

A project report on

TrackIT

by

Chintan Raval (201702100410001)

Raj chauhan (201702100410041)

Harshiv Miyatra (201702100410095)

in partial fulfillment of the requirements for the degree of

Diploma
in
Computer Engineering
at
Uka Tarsadia University

Under the guidance of
Mrs. Krishna Patel



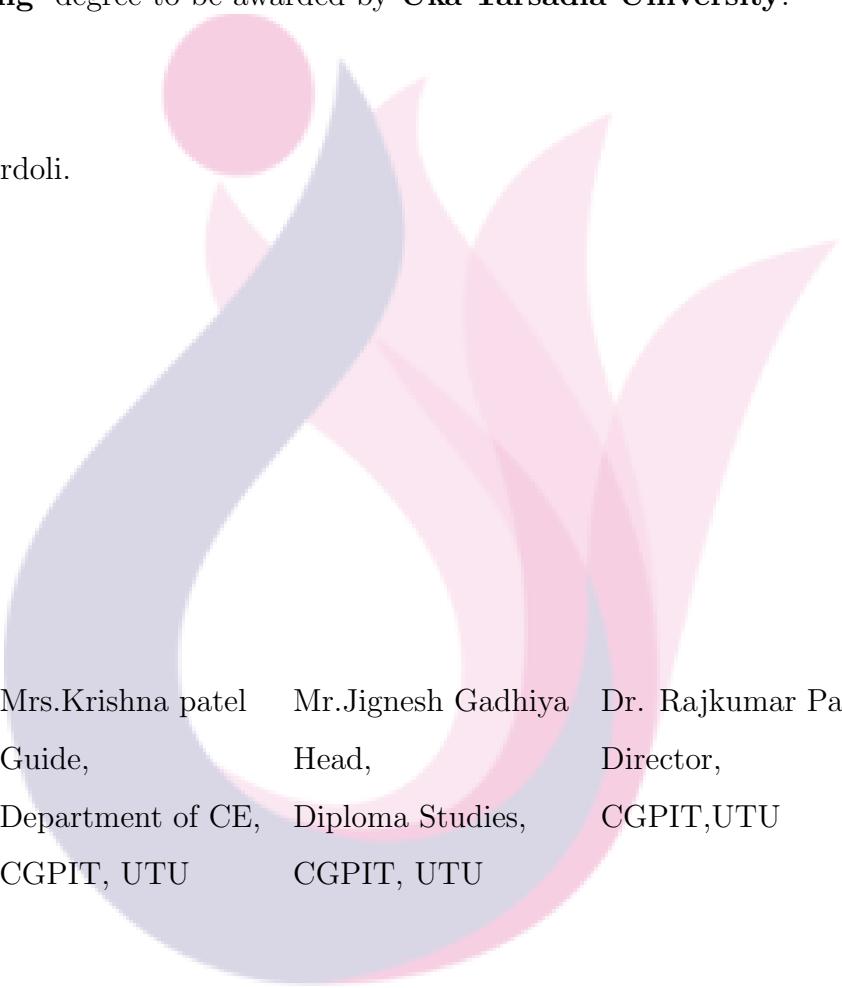
Department of Computer Engineering
Chhotubhai Gopalbhai Patel Institute of Technology
Uka Tarsadiya University
Bardoli - 394350.
July-2020

CERTIFICATE

This is to certify that the project report entitled “**TrackIT**” has been carried out by **Chintan Raval (201702100410001)**, **Raj Chauhan (201702100410041)**, **Harshiv Miyatra (201702100410095)** at **Chhotubhai Gopalbhai Patel Institute of Technology** for the partial fulfillment of **Diploma in Computer engineering** degree to be awarded by **Uka Tarsadia University**.

Date:

Place: Bardoli.



