

Voice Enabled Location Based Smart Reminder System

Ms. Gauri V. Deshmukh¹ Ms. Shubhangi H. Satpute² Ms. Jayshari S. Gawande³

Ms. Shriya S. Wajpeyee⁴ Ms. Nilima V. Pardakhe⁵

^{1,2,3,4,5}Department of Computer Science and Engineering

^{1,2,3,4,5}Prof. Ram Meghe Institute of Technology and Research, Badnera, India

Abstract— Android is platform launched by Google used to develop advanced smart mobile phone. Android provides the support for mobile map and location services through which we can trace the location. Android platform is free and open, providing an user friendly development kit which containing flexible map display and control functions. Google Maps API provides many utilities for adding individual content to the Google map and various web map applications can be explored based on Google Maps API.

Key words: Smart Reminder System

I. INTRODUCTION

Android is too much popular and it available freely to which developers is used to create compelling mobile applications and tablet application that take full advantage of all the handset devices has to offer. Android is completely open-source software. For example, an application can call upon any of the phone's core functionality such as making calls, using the camera or sending text messages, allowing developers to create richer and more adhesive experiences for users.

The development of Android is based on modified Linux Kernel. Furthermore, Android utilizes a custom virtual machine that was designed to optimize hardware resources and memory in a mobile handset environment. Android systems can be liberally extended to incorporate new cutting edge technologies as they emerge. The platform will continue to develop, as the enthusiastic group of developers work together to build innovative mobile gadget application, with unique releases of API along with each unique version.

Google Maps is a web mapping service application and technology provided by Google, that offers many map-based services such as satellite imagery, real time traffic conditions, street maps, topographic maps and hybrid images. It can also accomplish global location search, classified information access, queries regarding traffic information, driving direction route and even street scene 3-dimensional view and many more.

Android provides the facility to developer for create activities which include interactive Google Maps as part of the user interface, with complete access to the maps which the developer can control programmatically and annotate using Android's huge graphics library. Geo-coding is a feature provided by Google map that allows developers to translate between street addresses and latitude-longitude map coordinates.

This gives a measurable context for the locations and co-ordinates such as latitude and longitude used in services based on location and map-based Activities. To combine maps with locations, Android encompass an API for forward and reverse geo-coding that lets the user find map co-ordinates for an address, and the address of a position on map. Expeditious and efficient data storage and retrieval are

essential for a device whose storage capacity is limited by its miniature nature.

Android platform provides a SQLite database which is lightweight relational database for each individual application. The Android applications can take benefit of this well managed relational database mechanism to store data secure and efficiently. It supports applications and services designed to run inconspicuous in the background.

Background services make it feasible to create these invisible application components which perform automatic processing without lacking direct user effort. Background implementation permit the applications to become event driven and to support regular updates, which is perfect for monitoring game scores, market prices, generating location-based alerts, or prioritizing and pre-screening incoming calls and SMS messages.

Every mobile approach with a built-in reminder widget which is used to set the reminders for a particular time interval. REOMAP is an application which alerts the user regarding the reminder that is set with the event and its location, when the user is within the proximity of the destination. Motivation In today's busy schedule people usually tend to miss out on important tasks, even though they are nearby the place.

This leads to much kind of issues which makes people's life miserable. There must be some means which make the work simple and easy. Marketing people who have to travel wide range of areas to accomplish their tasks find it difficult remember all the areas. People suffering with amnesia, which is the inability of a person to remember things for long period of time. In this system we are going to implement the system which will work for determination of the user location in which app will determine the location and perform determination using SQLite database. The system will stored the information in SQLite and in background continuously scan the location. So that it will help us for determining reminder.

II. RELATED WORK

In the last few years, the smart phones (Android, Black berry and iPhone) have taken over the market of Nokia based Symbian Phones in India. And these smart phones come equipped with A-GPS functionality which provides the spatial coordinates of the user location.

A-GPS or AGPS is an acronym for Assisted Global Positioning System, improves the performance of standard GPS in devices connected to the wireless network. A-GPS enhances the location granularity of cell phones (and other connected devices) in two ways:

- By helping in searching a faster "time to first fix" (TTFF). Assisted GPS procure and reserve information regarding the location of satellites through the cellular network hence the information does not require to be downloaded via satellite.

- By helping position mobile device when GPS signals are not strong or not available. GPS satellite signals may be hampering by tall towers, and they do not puncture building inside well. A-GPS uses propinquity to cellular towers for calculate location when GPS signals are unavailable.

