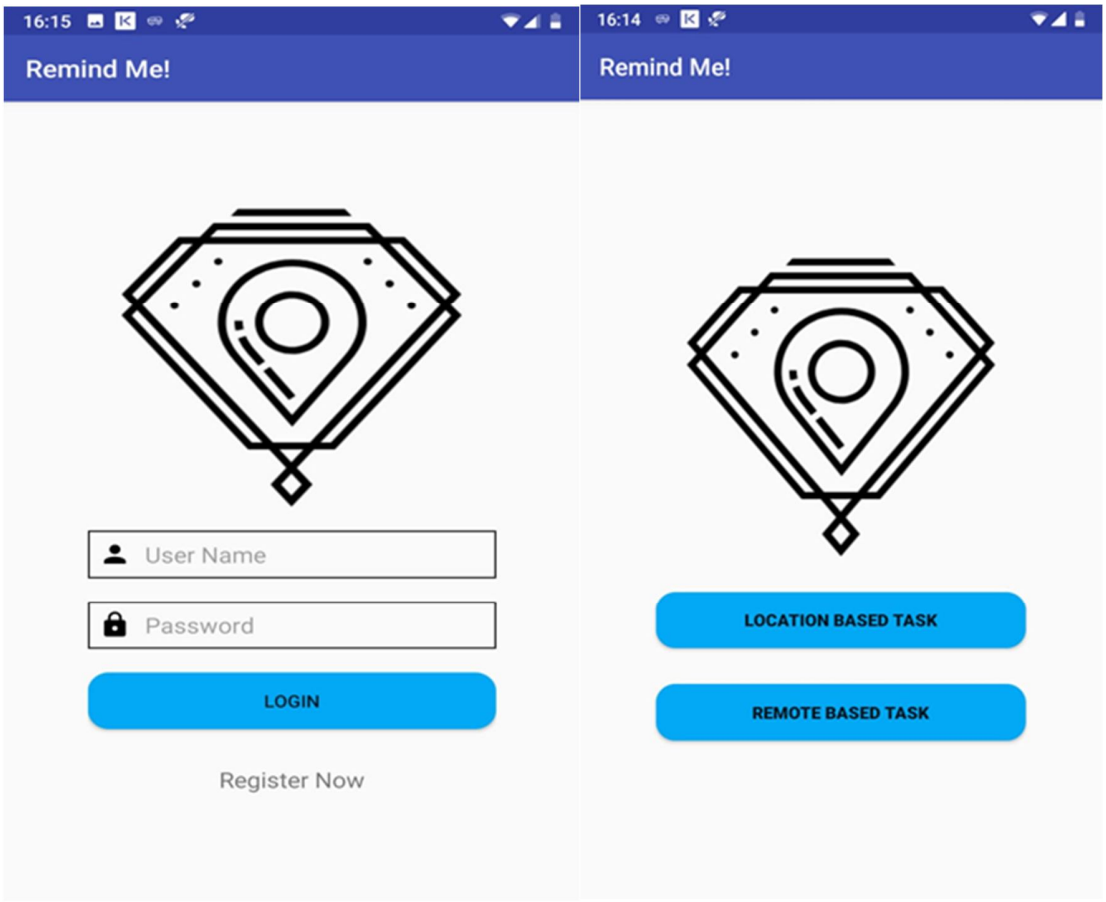
Registration data is inserted into the database through xamp server. Login credentials are validated in the same database.

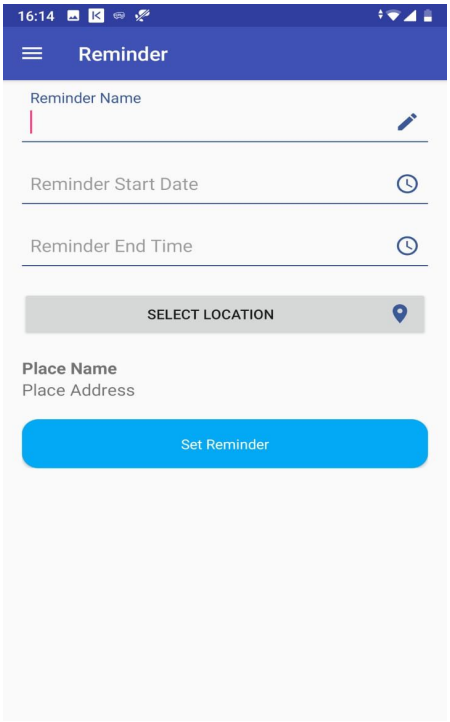
B. Setting Reminder

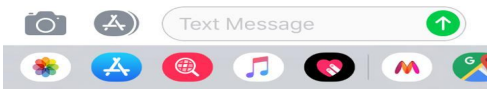
1) Location Based Task: Sets the reminder for own self. Inputs are Date, Time, Name of Task, Location, Message, Duration.
2) Remote Based Task: Sends the task to another user on same parameters as of setting reminder.