Mrs.Krishna patel Guide, Department of CE, CGPIT, UTU	Mr.Jignesh Gadhiya Head, Diploma Studies, CGPIT, UTU	Dr. Rajkumar Patil. Director, CGPIT,UTU
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Examiner's Signature

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Chintan Raval (201702100410001)

Raj Chauhan (201702100410041)

Harshiv Miyatra (201702100410095)

ABSTRACT

There is a new tracking system available for monitoring the moment of any vehicles, phones and person with the help of Tracking system. The system is called a global positioning system or GPS tracking system. This system provides the most required confidence and assurance of family members safety. The global positioning system that is now used in many Track any vehicle or any person with help of cellphone is basically developed on the principal of satellite technology. This system is used everywhere now including the military services, civil services and also for commercial usedes. In TrackIt its an android application is basically based on for the family security purpose. In TrackIt application is designed to track the family members through the devices. The application is made to Track the members or relatives in any part of specific location and with help of any devices, through this application it gives direct idea of any member's live location. In terms of security purposes it is very helpful. Reason to take this topic is for the Security purpose for family location tracking.

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Chapter 1

Introduction

1.1 Overview

This application is specially used to track a family member or friend's location. By using GPS it can be possible.

1.2 Problem definition

In many case we had seen that nay college student or person who lives far from his family or Traveling to another city doing a job in another city , so this application is designed for them so that their parents could trace their location check whether they are safe or not for a security purpose of student.

1.3 Scope

- **Boundaries :** The Boundaries is to send emergency call or text message if the user is in problem or trouble. When any person is in trouble or in any condition or in any situation then emergency message sending feature is made in this application.
- **Risk Factor :** The risk factor is when the user turn off the location in own devices then the other user can't track him/her. There is risk in this application as we discussed in above points suppose in any case device is turned off then it can't track the other user respectively.

Chapter 2

System Planning

2.1 Project development approach

Each project need to be developed with software model which makes the project with high quality, reliable and cost effective.

- Iterative model
- The popular iterative model gives an exact performance of the development of software as a life cycle. It primarily focuses on preliminary growth and design and then gains momentum slowly with more complexity as well as meet requirements until the final software is built entirely. So, basically, the iterative development model is an approach of segmenting any large software development process into smaller portions.
- Why we are using this iterative model because the iterative model is working on phases in this model first we have to complete one phase after that we'll move to the next phase. That's who we can give the flexibly to any project.
- Produces working system rapidly and before time throughout the software development life cycle and also it provide more and more flexibility and enhance based in requirements. It is simple to test as well as repair as small iteration.

2.2 System modules

System Module is a separate unit of software or hardware. Typically characteristics of modular components include portability, which allows a them to be used in a variety of systems, and interoperability, which allows them to function with the components of other systems. In this application there are two major modules are given below.

2.2.1 User

User will be able to track family members or friends location. They will be able to see each other's location and also able to send messages with the help of group messaging.

2.2.2 Admin

Admin will be able to insert, update and delete accounts and make major changes in the application

2.3 Functional requirements

In this application there are main four functional requirements which is given below.

- **Login:** The user is able to login into the application with the help of correct username and password.
- **Messaging:** In this application all the family members or group members will be able to send and receive messages in the group messaging option.
- **Real time Location:** It is the main component of this application with the help of real time location user 1 will be able to find user 2's location with help of GPS (Global positioning system).
- **Navigation:** In this application the user will also be able to navigate his own location if he/she wants to reach any destination.

2.4 Nonfunctional requirements

The Non-Functional Requirement are given below:

- **Portability:** This application should be portable on Android version after 4.1.
- **Security:** The person who has a correct user-name and password can only access their own Account.
- **Performance:** This Application requires High speed internet connection.
- **Reliability:** Due to the wireless connectivity reliability is not granted.

