RESEARCH ARTICLE

Place Reminder- An Android APP

Miss. Minal S. Mahure [1]

[1]Department of Information Technology, H.V.P.M College Of Engineering, SGBAU Amravati University, Maharashtra

[1] minal.mahure@gmail.com

ABSTRACT:- Today the Mobile communication systems play very important role in our day to day life. There is enhancement in data rate and availability of data in mobile communication. Mobile provides the function of reminder depends on date and time. But now day's smart phones provides us various application. One of the applications provided by smart phones is reminder which base on time.

In this paper we introduce a new technology which is depends on Android OS which give the reminder about place that user want to visit. In the first part of this paper there is introduction about the application. In reaming paper will explain the technology.

Keywords:- GPS (Global Positioning System), LBS, Android O.S

I.   INTRODUCTION

There is a lot of reminder and alert system in today's mobile phones. But all these reminder system work based on time and date. Sometimes there is desire for reminders based on location. For an example in daily routine we go to mall to purchase listed items n most of the times we forget some of the item to be purchased. We want ourselves to be reminded of the things next time we are at the mall. 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 one self, to-do lists, and electronic calendar alerts.
For example, a student may send himself an email to remind himself to bring a book for class the next day.
So proposed application Place Reminder Location Based Reminder on "Mobile Phones "allow user to set reminders based on location in the mobile phones. Once the reminder is set say for grocery store every time when we go to the grocery store the

remainder will be displayed on our mobiles. So this application will act as a personal secretary using which we can do our work correctly in the correct place at correct time.

Consider some real world situations:

1. Some people tend to forget things when they go for office or school.
2. A person went to office and thought of doing some work in home when he returns to home.
3. Person may like to purchase a birthday gift the next time when the at gift shop.
4. A person went to the grocery store from home and forgot to bring a list of items which he had written on a piece of paper.
5. When people go on holiday some time they forgot to visit places.

It is desired that there would be a reminder system or application to automatically remind people what they might have forgotten to bring along just when they step at that particular location. The present application is motivated by these situations. Thus our proposed application Place Reminder Location Based Reminder solves all such situations by giving beep/message whenever user reaches location.

GPS is key concept in Place Reminder. The Global Positioning System (GPS) is a space-based satellite navigation system that provides location and time information in all weather conditions, anywhere on or near the Earth where there is an unobstructed line of sight to four or more GPS satellites. We need a GPS receiver enabled Android Mobile phone for receiving the GPS data from the satellite. There are a wide range of such mobiles are available in the market.

II.   PRELIMINARY

I. GPS

The Global Positioning System (GPS) is a space-based satellite navigation system that provides location and time information in all weather conditions, anywhere on or near the earth. GPS is a complex system which combines three segments – space, control and user segment. Such distinction of segments emphasizes the main objective of the combined segments: to create a functional system that at a global level makes people aware of the possibility and potential of the services based on navigation.

GPS uses the satellite constellation, where each of the satellites transmits the signal in the range which encompasses the message navigation. The latter contains also the information necessary to determine the satellite coordinates and brings the satellite clocks in accordance with the GPS time.

At the same time the measurements of at least four satellites are required in order to determine the positioning of three-dimensional and time capacity. The satellite constellation provides a range of possibilities for each user who is located anywhere and anytime on the Earth. Tracking of GPS satellite, using its operative controls and determining their location in space, is performed by the Operational Control Segment (OCS).

Additionally, the segment takes care of

- Maintenance of orbiting satellites through small manoeuvres;
- Introduction of corrections and adaptation of satellite clocks and capacity;
- Monitoring of the GPS satellites and *upload* of navigation data for each satellite
- Giving orders for big changes in case of satellite failure.

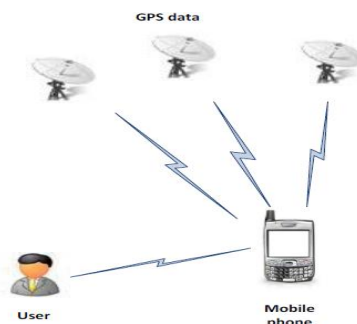The figure1 shows the architecture of the GPS [12,13].

