



Location Based Reminder: An Android Application

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Abstract—Location based reminder, is a mobile base application built on the Android platform that provides personal location-based services such as location reminders, bookmarking, mapping and search nearby. Such applications are yet to be developed extensively. Mobile phones provide a potentially convenient and truly ubiquitous platform. So such a reminder system allows creating location based reminders, and alerts the user what he needs to do, when he is in the right place to do them. Bookmarking allows the user to virtually “save” places of interest while he is on the move and obtain driving directions. Mapping enables the user to visualize his relative geographic location in real time, and map the location reminders and bookmarks. Finally, search nearby exploits Google’s powerful local search engine to allow finding and bookmarking nearby places such as gas stations, restaurants, grocery shop etc, and retrieving map-based directions. The unique features of this app uses location based technologies effectively and sets this app apart from the rest of the apps in the market.

Keywords— Android,Application,Reminder,To-do list,GPS,Location based services

I. INTRODUCTION

Every day we use special messages in order to help us remember future tasks. These messages are known as reminders, take many forms, such as post-it notes, emailing oneself, 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. Reminders can be useful but where should they be placed in order to be most useful? The answer is simple: Mobile phones. Mobile phones and the Internet have revolutionized the communication and with it the lifestyle of people. 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, parties) and on the other hand information on places (city maps, restaurants, museums, hospitals.)

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 en 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. The following diagram depicts just how important it is to be reminded at the right place and not only at the right time, it considers two situations, when the user is just at the right location and the other when she is too close/far.

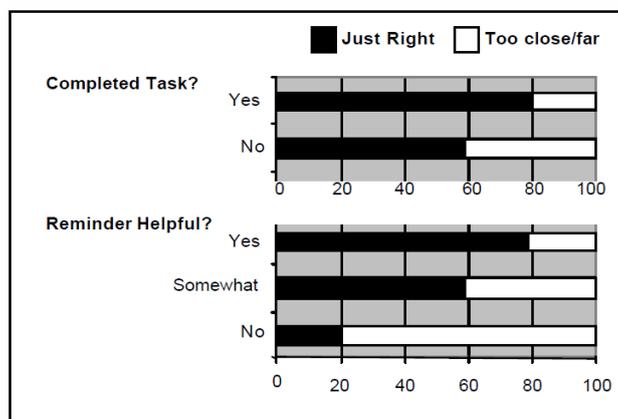


Fig. 1 Importance of location in reminders[5]

The next question that arises is why have we chosen the android platform and not any other mobile operating systems? This is due to the fact that android covers majority of the market, so it provides a good reach, also more importantly it does place any kind of restrictions on the developers and gives almost complete freedom of development unlike other mobile operating systems..

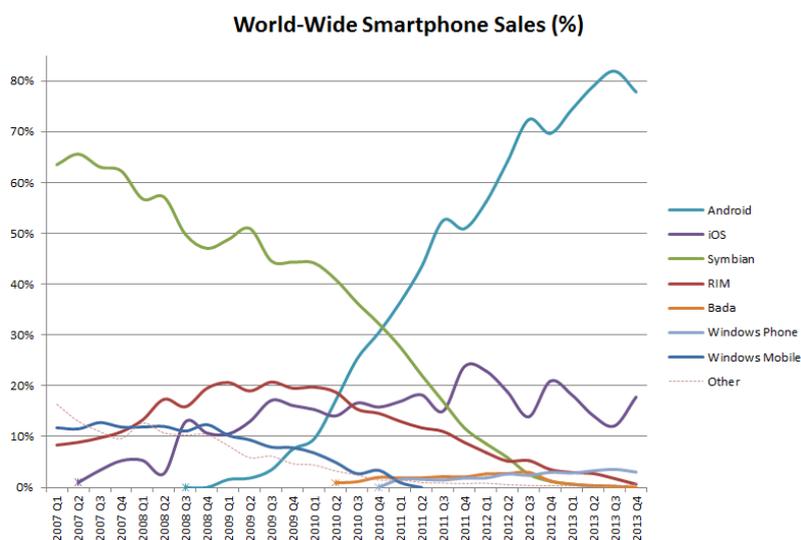


Fig. 2 Distribution of mobile operating system market share

II. LOCATION BASED REMINDERS AND SERVICES

Earlier in the 'Introduction' section we briefly looked at location based reminder and their importance, now let us look in depth. A Location-Based Reminder (LBR) is a location based reminder application for smart phones running on android platform which not only has traditional features of a reminder application, but uses modern technologies such as location based services to make the application more context aware thereby making it more relevant to real life and more useful for potential users. Location based reminder uses location based services .

LBSs are information services accessible with mobile devices through the mobile network and utilizing the ability to make use of the location of the mobile device. These definitions describe LBS as an intersection of three technologies: Internet, GIS, Mobile devices (see Figure).

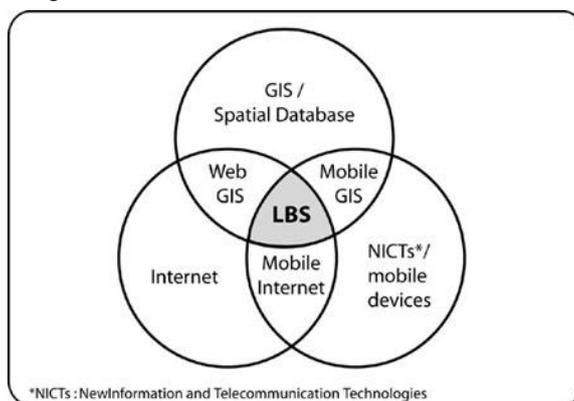


Fig. 3 LBS as an intersection of technologies (Brimicombe2002)

We now provide considerations to be take care of while using location based services[5].