2.5 Timeline chart

2.5 Timeline Chart

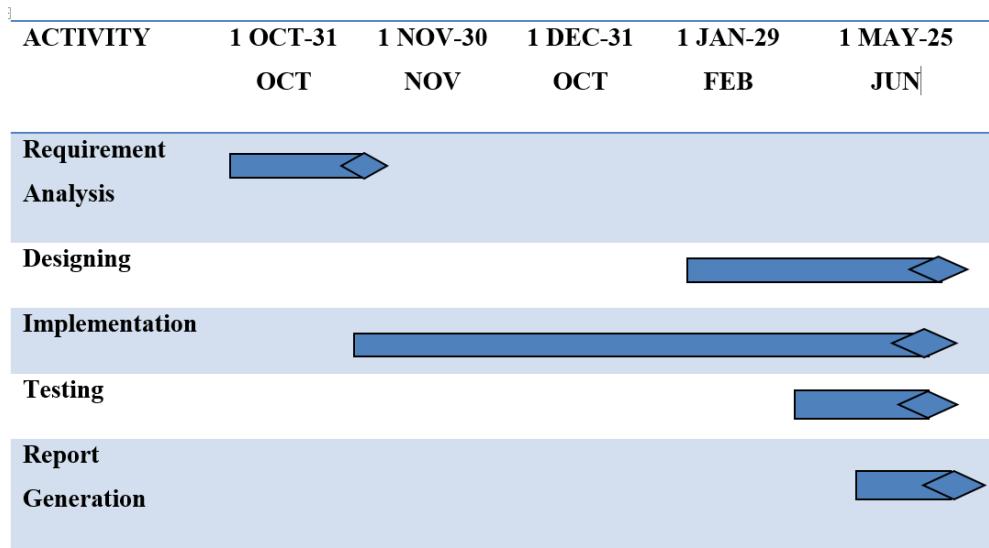


Figure 2.1: Timeline chart

Chapter 3

System Design

3.1 Use case diagram

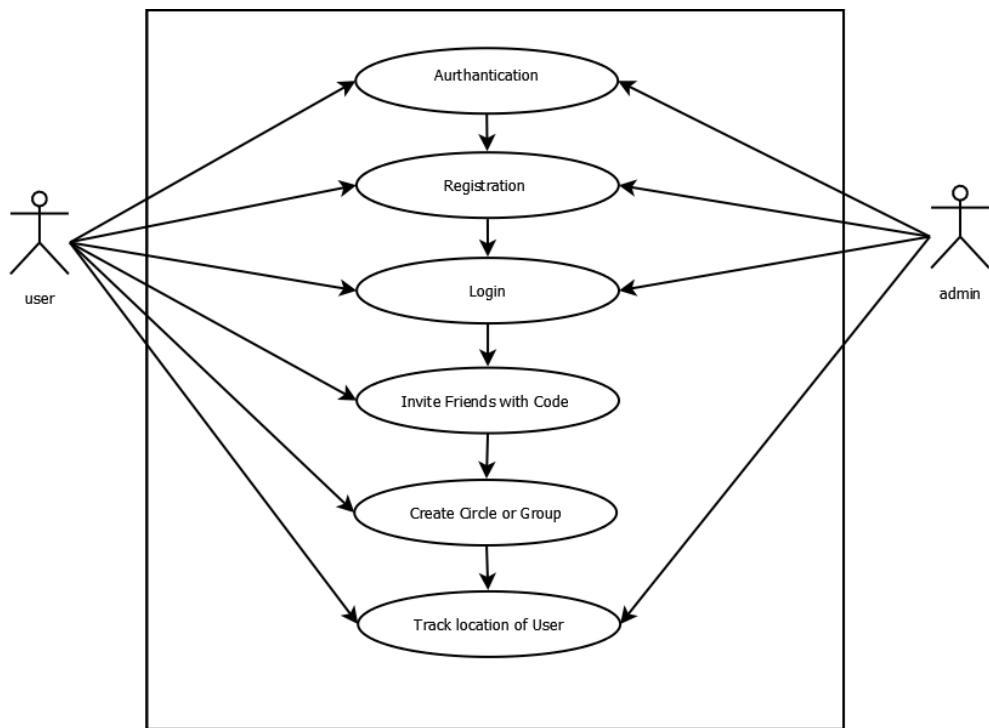


Figure 3.1: Use case Diagram

Figure 3.1 shows the use case diagram of our system. In this diagram first off, all user actor is generalized into three different actors. Where user1 can perform registration, login, find user2 and track their live location. In this diagram user1 can login, register, track live location, and send messages. This diagram shows if any three of actor is not authenticate then they can't access this system.