Figure1.Architecture of GPS

The architecture of Place Reminder called GPS Architecture consists of several segments that are sufficient to create a fully functional unit. The absence of any of these parts means at the same time the impossibility of developing the system.

As can be seen, there are three basic segments:

1. User – represents a person who uses the possibilities provided by the mobile device and the Place Reminder-An Android application installed on the mobile device;

2. Mobile terminal device – hardware-equipped terminal which enables the usage of Place Reminder-An Android application;

3. GPS system – system of satellites and receivers intended for positioning. The basis for the running of the application lies in the mathematical concept, i.e. formula which compares the geographic position entered into the application and at which the user wants to be alarmed, and the position given by the GPS system that shows at which coordinates the mobile terminal device is currently located.
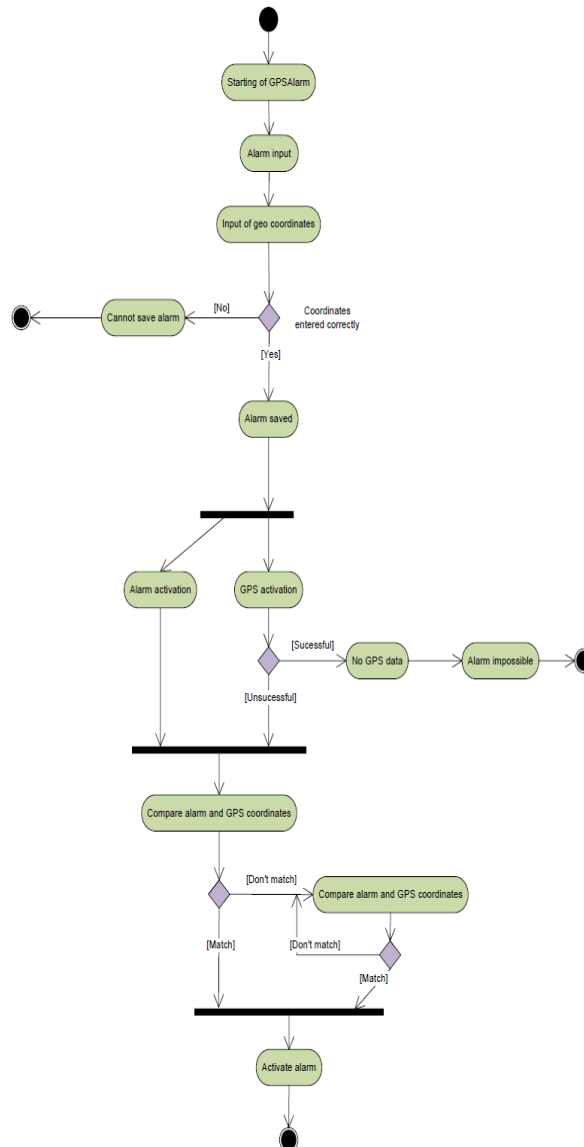
Working of GPSAlarm System

Figure 2:Working Of GPSAlarm System[14]

II.LBS

The term Location Based Services (LBS) refers to mobile services in which the user location information is used in order to add value to the service as a whole. The user location information in that case consists of X-Y coordinates generated by any given Location Determination Technology (LDT), such as Cell-ID, A-GPS,EOTD, etc. The Location Based Services (LBS) are mobile applications that depend on the location of the mobile device, such as cellular phones. LBS services can be categorised as imposed LBS services (push services) and as user-requested LBS services (pull services). In order to make the LBS services possible, some infrastructure elements are necessary, including [6]:

- Mobile devices,
- Applications,
- Communication network,
- Positioning of components,
- Servers,
- Services.

