

Inform Me- Family Location Tracker App



Venkata Siva Rao.A, John Samuel , Divya Priya, B. Kavya Sree

Abstract—*Inform Me is an android mobile application which is designed to track the location of family members or anyone in general in real-time, without worrying about their whereabouts in amidst their busy life. Also, you can know their battery status provided they have agreed to share location with you, and have installed inform me application on their phone. People can save daily routine places in the app like college, workplace, school, etc. In this application, the family members get notifications whenever someone in the family has entered or left the saved location. Messaging tool in this app allows you to chat with the family members whenever you are at a new place irrespective of the places you saved in the application. There is also a panic button that will send a message to all the family members in case of emergency.*

Keywords—*location tracker, mobile application, android, Google Maps*

I. INTRODUCTION

Smartphones have completely changed the way of our lifestyle, daily we use smartphones for many purposes and we didn't even realize how smartphone is influencing our lives as we know the smartphone technology has completely revolutionized.

Inform me is an android mobile application which is designed to track the location of other people in real-time, provided they have agreed to share location with you, and have installed inform me app on your phone. With Inform Me application you can also know the percentage of the battery life of your family. People can save daily routine places in the app like college, work place, school etc. In this application the family members get notification whenever someone in the family has entered or left the location. Messaging tool in this app allows you to chat with the family members whenever you are at a new place irrespective of the places you saved in the application. There is also a panic button that will send message to all the family members in case of emergency. In case of no internet connection SMS feature is used to send the exact location to the emergency contacts.

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* Correspondence Author

Venkata Siva Rao.A*, Department of Computer Science and Engineering, MLR Institute of Technology, Dundigal, Hyderabad, India. Email: venkatasivarao.alapati@gmail.com

John Samuel, Department of Computer Science and Engineering, MLR Institute of Technology, Dundigal, Hyderabad, India. Email: johnsamuel961966@gmail.com

Divya Priya, Department of Computer Science and Engineering, MLR Institute of Technology, Dundigal, Hyderabad, India. Email: divya.degala@gmail.com

B Kavya Sree, Department of Computer Science and Engineering, MLR Institute of Technology, Dundigal, Hyderabad, India

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II. LITERATURE SURVEY

A. Existing System

In existing system, with hectic schedules in our busy lives by managing the day to day for your family can feel like a full time job. We send constant updates of our whereabouts to our family members through messaging apps like Whatsapp. However location sharing through whatsapp lasts only for 8 hours and every day you need to manually share location to your family members.

B. Proposed System

We have seen many incidents that took place in daily routine to our family members whether they run out of battery in their phone and need help to send messages to their family Smartphones have transformed the way we live providing convenience to stay in touch with our desired people.

In the proposed system, Inform Me app helps to make sure the safety of our family members by sharing their location in real-time. Panic button is one of the main feature in Inform Me application which will help us to notify to the family members in case of any emergency. Daily routine places like college, workplace etc. are saved in the application and whenever any person has entered this location or left the location notifications are sent to the family members without constant updates through normal message apps.

III. SOFTWARE AND HARDWARE REQUIREMENTS

A. Android Studio

Android Studio is the official integrated development environment (IDE) for Android operating system by Google, which is built on the software named as JetBrains' IntelliJ IDEA and designed exclusively for Android development.[1][2]

B. Firebase

Firebase is a mobile and web application development platform acquired by Google. Here in this project firebase is used for database storage, authentication and also for notification and messaging services. Firebase Cloud Messaging is a platform used for sending messages and notifications used in android for developing mobile applications.[3]

Firebase Auth is a service which authenticate users. One can use different social media sign-in features by creating their API's and mentioning the in the manifest file of the android project. Most commonly used social media sign in features are Gmail, Facebook. In addition to that, it includes a system where the developers can be able to authenticate the user with email and password login stored in the Firebase.[3]

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Firebase provides a special service known as realtime database and also the backend. Using API the developers can use the data across the clients which have been stored in the Firebase cloud. Client libraries are provided by the company which enable integration with the Android applications. The developers can access database through the REST API for different frameworks. The REST API is used for creating HTTP connections and for push notifications.[3]

And also Google Maps API's are used in this application. For hardware side the requirements are internet connection, smartphone with 4GB RAM and also it should support GPS.[4]

IV. SYSTEM ARCHITECTURE

Irrespective of the application which belongs to industry, the design of a software is highly crucial and important task for a project. In all of the projects the system architecture is the first step in the phase of development. The designers of the application need to design the model of the proposed system. The next step is to define the requirements which has been analyzed and specified. System design is an important feature followed by code and testing.

