ABSTRACT: In present day, Location-Dependent Information Services in native language is a basic necessity among mobile users. Mobile phone users have started using their phone not only to communicate but also to access the information they need from every place at anytime. Now the prime challenge is to provide these location based services proactively in the user’s own native language. In this paper, we develop an android based mobile application to provide location-dependent and context aware services proactively, which are always relevant to the user’s context to provide a complete satisfaction of Location-Based Services in Tamil. The services are based on the location of the user, the activity that he is involved in at a particular instance (based on user’s daily planner) and the time at which the data is retrieved.

Keywords: Location based services in Tamil, Location Dependent Queries, Mobile computing, and Mobile communication.

I INTRODUCTION

Mobile phones have become a common and an unavoidable device to the people all over the world. Over six million people in the world are using mobile phones and the count is increasing day by day. Among the mobile phones, Android operating system which was developed by Android Inc. is fast developing and more appealing to the users than any other mobile OS. Android Smart phones had the features of Personal Digital Assistant, compact digital camera, GPS facility etc. More than just communicating, smart phones have another side- which provides the Location Based Services to the user. In this fast moving world, using the applications in android, people can find the directions to any place, just by sitting in any location through mobile phone. For example, we can find the route from your college to your home. The corresponding application neatly list outs the direction to walk. Also, several day planner android applications are available in English. They help the user to plan their day to day activities and get a reminder at that time. But the most of the application available presently are available currently are in English. This is a biggest disadvantage as a common man who could not understand English cannot use the application. So the biggest challenge for us is to develop an android application for an android phone to provide the Proactive Location Based Services in Tamil language to the users. It is discussed detail in this paper.

II RELATED WORKS

Several features are available in smart phones such as using Global Positioning System (GPS), several mobile applications, compact digital cameras etc. The use of GPS to locate the current position of the user using satellites in mobile phones has been described briefly in the paper [5]. Since the GPS facility has to be turn on, people worry about the battery life of the phone. The energy efficient position tracking is discussed detail in paper [3]. The Location Based Services based on GPS and Google maps are provided to the user via applications helping the user to know their exact locations. It is discussed in detail in paper [2], [4] and [6]. Also there are certain applications which use the Location Based Services to help the users during emergency. It is discussed in paper [1].

The shortcoming of all the above models is that none of them were implemented in the user’s native language. They were all provided in the global language English. We wished to overcome this shortcoming. So the android application which we developed provides “Proactive Location Based Services in Tamil” to the user. Translation from English to Tamil is discussed in paper [7]. This application is the real need for the people of Tamil Nadu as smart phones usage is at its peak among the people of Tamil Nadu.

III SYSTEM DESIGN

The process that happens within our system is as follows: The user enters his/her activity he wishes to perform in Tamil. We search for the key term in the activity mentioned and we start the service. Once the specified time, mentioned by the user comes, the current location of the user is obtained by the use of Global Positioning System (GPS) facility available in the mobile and the key term is passed as a query to the Google Maps and the nearby locations that match the domain specified by the user is retrieved. The retrieved queries are transliterated into Tamil language and delivered to the users. Thus Proactive Location Based Services are provided to the user in Tamil Language.
When the users press the danger button, a text message is sent to the people whom the user has stored in our application that he/she is in danger.

**IV IMPLEMENTATION AND RESULT**

“A successful person is one who manages his activities”

In the android application which we develop, there is a day planner which the user can use to manage his day-to-day activities. For example, the user can enter that he wish to watch a movie and set the time as 4 pm. The application gives a remainder to the user at 4 pm reminding him to watch movies and also provides the nearby cinema theatres where he can watch the movies. It is achieved by the help of using Global Positioning System (GPS) facility available in the mobile phone and using Google maps. All these services are provided to the user in his native language, here taken as, Tamil.

In the android application which we develop, we provide three options to the user:

1. The day planner (With Remainder)
2. Search
3. Help during danger
A. THE DAY PLANNER

In the busy world, we may forget any small job; say like buying a pen, due to other pressure or tight job schedule. It would be helpful for any one of us to remind us on our daily activities. It helps us to keep track in time and manage our day-to-day activities. Planning the activities make a one perfect. The ‘Day Planner’ facility in our android application helps the user to serve this cause. As can be seen in figure 3, when he/she enters the screen, a database is maintained that knows whether the user has already set the plan or he enters freshly. Based on that if he enters freshly he is redirected to activity mentioned in Figure 4. Thus he can set his plan and time here. Also the user can enter the distance range within which he needs the result. It commences the background service of the application.

When the time set by the user has come, the android application provides a notification message to the user along with alarm notifying the activity which he/she has planned. Additional to these using LBS, the application lists out the nearby location based on the users requirements. If the user has set “To buy a pen” in Tamil at 10 am, then our application provides a remainder to the user and listing out the nearby stationery shops nearer to the user at his current geographical position. It also provides the additional functionalities such as providing the direction from the user's current location to the spot they wish to
go. It is done using Google Maps. We also provide options for the user by which he can call or text the spot which he/she wishes to go. It improves the communication facility. It is mentioned in Figure 6 to Figure 14.
In case if the user had already set the activity, and then, based on the value from the database, he is redirected to the activity shown in Figure 17, where he can Edit his plan, View his Plan and even Cancel his plan.
B. SEARCH

Instead of setting remainder and getting the locations by setting the day planner, the user may also come across a situation where he needs to search for some domain from his current location. It can be done easily using the search facility available in our application. The user can enter the domain he wishes to search and get the locations nearby which matches to the domain using the Global Positioning System (GPS) facility in his mobile. The domain options we provide to the user are restaurant, educational institutions, libraries, parks, stationeries etc…. Using this way the user can easily get direction to the spot he/she wish to go using Google Maps, contact the spot directly via his mobile by making call or sending a text. It is described in Figures 23 to 28 and Figures 8 to 16 (Shown above).
C. HELP DURING DANGER

Today’s world is filled with danger and risk everywhere. People need to safeguard themselves in every situation. If there is an application available for them to ensure their safety, it would be a boon for him/her. Here the primary objective of this option is to provide safety at any time to the user by getting help from his close friends/relatives. The user can feel relaxed and safer at any place. Here, using the danger help option in our Tamil application, the user can save five mobile numbers of people which he wishes to contact during danger. When he/she presses the danger button (Available in the First Activity), a message is sent to all the five people and also to the nearby police station that he/she is in danger and also with the current location where he/she is. By receiving the message the message receiver can take any immediate action to help our application user, thus rescuing the user from danger. The user can also modify the mobile numbers he/she has set at any time. It is shown in figures 29 to 33.
V CONCLUSION

Thus the project implements location based services proactively in the user’s own native language-Tamil to help the people who are not much familiar with English. In future, this application can be developed to support multiple languages. By developing this application, it also increases the people's interest towards Tamil computing.

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