3.2 Sequence Diagram

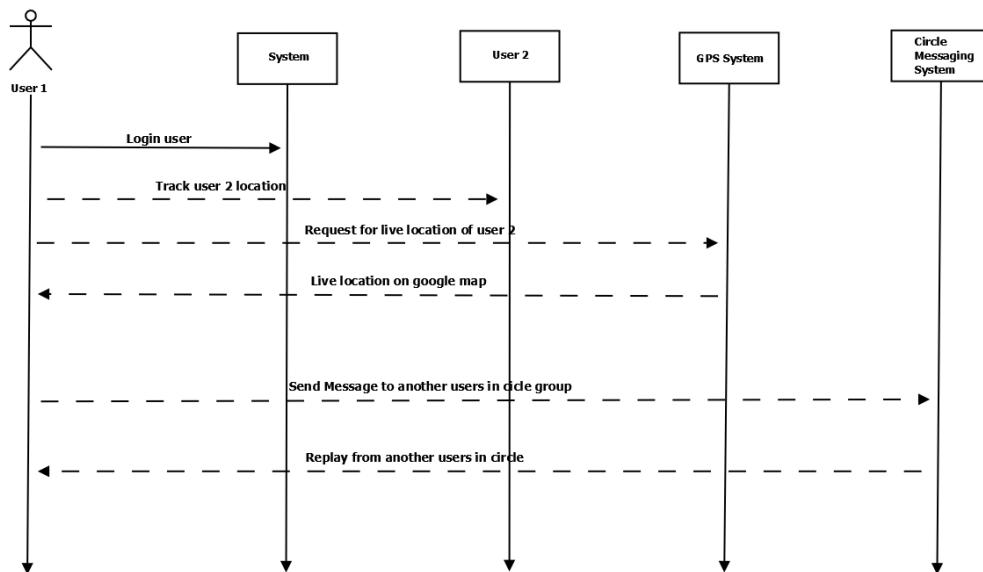


Figure 3.2: Sequence Diagram

In above figure the sequence diagram is shown where, the module called user1 and user2 and sector called System, GPS system, Circle Messaging System. Here, when user login, the system gives access to user1 and further process is shown. User1 can track User2 via sector GPS System.

3.3 Activity diagram

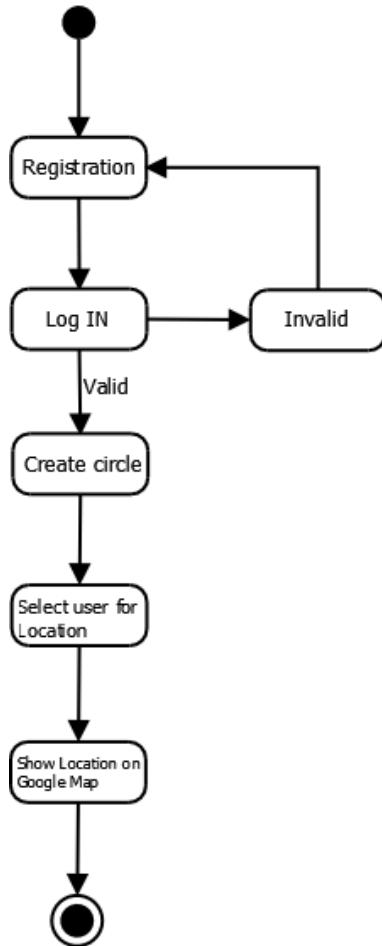


Figure 3.3: activity Diagram

Figure 3.3 shows the activity diagram of our system if user is not register into the system it will redirected to the registration page. If already register user can directly login into system. For new registration user has to enter all the details. If all the details are valid then the user directly redirect to the login page. If user successfully login with valid id and password it can continue to start tracking. Once both user connects than both can se their live location.