C. Remote User

If the person to whom reminder is sent has the same application then the sent task appears in his/her To-do list and is set as reminder. Else a text message is sent from the sender's mobile number to the receiver's phone. This text message contains the time, task name, date.







VI. CONCLUSION

We have discussed and successfully explored the optimal use of location-based services in our daily life. Location-based reminder system provides an efficient and user-friendly service to its user. In this location based alarm system based on the location of the mobile devices, the user automatically gets the notification in relevant situations allowing them easily to activate or deactivate the alarm system. Till now there were so many applications for reminding the work schedule which is working based on the alarm. But in our application, we have introduced a new implementation for reminding the daily work remotely to another user in contact.

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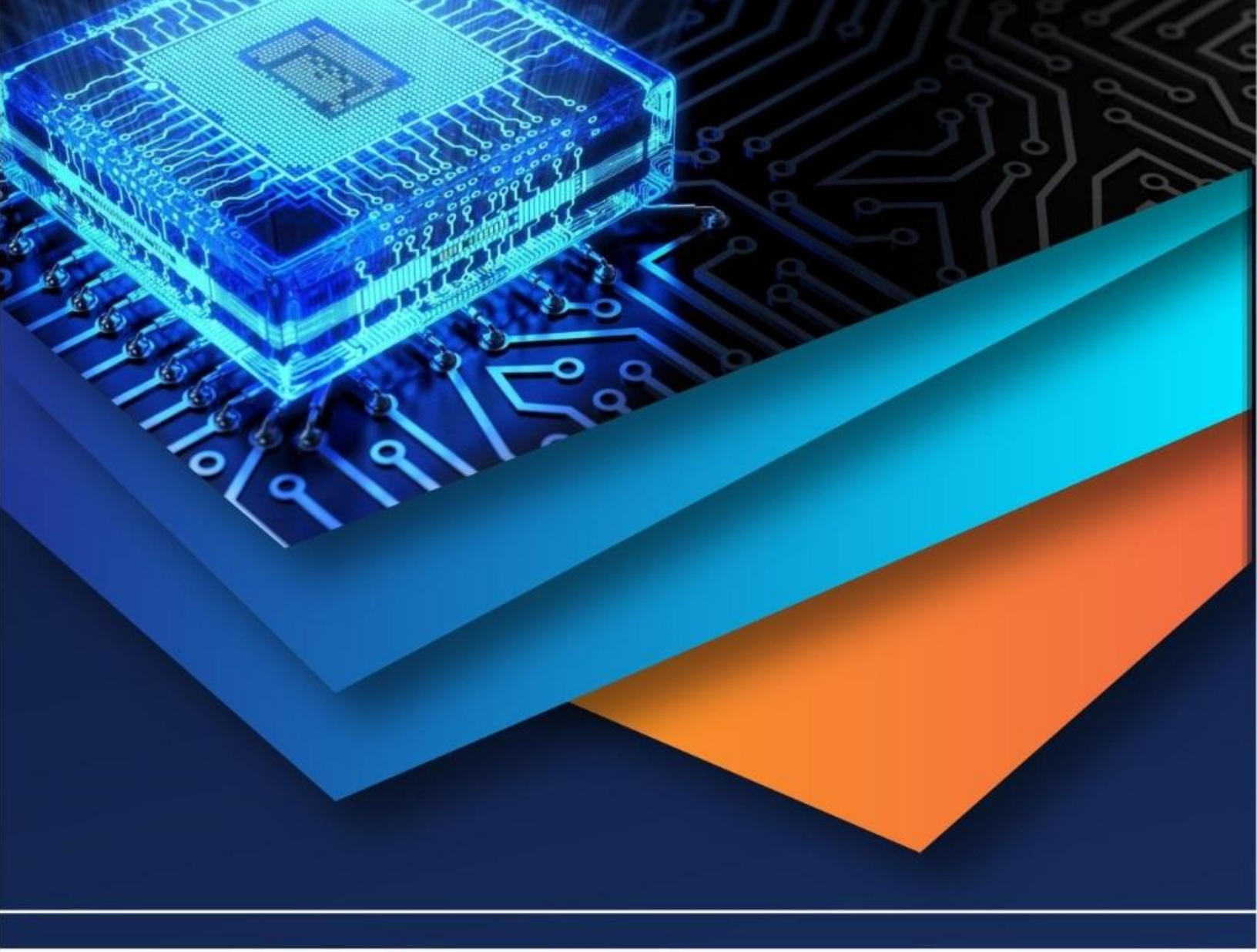

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