Mobile devices are tools used to access LBS services, send requests and correct results. Such devices can be Personal Navigation Devices (**PNDs)**, Personal Digital Assistant (**PDA**), portable computers, cellular phones, etc. [8]. The user's interface for access to LBS services represents an application. Usually it is software-developed by the service provider, uploaded and installed on the user's device. The specific application is usually developed for specific LBS services. Because of the constraints of the mobile devices (small display size, processor of limited power and memory, battery capacity), LBS applications have to be light and save batteries.

The service providers are engaged in server maintenance which sends different types of LBS services to users, and are responsible for the processing of service requests and for returning the request result. The server calculates the positions, looks for the routes or specific information based on the user's location. The service providers usually maintain all information requested by the user. Instead, the content providers are responsible for the collection and storage of geographic data, location-based information, etc. These data will be requested and processed by the server and then returned to the users.
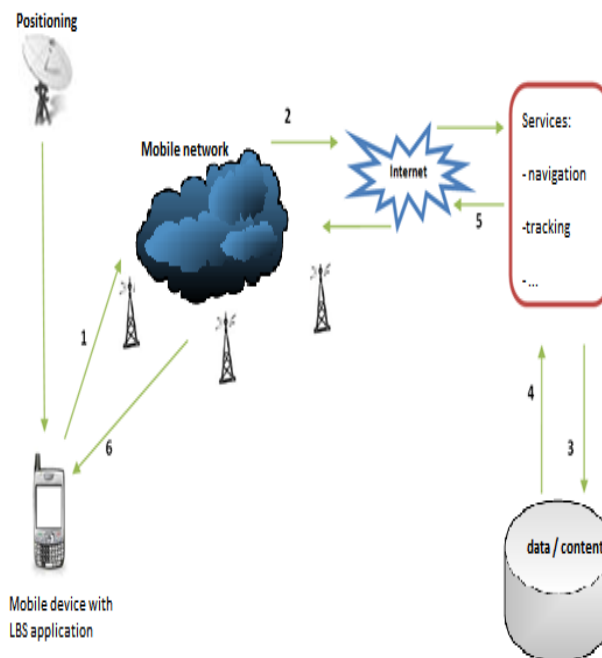

Figure 3: Interaction of segments in the LBS process [6]

There are six types of LBS services [10]:

1. Assistance,

2. Orientation,

3. Information,

4. Advertising,

5. Tracking,

6. Charging.

III. Satellite Communications

The satellite communications market has developed significantly over the past five years. The industry has extended its offerings to include telecommunications services via low Earth orbit (LEO) satellite constellations and enhanced its capabilities in such high-growth areas as direct-to-home (DTH) television[9]. Despite these expansions, many sectors of the satellite communications industry have experienced mergers among major providers and operators aimed at creating consolidated companies that are more competitive nationally and internationally. New broadband services and bundled offering packages to end-user consumers promise to maintain, or perhaps even increase, recent growth over the next few years. Figure 3. shows world revenue growth in the four industry sectors examined in this section: The highest revenue component of the satellite communications industry from 1996 to 2000 has been the satellite services sector. Within this sector, DTH television services have driven a large portion of the growth. The first Direct Broadcast Satellite system, Hughes Communications' DirecTV, debuted in 1994. This DTH satellite television service featured high-powered satellites transmitting in the Ku-band and required consumer reception dishes only 18 inches in diameter, significantly smaller than traditional C-band dishes typically measuring several meters across. As other providers rolled out similar services (Primestar's medium-powered system and Echostar Communications' Dish Network), competition among providers and with the cable industry led U.S. operators to significantly subsidize the cost of consumer equipment to expand their subscriber base.
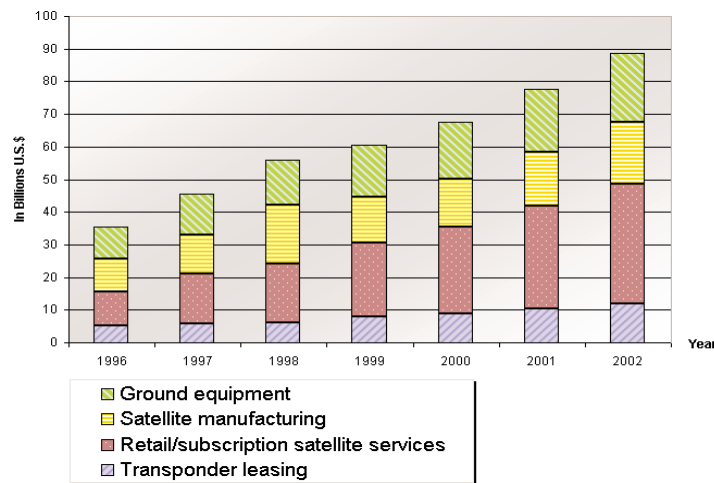