3.4 Class diagram

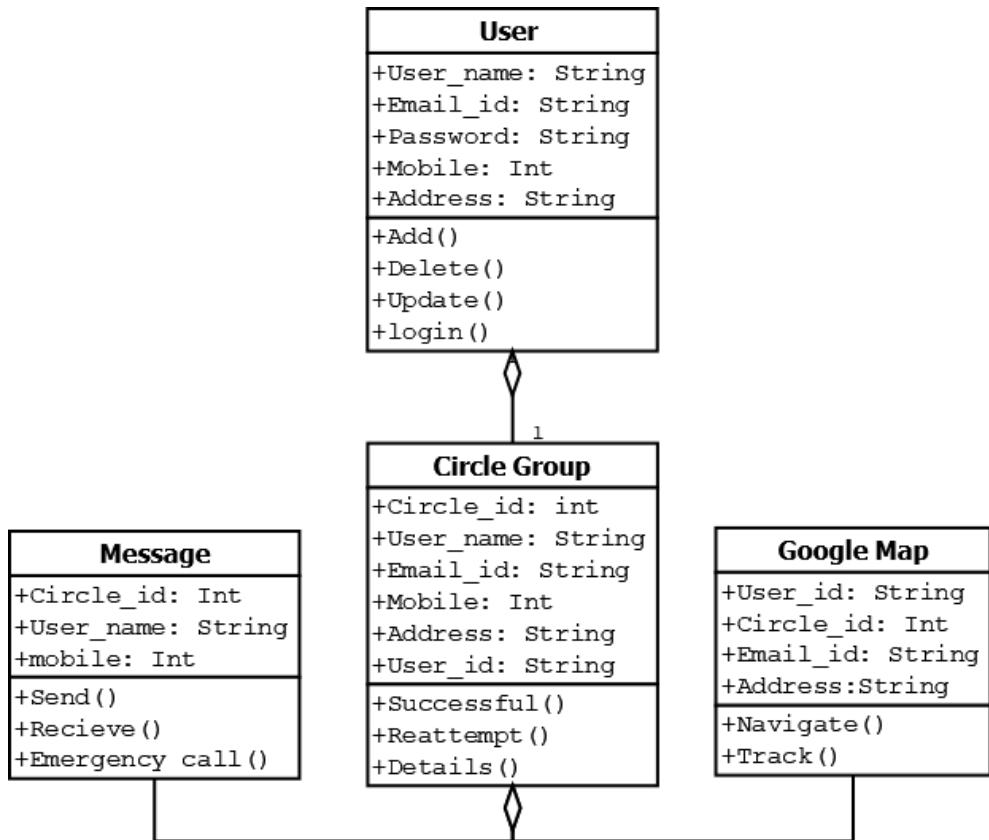


Figure 3.4: Class Diagram

Figure 3.4 shows the class diagram of our system that how many classes are used in this system. Here we are having four different classes. First one is message class. This class having five different data members and four different functions. Data members are Username, password, email-id, address. Four functions Users, Message, Circle group, Google Map. These all functionalities are performing by the user. Message class having three data member as user class but it also having three different functions. That functions are Circle id username email-id mobile Address user can send receive message with group messaging. These all functionalities are performing by users. Group Class having five data member as user class but it also having four different functions. That functions are Circle id with username mobile user can send receive message and also do emergency call. These all functionalities are performing by users. Google map

class having four data member as user class but it also having two different functions. That functions are Navigation and Tracking with user-id. These all functionalities are performing by users.