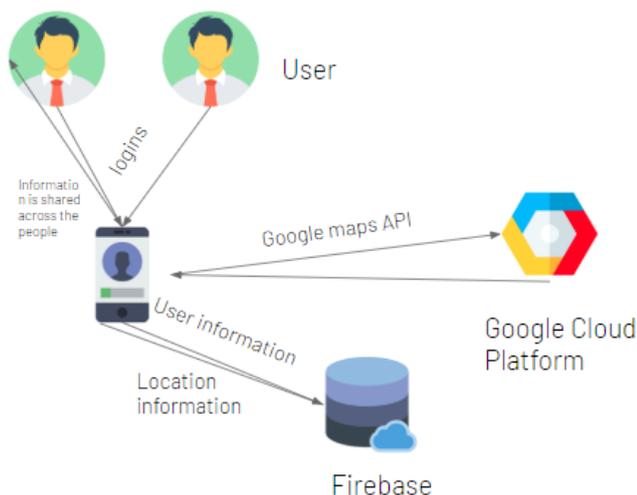


Fig:Application Interaction diagram

The system architecture of this mobile application is in such a way that the many users can interact with each other after adding them to our application by sharing the location. Here we are using firebase as the database which also helps to send notifications instantly. User module has access to add people into their circle to share location only for their desired people. Admin module has the information of the user.

V. IMPLEMENTATION

In the midst of the busy life of people, family members feel like a job to know whereabouts about the people. By this application one can know the details about their location and make the family keep bonded without worrying by getting/giving constant updates through messaging apps.

A.Modules

User has the capability to register with respective details like username, email, password and mobile number. After login with the details user need to give permissions to allow the access to the location and also the contacts. Later the user can add desired contacts into the application. Here they can add only the contacts that has been already registered for the application. Users can add their daily routine places in 'saved places' like college, home, workplace etc.

When someone added their contact in the application they'll notified saying that a contact has added and displays the contact number. The other side user can have access to their saved places and whenever someone left the place all the added contact members get notified that the user has left the place and also whenever someone entered a saved place they'll get notified that they have entered the place.

When someone is not around the saved place they'll get notified that they are nowhere near the saved place. User has the capability to message with the other users i.e the added contact members through group chat feature. They can update whenever they are not around the saved place. Emergency feature is another feature for the user when they use the panic button then all the added contact members will get notified saying that the person is in emergency. Also they have access to all the family members battery percentage.

In the database module, admin has only access to the database where he can see all the confidential details of the user in the firebase such as their email, password and also their saved places. All the registered users are saved in the database and that's how the contacts members are verified before adding them to the application.

A.Basic Implementation of application

- Designing the layouts and describe activities of the application

Design all the required layouts in the android studio. Here we need to design layouts like splash screen, login and registration for the users, Emergency, map fragment and saved places layout. And also all the required buttons like 'add contacts' and also a layout to display all the added contacts with their battery percentage. Floating button for group chat feature and also message layout to chat with other family members.

- Designing firebase database and also notifications

All the registered users database is stored in firebase and also all the notifications for the users should be triggered when someone added their contact into the application and whenever someone entered/ exited from or to the saved place. Whenever new message is sent notification is triggered to all the saved contacts stating that there are new messages in the group chat.

VI. SYSTEM TESTING

In this phase, a comprehensive investigation is conducted to check for mistakes in the project and to report the stakeholders by giving the information of the quality. For any software, "Testing" is an important phase since it represents the ultimate review of specification, design of the application and also the coding. The main strategy of the software testing integrates test case design methods which will lead to successful construction of the application. The underlying motivation of testing is to check the application quality with the methods and cost in mind.[5]

A. Test Objectives

- All the functions should work properly.
- Notifications should be triggered at right time.
- Location should be marked properly on the map fragment and also the added saved places marker.
- Messages should be displayed to the family members.
- Battery percentage should be displayed correctly.
- Geofencing code should work as mentioned.

B. Test Cases

For this application various test cases have been implemented one of them will check if all the units are working properly. Here the emergency fragment and chat fragment should work individually and also as a whole unit. The approach is to use the panic button and also from the other phone send messages to the family members and see if the notifications are working without any crashing. Another test case if all the members in the application are accessing correct battery information. Here the alarm ready code is tested if the battery information is extracted correctly from and to the server

VII. CONCLUSION

Through this project we have implemented a mobile application that helps the people to know whereabouts of the family members in midst of busy life. Here in this application family members get notified when someone entered or left their daily routine places like college, workplace, home, etc. They can also get to see the battery percentage of the family member. And also with this mobile application you can get to chat with the family members through messaging feature without creating hassle by switching between the apps to chat with family members. Emergency feature is also an important feature in this application which helps in an emergency by sending notification to all the family members stating that he/she needs help. With all these features this mobile application will create an impact in family by bonding them through this application by knowing their whereabouts in daily life.

FUTURE SCOPE

In this paper the locations of the family members are integrated but if user want to add someone like friends then the family members privacy will be invaded. So in the future we can add circles where each circle is dedicated to different set of people like family, friends, colleagues etc.

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AUTHORS PROFILE



Venkata Siva Rao.A M.Tech working as an Asst.Prof in the Dept.of Computer Science and Engineering at MLR Institute of Technology had published research papers in the areas of Data Mining, Internet of Things (IoT), and Mobile Application Development.



John Samuel M.Tech working as an Asst.Prof in the Dept.of Computer Science and Engineering at MLR Institute of Technology had published research papers in the areas of Image processing and Artificial Intelligence



Divya Priya M.Tech working as an Asst.Prof in the Dept.of Computer Science and Engineering at MLR Institute of Technology had published research papers in the areas of Data Mining, and Internet of Things (IoT).