1. Deliver messages at appropriate times

One subject drives through the retail center in her town every morning on the way to work, at which point location based reminder delivers her messages. She found it frustrating to receive deliveries then because she cannot stop while enroute to work. She pointed out that there is no way to specify that she only wants messages at certain times of day. Therefore using time based constraints might be necessary eg. After 5pm.

2. Narrow the delivery radius for stationary users

In several cases, subjects were at home and received unwanted deliveries for nearby places. They preferred receiving these messages after leaving the house. We determined that when a person is spending a lengthy amount of time at a place, deliveries should be restricted to messages for the present location. This is because if the recipient is not leaving soon, they could receive the information and forget to act on it before they near the relevant place.

3. Deliver messages in ways that fit travel patterns

Several times, a subject received a message for the post office when she was within a reasonable distance. She explained that she only finds it convenient to go to the post office, however when she is on the road that passes right in front of it. To satisfy this requirement, the application will need to consider the user's path rather than just calculating the straight-line distance between points.

III. PROPOSED FEATURES AND SYSTEM

A. Map Me

The Map Me feature shows the following items as icons on a local map of the area.

1. Current location in real time
2. Location reminders.
3. Bookmarked place.

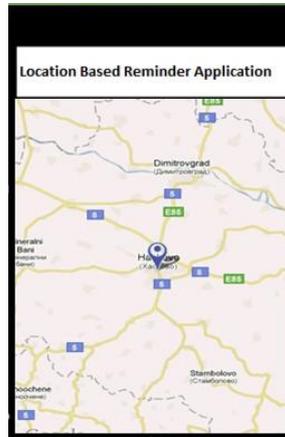


Fig.4 Map Me feature

B. Bookmark places

The bookmark feature allows users to save places of interest for convenient reference. The name and address of the specified place is saved in the list of bookmarked places.



Fig 5. Bookmarks

C. To-do list(Reminders)

The To Do list helps the user to be organized. It works on three types of triggers:-

1. Time based- These are the traditional reminders which trigger at a particular time. example-Remind me at 9 am to water the garden.
2. Arrival based-Arrival based triggers are location specific triggers, which activate when the users arrives at a particular location. example-Remind me to call xyz when I reach home.
3. Departure based- Departure based triggers like arrival based triggers are location specific. But instead of getting activated when the user arrives at a particular location it is activated when the user leaves a particular position.

D. Search nearby

Search nearby allows the user to search for a particular type of object say a petrol pump in the nearby area. It will show all the instances of that the type of object within a particular distance.

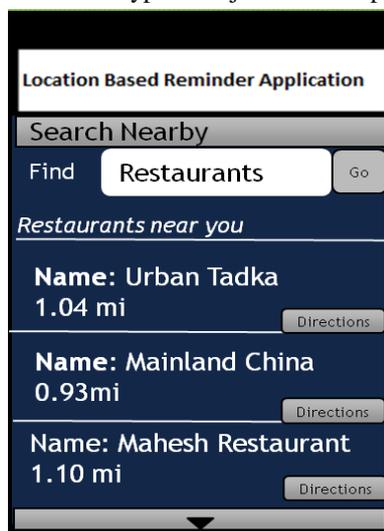


Fig.6. Search Nearby(a)

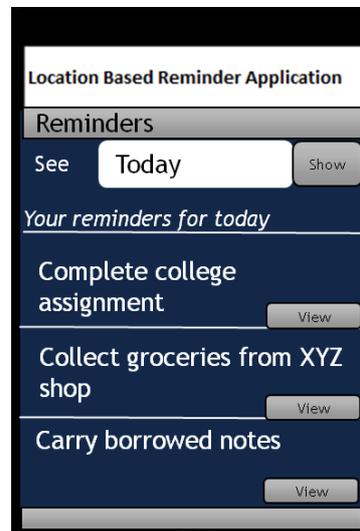


Fig.7 Search Nearby(b)

E. Motion based reminder

When the user will traverse through any location or area corresponding to the activity specified in his to do list, he will get an alert or notification regarding the same. Suppose the user specifies that he wants to buy milk in his list on a particular day. So on that day, if he comes near a dairy, he will get a notification to buy milk.

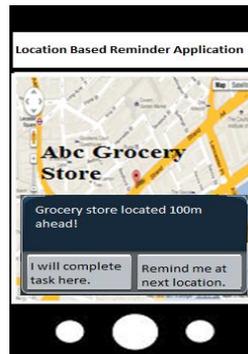


Fig.8 LBR Feature

IV. CONCLUSIONS

In this research paper we have put forth the idea of a modern reminder application which makes it more useful to potential users. The application which is android based uses technologies such as GPS and internet connectivity to make reminders more context aware by adding the dimension of location to traditional time based reminders. We also enlisted the considerations to be taken care of while developing a location based application and described the proposed features.

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