3.5 E-R diagram

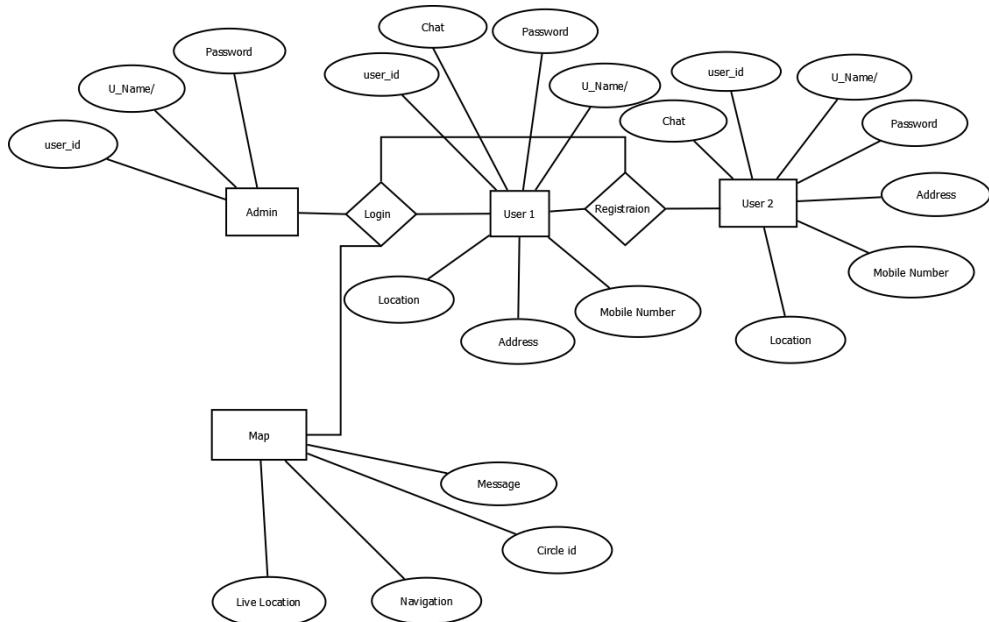


Figure 3.5: E-R Diagram

In ER diagram, Admin, user1 and user2 and the map is shown where the user 1 and user 2 are interacting with each other and the tracking process is shown, here in user1, user2 and admin the unique Id, username, password is shown. Along with user1 and user2 the mobile number, address, chatting, location access, circle Id is there.

