



LOCATION BASED TASK REMINDER USING GOOGLE API

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Abstract

For human beings it is not possible to remember all the things all the time. To make things easier to remember alarm systems are used. These alarm systems can be found in all types of phones. Earlier alarms were time based so they were not much helpful to remind people tasks at particular location. To overcome this drawback of time based reminders we created a reminder system which is location as well as time based. This system takes advantage of Google maps API which can be found in any latest smart phone.

Key Words: Android Application, Google Maps, GPS, Task Reminder

1 INTRODUCTION

Android is most used mobile operating system. As it is an open marketplace, developers can easily distribute their application on Google Play Store. There are millions of applications available on Google Play Store. Users can easily download and use these apps. Application which can be used as an alarm is a native application which is in-built in smart phone. Such application cannot help much as they are just time based. When location based tasks to be done can no more used. For such scenario, reminder systems which can remind you task near particular location are highly needed. Our Android application use Google Maps API to take the user's current location. To take the user's current location, GPS is used which comes in every smart phone. Our system takes user current location and compare with the location of task which is saved in the database. If the location matches it triggers a notification. To use our application, a smart phone should have reliable internet connection and GPS system on.

2 SYSTEM DESCRIPTION

Following section contains the overall description of our system. It consists of technologies used in project, system requirements while developing project and actual screen shots of project.

3 PROCESS DESCRIPTION

A. Technologies used

- **Android:** Nowadays mobile phones are very essential part of our life. These mobile phones come with different operating systems like Symbian, iOS, blackberry, windows, android etc. For our system, the operating system we are working on is android. As Android is open source and most used operating system we preferred to develop an application system for android.
- **Global Positioning System (GPS):** The Global Positioning System (GPS) is a technology which is used to locate the

person, device, car etc. The location is given in the form of coordinates. Main advantage of using GPS is that it comes in-built in mobile phones; there is no need to carry special hardware for that. Also the accuracy of GPS is higher than that of cellular technology. In our system, we have used GPS to take the location of tasks user want to create also to take the current location of user. Google map API can be used to take the coordinates from map which is a free service provided by Google.

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B. Tools Used

- **Android Studio:** Android Studio is the tool or software used to develop android applications. Android studio is available on many operating systems like Windows, MacOS, and Linux based operating systems like Ubuntu. It provides support for languages like Java and Kotlin. The current stable version is 3.1 released in March 2018.

C. System Screen Shots

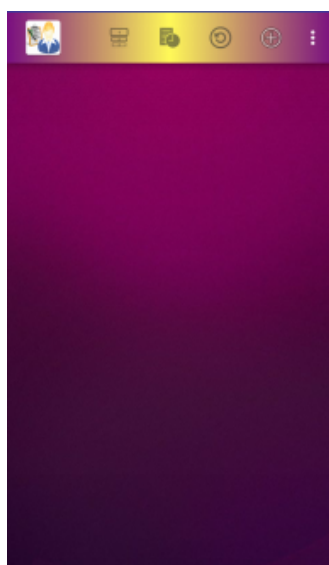


Figure 1:

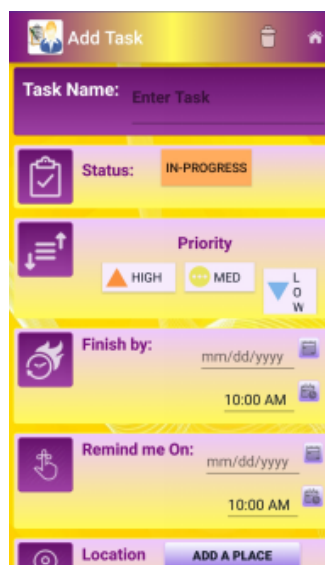


Figure 2:

These are four screenshots of our project:

- Fig.1 is home screen of our android application. It contains Action Bar. Action Bar includes five options and these options are priority, date, refresh, edit and uninstall. Priority option is used to list all the tasks with high priority first. Date option list tasks by date. Refresh option is used to refreshing the page and shown new list. Uninstall option is used to uninstall application from mobile phone.
- Fig. 2 and Fig. 3 are screens for adding tasks. For adding tasks there are different fields and these fields are task name, status, priority, remind me on and add place. Task name is anything that user created for its reminder. Status is current status of task, it can be in progress or done. For adding location add place button is provided on screen.
- Fig.4 is a screenshot for modifying task. User can modify task name, priority, status, date, time and place.

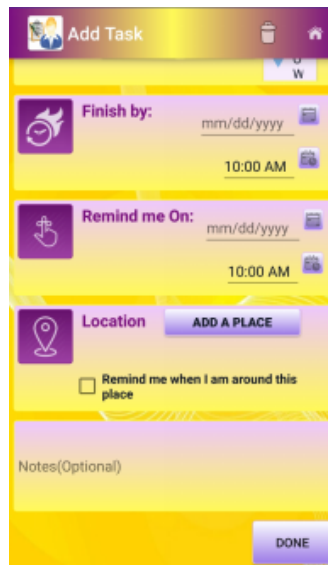


Figure 3:

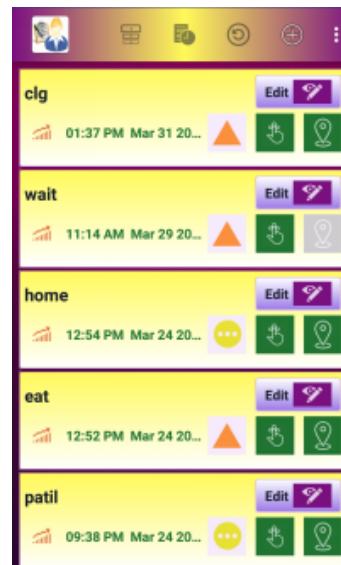


Figure 4:

D. D.System Features

- System is developed using android API 27.
- It is compatible with the android version Marshmallow 6.0 and above.
- The task can be prioritized as high, medium and low.
- If multiple tasks are associated with same location, while giving notification higher priority tasks will be shown first.
- If the particular task is to be done on regular basis then we can set the task for long duration by setting the finish date.

4 MATHEMATICAL MODEL

Let S is Location Based Task Reminder Application
 $S = \{S1, I, Function, O\}$

$S1 = \{Android_phone_GPS, Google_maps_API\}$
 $I = \{Name, Description, Priority, Status, Place, distance, time, date\}$
 Name= Task name
 Description= Task Description
 Priority= Priority set by user
 Place = User interested places
 Distance= Distance set by user
 Time= Time set by user
 Date= Date set by user
 Priority= {L, M, H} where
 L=Low priority
 M=Medium priority
 H=High priority
 Functions = {AddressToLatLng (), StartGeoFencing (), sendNotification ()}
 AddressToLatLng() = Function to calculate the latitude and longitude of the location.
 StartGeoFencing() = Function to create virtual Geographic Boundary around the location.
 sendNotification() = Function to send notification to the users.
 O = Output

5 CONCLUSION

Our Android Application system is location and time based reminder. Application can be used to store all the task of user into system with the information of time and location. User will be notified when he is near the location, provided that GPS and internet connection is on.

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