Figure 4. world revenue growth in the four industry sectors

III.1.World commercial communications satellites on orbit

A total of 425 operational communications satellites offering commercial service currently orbit the Earth. Of these satellites, slightly under 54 percent operate from geostationary orbit (GEO), while 42 percent operate from LEO, and the remaining 4 percent circle Earth from elliptical (ELI) orbital planes. The United States operates 26 percent of operational GEO commercial communications satellites[11].

IV.   Android Operating System

Android is a Linux-based operating system[3]. designed primarily for touch screen mobile devices such as smart phones and tablet computers. Initially developed by Android, Inc., which Google backed financially and later bought in 2005[9]. Android was unveiled in 2007 along with the founding of the Open Handset Alliance: a consortium of hardware, software, and telecommunication companies devoted to advancing open standards for mobile devices[10].The first Android-powered phone was sold in October 2008[2].

Android is open source and Google releases the code under the Apache License[3]. This open-source code and permissive licensing allows the software to be freely modified and distributed by device manufacturers, wireless carriers and enthusiast developers.

Android has a large community of developers writing application("apps") that programming language. In October 2012, there were approximately 700,000 apps available for Android, and the estimated number of application downloaded from Google Play, Android primary app store, was 25 billion. These factors have contributed towards making Android the world's most widely used Smartphone platform, overtaking Symbain in the fourth quarter of 2010, and the software of choice for technology companies with require a low-cost, customizable, lightweight operating system for high tech devices without developing one for scratch. As a result, despite being primarily designed for phones and tablets, it has seen additional applications on televisions games consoles, digital camera sand other electronics. Android's open nature has further encouraged a large community of developers and enthusiasts to use the open source code as a foundation for community-driven projects, which add new features for advanced user or bring Android to devices which were officially released running other operating system. Android had a worldwide Smartphone market share of 75% during the third quarter of 2012, with 750 million devices activated in total and 1.5 million activations per day. The operating system's success has made it a target for patent litigation as part of the so-called "Smartphone wars" between technology companies. As per may 2013 , a total of 900 million Android devices have been activated and 48 billion apps have been installed from the Google Play Store. The currently leading platforms on the market are Android, Iphone, Symbian, BlackBerry, Windows Mobile and PalmWeb.But Android OS is now days mostly use as compare to other OS.Android is user friendly OS and easy to access. If any user wants to create application base on android then process is easy as compare to other OS. Patented for application is also low cost as compare to other OS [5].

V.   SOFTWARE TOOLS

I. Android SDK

II.IDE:ECLIPSE

III. Database:SQLite

IV. PhoneGap

I. Android SDK

A software development kit that enables developers to create applications for the Android platform. The Android SDK includes sample projects with source code, development tools, an emulator, and required libraries to build Android applications. Applications are written using the Java programming language and run on Dalvik, a custom virtual machine designed for embedded use which runs on top of a Linux kernel. This virtual machine is register-based, and it can run classes compiled by a java language compiler that have been transformed into its native format and optimized for mobile devices that was designed and written by Dan Bornstein and other Google engineers. Dalvik is a part of the software stack that makes up the Android platform.