Mostly suited for mobile, tablets, laptop utensil, A-GPS takes reinforce from GPRS and at times, the service provider network information, to pin-point the current location accurately. A typical A-GPS enabled cell phone uses GPRS or other such Internet based data connection to build a contact with the assistance server for A-GPS. As this proficiency does not take into account the cell phone service supplier network completely, we only pay for the GPRS usage charges and nothing else.

A-GPS reduces the quantity of memory and hardware that must be integrated into mobile devices in order to provide GPS-quality device locating capacity as required by mobile devices. This keeps the mobile device simple and allows prolonged battery time.

GPS is real-time solution provider whereas Assisted GPS is not providing real time solution. The network usage is required every time we move out of the service area. It is useful only for locating a specific place in small area. There is no isolation in GPS and Assisted-GPS since the collaboration server knows the location of the device. There needs to be transmission over the wireless for processing of GPS information so this could be expensive.

III. PROPOSED WORK

In this system we are going to implement the system which will work for resolution of the user location in which app will determine the location and perform resolution using SQLite database. The system will stored the information in SQLite and in background continuously scan the location. So that it will help us for determining reminder.

The proposed approach is developed in Google Android platform. The android platform was chosen to utilize the user friendly features of android and this work used the Google map API as the backend search engine. In Android, every application executes in its own process, which gives better performance in security, protected memory and other benefits. Hence, Android is responsible to execute and shut down accurately these processes when it is needed. It is important that application developers understand how divergent application components (in particular Activity, Service, and transmit Receiver) impact the lifetime of the application's process. Using these components incorrectly can result in the system killing the application's process while it is doing important work. To determine which processes should be killed when low on memory, Android places each process into an "importance hierarchy" based on the components running in them and the state of those components.

A foreground process that is required for what the user is currently performing. Various application components can cause its containing process to be considered foreground in different ways. A process is considered to be in the foreground if any of the following conditions hold, if an Activity is running at the top of the screen that the user is

interacting with (it's on Resume() method has been called). If it has a Transmit Receiver that is currently running (its BroadcastReceiver.onReceive () method is executing). If it has a Service that is currently executing code in one of its callbacks (Service.onCreate (), Service.onStart (), or Service.onDestroy ()). There will only ever be a few such types' processes in the system, and these will only be killed as a last resort if memory is too low that not even these processes can continue to execute. Generally, at this point, the device has reached a memory paging state, so this action is required in order to keep the user interface responsive.

A visible process is one belonging an Activity that is perceptible to the user on-screen but not in the foreground (its onPause () function has been called). This may occur, for example, if the forepart Activity is displayed as a dialog that allows the previous Activity to be seen behind it. Such a process is considered especially important and will not be killed unless doing so is required to keep all forepart processes running.

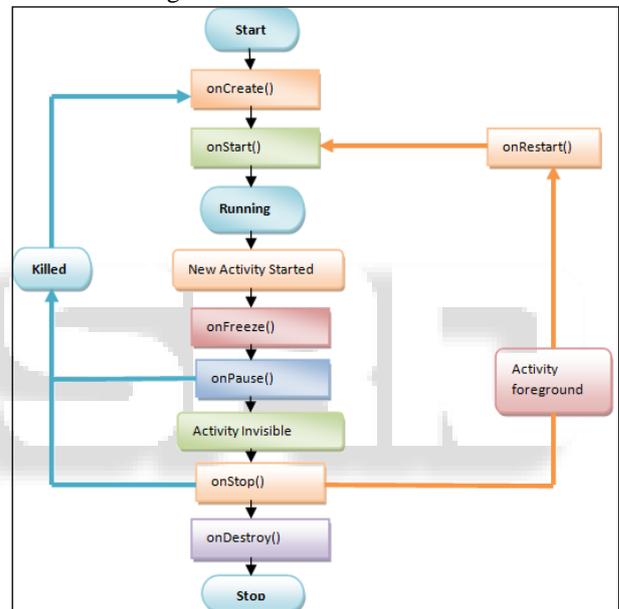


Fig. 1: Flowchart of Location based Smart Reminder System

A service process is one belonging a Service that has been started with the startService () function. Though these processes are not directly perceptible to the user, they are generally doing things that the user stroke about (such as background video playback or background network data up download), so the system will always keep such processes running until there is not enough memory to keep all foreground and visible process.

A background process is one belonging an Activity that is not currently visible to the user (its onStop() method has been called). These processes have no direct collision on the user experience. Provided they implement their Activity life-cycle accurately, the system can kill such processes at any time to regain.