3.6 Data flow diagram

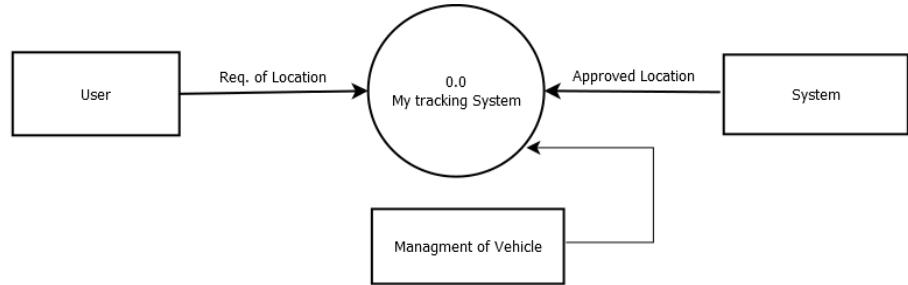


Figure 3.6: DFD Level 0

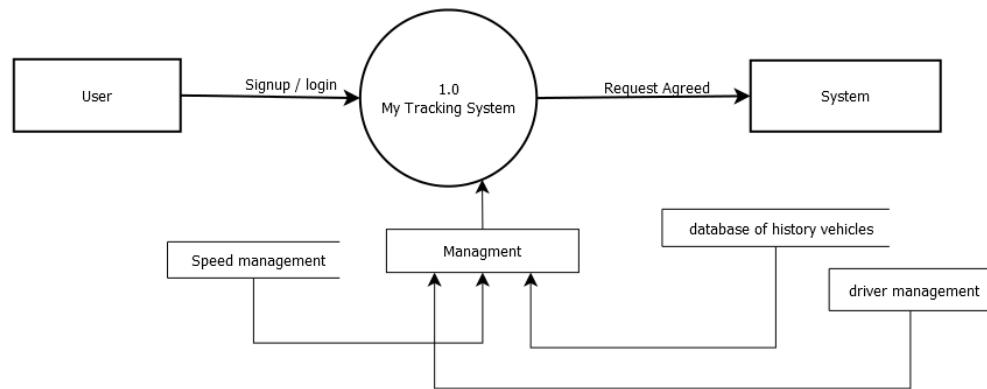


Figure 3.7: DFD Level 1

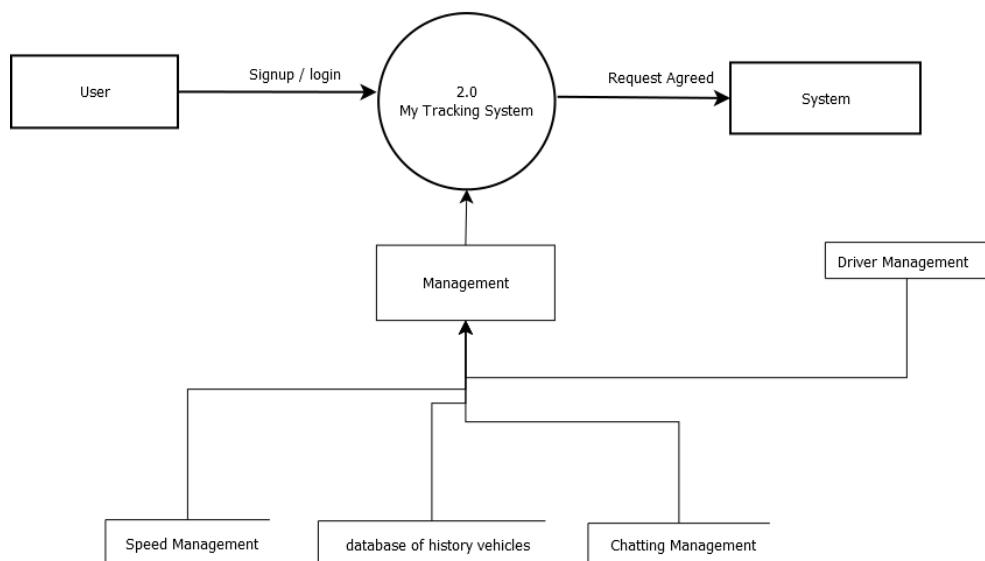


Figure 3.8: DFD Level 2

In DFD, We had done up to level 2, where in level 0 the user and system interection then in level 1 the user and system along with management, driver management, chatting management, creating database.

3.7 Database schema

Column Name	Data Type	Size	Constraint	Description
Email ID	VARCHAR	50	Primary Key	Username
Password	VARCHAR	50	---	Password

Figure 3.9: Child login table

Column Name	Data Type	Size	Constraint	Description
Email ID	VARCHAR	50	Primary Key	Username
Password	VARCHAR	50	---	Password

Figure 3.10: Parents login table

Column Name	Data Type	Size	Constraint	Description
Email ID	VARCHAR	50	Primary Key	Username
Password	VARCHAR	50	---	Password

Figure 3.11: Child registration table

Column Name	Data Type	Size	Constraint	Description
Email ID	VARCHAR	50	Primary Key	Username
Password	VARCHAR	50	---	Password

Figure 3.12: Parents registration table

Column Name	Data Type	Size	Constraint	Description
Name	VARCHAR	50	---	Username
Email id	VARCHAR	50	---	Password
Phone No	VARCHAR	12	---	Number

Figure 3.13: Profile-table

Chapter 4

Implementation and Testing

4.1 Hardware and Software Requirements

- **Hardware Requirement**

- Space : 512MB
- RAM : 2GB (Recommended or Above)

- **Software Requirement**

- Frontend : JAVA , Android OS : 4.1
- Backend : Firebase , Database.