Android's application framework lets you create extremely rich and innovative apps using a set of reusable components. This section explains how android apps work and how you use components to build them.

II.IDE:ECLIPSE

II.1 *Integrated Development Environment*

A programming environment integrated into a software application that provides a GUI builder, a text or code editor, a compiler and/or interpreter and debugger. Visual Studio, Delphi, JBuilder, FrontPage and Dreamweaver are all example of IDE's

II.2 ECLIPSE

ECLIPSE is an open source community whose projects are focused on providing an extensible development platform and application framework for building software. ECLIPSE provides extensible tools and framework that span the software development lifecycle, including support for modeling language development and performance environment for JAVA,C,C++and other, testing and performance, business intelligence, rich client application and embedded development.

III. Database: SQLite

SQLite is an open source Database which is embedde3d into Android. SQLite supports standard relation database features like SQL syntax, transaction and prepared statement. In addition it requires only little memory at runtime (approx.250 Kbyte).

SQLite supports the data types TEXT, INTEGER, REAL.All other types must be converted into o0ne of these fields before saving them in the database. SQLite itself does not validate if the types written to the columns are actually of the defined type, e.g. you can write integer into string column vice versa.

III.1 SQLite in ANDROID

SQLite is available on every Android device. Using a SQLite database in Android does not require any database setup or administration. You only have to define the SQLite statement for creating and updating the database. Afterwards the database is automatically managed for you by Android platform. Access to SQLite database involves accessing the filesystem.This can b slow. Therefore it is recommended to perform database operations asynchronously.

IV. PhoneGap

PhoneGap is a HTML5 application framework that is used to develop native applications through web technologies. This means that developers can develop Smartphone and Tablet applications with their existing knowledge of HTML, CSS, and JavaScript. With PhoneGap, developers don't have to learn languages like Objective-C for the iPhone.

Applications that are developed using PhoneGap are hybrid applications. These applications are not purely HTML/JavaScript based, nor are they native. Parts of the application, mainly the UI, the application logic, and communication with a server, is based on HTML/JavaScript. The other part of the application that communicates and controls the device (phone or tablet) is based on the native language for that platform.

PhoneGap provides a bridge from the JavaScript world to the native world of the platform, which allows the JavaScript API to access and control the device (phone or tablet).PhoneGap essentially provides the JavaScript API with access to the device (phone or tablet) capabilities like, the camera, GPS, device information, and many others.

VI.   CONCLUSION

The prevalence of mobile phones and the pervasiveness of their networks make them a promising platform for personal ubiquitous computing. Our findings from a two week deployment of Place Reminder validate that location-based reminders can be useful even with coarse location-sensing capabilities. Notably, location was widely used as a cue for other contextual information that can be hard for any system to detect. On the whole, it appears that the convenience and ubiquity of location-sensing provided by mobile phones outweighs some of their current weaknesses as a sensing platform. This bodes well for the use of mobiles phones as a personal ubiquitous computing platform. Our study revealed unexpected uses of location-aware reminders. We found that Place reminder was often used for creating motivational reminders to perform activities that would vary in priority over time. This is similar to using post-it notes. In highly visible areas for motivation. The locations for motivational reminders were often set at various shops.

VII.   FUTURE SCOPE

- Making it available on the other Smartphone market also.

- Customization.

- Encouraging unique and more opportunistic use

- Apply for small area also

Modifications (In near future):

- First, give the limited text entry mechanisms available on mobile phones, a way of associating audio messages or pictures with reminders could offer greater convenience encouraging unique and more opportunistic use.
- Second, it is more appropriate to have reminders based on location and time as well as date. As an added feature, priority can be assigned to the reminders.
- Finally to naturally support the use of recurring reminders, we propose a change to the user interface, Rather than the application automatically removing a Place Reminder when it is detected and presenting it as an explicit reminder notification, the application would continuously display a list of nearby Place Reminder as to-do item, sorted by proximity to the current location. Alerts could still be provided when location certainty is high.

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