Memory for one of the three previous processes types. Usually there are many of these processes executing, so they are kept in an Least Recently Used list to ensure the process that was most latterly seen by the user is the last to be killed when running low on memory unit.

An empty process is one that doesn't hold any active application components. The only cause to keep such a

process thought is as a cache to upgrade startup time the next time a component of its application needs to run. As such, the system will often kill these processes in order to balance overall system resources between these Empty cached processes and the underlying kernel caches. The application mainly contains three activities that are represented with their particular algorithms.

- Set-Task
- Show-Task
- Background Process

A. Set Task Activity

This activity allows the user to set the task details like task name, task description, location and date. Once the details are entered it is verified to check whether the user has entered all the fields in the activity. If the user has left any one of the fields then a toast is generated which asks the user to enter the left out field. When the verification process is done user is alerted by a confirmation pop-up where the user can confirm about the reminder or else can go back and do required modifications. Later the task details are inserted into the application database. Once everything is done the process runs in the background.

B. Show Task Activity

This activity is used to display the entered task in the form of list view. The application initially fetches the data from the application database and lists it in the form of list view. The application provides 2 features

- LongClick
- Click

On LongClick, the user gets options to modify the task or delete the task. If the user chooses to modify then the set task activity is opened wherein the user can make necessary changes. If the user chooses to delete the selected task is deleted. All the changes are updated in the database and same is reflected in the list view. If the user clicks, a map view of the current task is displayed. Again the activity runs in the background.

C. Background Process Activity

The activities above discussed executes in the background. The applications uses the services provided for the background process execution and keep running without disturbing the foreground process. It continually checks for the pending tasks. If any tasks are available then it checks for the connection availability and GPS. If connections are available then it checks for the current location of the user. If connection is not available, then it alerts the user about the connectivity. If the user is in proximity then a notification is raised informing user about the task. Or else it keeps executing in the background. If no tasks are pending then the background process stops working.

IV. LAYOUT OF THE SYSTEM

As shown in the data flow diagram given below, the user will define the task and location in the application. The application will save the details of the location and task and save in to database. From database will then fetch the details of the location and task forwarded to it through the application. As soon as the application receives the response

from the database, it will produce a notification so as for the user to get the desired task result.

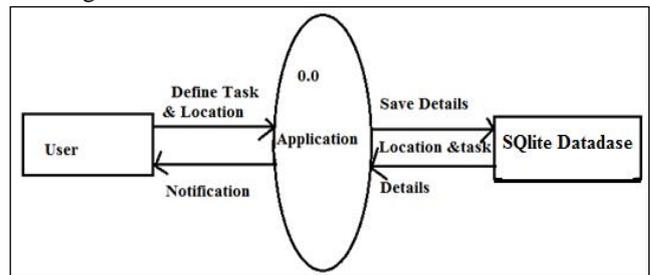


Fig.2: level 0 DFD Location Based Smart Reminder System

V. FUTURE SCOPE

The location based smart reminder system can be improved and extended in several ways. Here we explore some of these exciting possibilities and discuss our future plans for adding new features that build upon and compliment the current functionality.

In addition, Social networking features can help leverage the location based services, adding a whole new dimension of possibilities. For example, sharing of bookmarked locations between Facebook friends would make it easy for people to exchange addresses of popular restaurants, tourist attractions, hang-out destinations, etc. Bookmarks can also be extended to include geo-tagged photos, videos, reviews and articles. In addition, location based reminder system can be updated to show nearby friends on the map in real-time and send alerts when they are immediate vicinity, making it easy for people to connect with each other.

Location centric micro-blogging is another feature we can add. This will allow users to blog on websites such as Twitter, in real-time, directly from their phone and share location specific information such as photos and videos of the places they visit or publish reviews of restaurants, shops, etc.

VI. CONCLUSION

This work provides a viable solution to upgrade the features of the existing system using the technologies which are already available and reducing the data charges making the application available to the users. Implementation of the GPS services, which provides an accurate route detecting technology makes the system most reliable. Reliability and reduced number of false positives means greater acquisition by the users.

Here we are using an Android Smartphone which is widely in use around the globe. Thus we also combine the advantages of Android in our application. Each Android phone provides the Global Positioning System services along with Global maps and the navigation features among particular areas, thus we make complete utilization of it to detect the locations dynamically all over the globe.

Android has a very secure software stack for mobiles and is very reliable, thus making our project highly reliable. The proposed system provides an effective and efficient way of using the application without any complicated user interfaces. The user friendly interface, non-intrusiveness, reliability and cost effectiveness makes it affordable and user-friendly.

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