4.2 Implementation screenshot and test case



Figure 4.1: screen splash

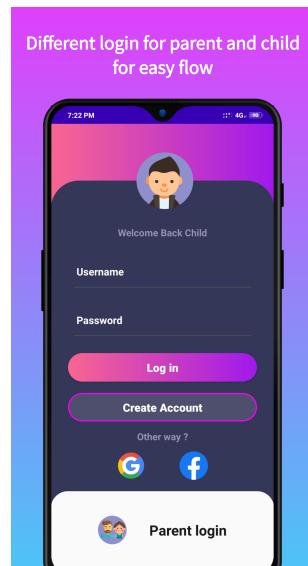


Figure 4.2: Child login

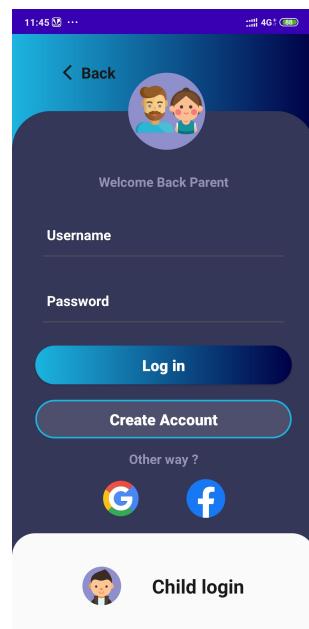


Figure 4.3: Parent login

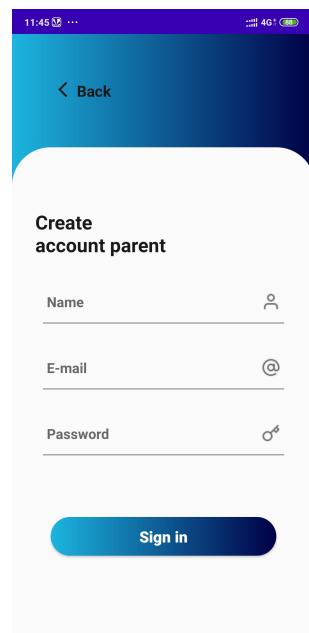


Figure 4.4: Create Account

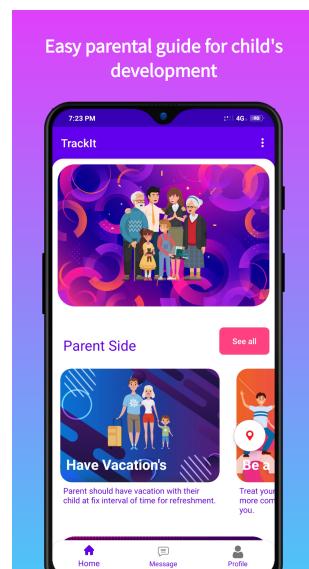


Figure 4.5: Home Page



Figure 4.6: Messaging Page



Figure 4.7: Profile Page



Figure 4.8: Select User Page

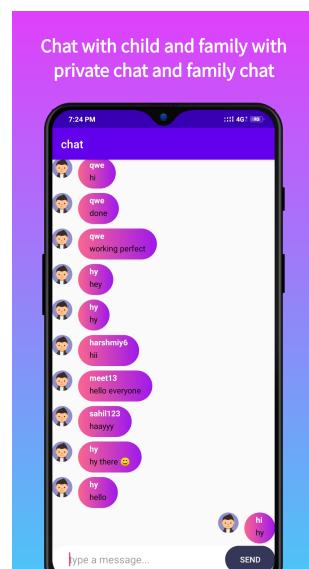


Figure 4.9: Group Messaging Page

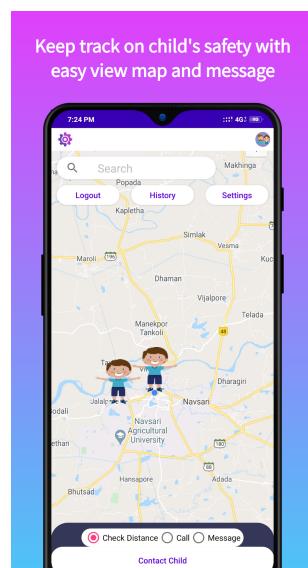


Figure 4.10: Google Map with live location

TestID	Case	Test Data	Expected Result	Actual Result	Pass/Fail
1	Login	- Internet Connectivity - Login ID - Password	If Login ID & password is empty or invalid and No Internet connectivity then dispay Error message otherwise login sucessfully	If Login ID & password is empty or invalid and no Internet connectivity then dispay error message.	Pass
2	Signup	-Firstname -Lastname -ID -Password -Email Address	If ID is unique and password is unique then successfully register.	If ID and password are correct and matched with firebase data then succesfully register	Pass
3	Google Map	- Succesful Login	If persent or child is succesfully log in then both will able to use google map.	If Login will be done succesfully then persent and child both will be able to use google map.	Pass
4	Tracking	Perent track child's location	If both perent and child is login with system then they will track there location.	If Persent and child is connect to the system then they track there live location.	Pass
5	Group Messaging	Perent & child connected to the system.	If both perent & child connected to the system so they send message to each-other.	If perent & child loged into the system so in the messaging section they will send the messages to each other.	Pass

Figure 4.11: Test Case

Chapter 5

Conclusion and Future Work

5.1 Conclusion

Here, by using this application (TrackIt) user1 can track user2 easily by live location and in case of family member any person can track their member. Through this application there is emergency service called emergency message where the user can send the emergency message in any serious situation.

5.2 Future work

The future work of our application is to complete emergency call and messaging services and secure location and messages.

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- [2] <https://www.javatpoint.com>
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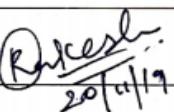
ANNEXURE

Chhotubhai Gopalbhai Patel Institute of Technology

Diploma Computer Engineering

Project Phase -I (020040520)

External Comments

Group ID:	1
Enrollment No:	201702100410001 201702100410041 201702100410095
Project Title:	TrackIt
Comments:	<p>→ Look on the Implementation</p> <p>→ presentation was good</p> <p>→ prepare the Datasheet of the system</p> <p>→ Focus on how to track a person?</p>
External Examiner Sign:	 20/4/19