MEMENTO- Location based Voice Reminder

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Abstract

MEMENTO, the location based voice reminder application helps the user to set a reminder, which will be triggered when he reaches the specified location. The main motive of our app is to help the Alzheimer’s patients in their daily life. The blind also can avail help from the app as it helps the blind to identify the place thorough its unique text to speech algorithm. A text to speech converter is used so that the user just has to enter the required message. The user tags the locations using the Google Maps API. Then, he creates reminders for the tagged locations and when he gets close to this location, the system notifies the user.

Keywords: Location based reminder, GoogleMaps

I. INTRODUCTION

A location based reminder application Memento, enhanced with various location tagging options using Google Maps API is proposed. Main purpose of this application is to allow users to create reminders based on the location besides time and to notify them with those reminders automatically. In terms of ease of use, a hybrid structure consisting of various components is formed for location tagging. First of all, the user tags the locations using the applications such as Google Maps and the embedded sensors of the Android device. Then, he creates reminders for the tagged locations and when he gets closer to it, the system notifies the user. Our application is separated from similar applications with its enhanced location tagging feature. The usability test results indicate that MEMENTO is an effective location based reminder application.

Combination of location and time information may also be useful to remind users. For instance, paying the bills to post office late at night would not be possible. In that case, the user expects not to be notified even if he is close to the post office at night. Therefore, a time-based filter may be required in addition to the location-based reminder. Recently, many location-based applications have emerged whereas each has some missing features.

The tagged location coordinates may be more inaccurate than the one obtained using GPS technology. Furthermore, this application only allows location based reminders and does not allow filtering based on time.

II. SYSTEM ARCHITECTURE OF MEMENTO APPLICATION

The application consists of three major components namely location tagging manager, reminder manager and notification manager. The most important advantage of MEMENTO application is that it provides various location tagging opportunities based on the needs of the user. It supports location detection and tagging via Google Maps.

The system architecture of Memento consists of three major components namely:

1) Location Tagging Manager
2) Reminder Manager
3) Notification Manager

The application runs on an Android device, which receives inputs from the sensors GPS and Wi-Fi/Cell ID. The application also takes input by using the Google Maps API. In order to save the location information and required parameters, the application interacts with the SQLite Database. Then, the Location Tagging Manager saves the obtained location information into the SQLite database. Reminder Manager is used for forming the features of the reminder (content, time, etc.) and saving database. Finally, Notification Manager enquires whether there is a condition to alert or not. It gathers the current location information via GPS and checks whether a reminder exists for the current location.
Location-based services (LBS) are a general class of computer program-level services that use location data to control features. Location-based reminder allows users to create reminders based on the location besides time and to notify users with those reminders automatically. Google Maps is a desktop web mapping service developed by Google. It offers satellite imagery, street maps, 360° panoramic views of streets (Street View), real-time traffic conditions (Google Traffic), and route planning for traveling by foot, car, bicycle (in beta), or public transportation.

Most of them allow the users to only add reminders to previously tagged locations. Moreover, since these applications use mobile network’s cell id information to tag a location, MEMENTO embodies all of the missing features of current applications and provides various location tagging options.

III. SYSTEM DESCRIPTION

The main processes occurring are as follows:

A. Location selection

The user selects the required location with the help of Google Maps. Current position of the user is first obtained with the help of a location tracker. Messages are being added to the tagged locations. Corresponding latitude and longitude values retrieved from the maps.

B. Text to speech converter

The entered text message is being converted to a speech format and its being recorded. When the user gets around of distance of 2 kilometers from the tagged location, the speech is made to sound to remind the user.

C. Distance calculator

The latitude and longitude values from the location tracker are being checked with those obtained by user selection. Thereafter these two values are being mapped and verified using a distance calculator. Once if they differ by a distance of two kilometers, the text to speech converter sounds its output which is the stored reminder.

D. View and Delete reminders

The stored set of reminders is being listed one by one. Only those distances above than 2 kilometers are shown in the list. A delete option is used to remove the previously set reminders.
IV. IMPLEMENTATION

We developed the prototype of the MEMENTO using Android Studio. Android Studio is the official IDE for Android app development, based on IntelliJ IDEA. For getting the maps, the Google Maps API is used. We use SQLite database for the storage of message, latitude and longitude.

V. CONCLUSION

We propose MEMENTO as a reminder application on Android OS. MEMENTO is location based voice reminder application enhanced with various location tagging options. It creates reminders based on the location besides time and to notify them accordingly.

REFERENCES


