CHAPTER 1: INTRODUCTION

1.1 Project Summary

Recent years, the use of mobile application has become popular. Mobile Application represents the excellent example of managing the online information in its best possible way. The cost includes the manpower uses, and the time issue. By using the mobile application, there is extreme flexibility in managing the data. In our day to day life all of us use mobile devices which include most of our day to day important data. But nowadays, cases of mobile theft have increased. So, we are trying to develop a mobile application through which users can prevent users device from being stolen and incase the device gets stolen then user can control his data and can prevent it from being misused as well as can find his device.

1.2 Purpose

The following are the purposes of our proposed system that are mention below: -

 To keep our mobile devices safe from being stolen.

 To provides different pre-protection modes to prevent mobile theft.

 To provide post-protection modes to protect our personal data and find device in case device is stolen.

1.3 Scope

We are going to develop a mobile application which will prevent our mobile device from being stolen and in case it is stolen then user can control what happens with his/her personal data, locate and find his/her device.

Table 1.3 The Scopes and Boundaries of Project

|  |  |
| --- | --- |
| Scope | To bring digitization in preventing and finding mobile devices in  mobile-thefts. |
| Modules | Modes to prevent mobile theft charging, headphone, pocket  detection), Modes to protect data and recover device in case of theft. |
| User | The system is going to be used by the Students, Employees, Daily  Commuters and every day to day mobile phone user. |
| Specification | We are going to make mobile application using Android Studio and  Firebase database. |
| Usage | This system can be used by day to day mobile user to prevent mobile |

|  |  |
| --- | --- |
|  | theft or to protect his/her data and recover device in case of theft. |
| Input | Applications takes input from mobile sensors and detects the theft  activity and when stolen user give inputs through sms commands which are in form of button to encrypt data, get GPS location etc |
| Output | The output will be alarm buzzer in case of unauthorized activity and  GPS location co-ordinates when GPS location is requested and acknowledgement when data is encrypted. |

1.4 Report Outline

Chapter 1: In this chapter the overview of the project and purpose & scope of the project is discussed.

Chapter2: This chapter show the literature survey made on the similar projects and systems to the project about to be developed.

Chapter 3: This chapter show the information about the technology which is used for the implementing to this project, information about planning and scheduling of this project. It includes different techniques for planning & scheduling. These techniques are work break down structure, pert chart & Gantt chart.

Chapter 4: In this information about software requirement specification of the project. It includes functional and non-functional requirement of the project.

Chapter 5: It includes the analysis of the system develop by the system developer. In that include the feasibility study of this system. Also include the diagrams like E-R diagram, UML diagram & USECASE diagram of the system which shows the behavioural aspect of the system. It includes the schema designs of the project. This is use for storing the data in database. It includes the AEIOU Canvas and other canvas of the project. This is used to interpret observations gathered by ethnographic practice.

Chapter 6: It includes the implementation of the project.

Chapter 7: This chapter contains deep knowledge about the reference, conclusion of the project and remaining future work of this project or system.

CHAPTER 2: LITERATURE REVIEW

1. Find My Device

Find my Phone and other or similar is the name given by various manufacturers to software and a service for smartphones, whereby a registered user can find the approximate location of the phone if switched on, over the Internet, or by the phone sending e-mail or SMS text messages. This helps to locate lost or stolen phones.

Apple offers a free service called Find My iPhone for iPhones running iOS. Microsoft's My Windows Phone offers a similar service for phones running Windows Phone. Similarly, Google offers Find My Device for phones running Android.

Some of these applications may have limitations which can be checked before installing, such as only working in some countries, dependencies upon the phone's implementation of GPS, etc. Similar paid or free apps are also available for all device platforms.

2. Teledroid Anti-Theft Application for Android Devices

Teledroid Anti-Theft application is a project which helps to track the location of smart phones. This application usually runs in the background. It consists of Android Client application which automatically sends SMS to alternate number when SIM card is changed. Position Tracker works on GPS (Global Positioning System) and GPRS (General Packet Radio Service). When SIM flipped, the application will fetch latitude and longitude from satellite and send it as SMS. Owner can send a message to the application in the predefined format. Application provides the requested services via SMS or Email

3. Anti-Theft Alarm Application

"Anti Theft Alarm" application helps you know whenever someone is trying to unlock your mobile when it is not with you. Imagine you are sleeping or in bathroom and someone tries to unlock your mobile to see the content, even if you set a good pattern or pin one would figure out after few attempts. And imagine if there is an App which would scream loud when it detects that. Anti theft alarm is just that. A loud siren is played when someone tries to unlock and fail to unlock your mobile's pin/pattern/password. A must have app on all your hard earned smartphone.

Table 2.1 Table for Literature Survey

|  |  |  |  |
| --- | --- | --- | --- |
| Sr  No. | Reference | Limitations | Solution |
| 1. | Google Find my Device  [1] | Internet is required | SMS based Commands. |
| 2. | Teledroid Anti-Theft Application for Android Devices [2] | Difficult to remember SMS commands | SMS Commands in  GUI button forms. |
| 3. | Anti-Theft Alarm  Application | Every time it must be enabled. | Enabled until user manually disable feature. |
| 4. | Mobile Theft Tracking  Application. [3] | GPS & Mobile Data must be enabled. | It can be turned on with  SMS commands. |

CHAPTER 3: PROJECT MANAGEMENT

3.1 Project Planning and Scheduling

3.1.1 Project Development Approach

We have developed our

project by using Incremental development model of Software

Development Lifecycle. This model is a best approach according to a user’s requirements.

To achieve the goal and worthier.

fulfill the constraints of this project Incremental model is

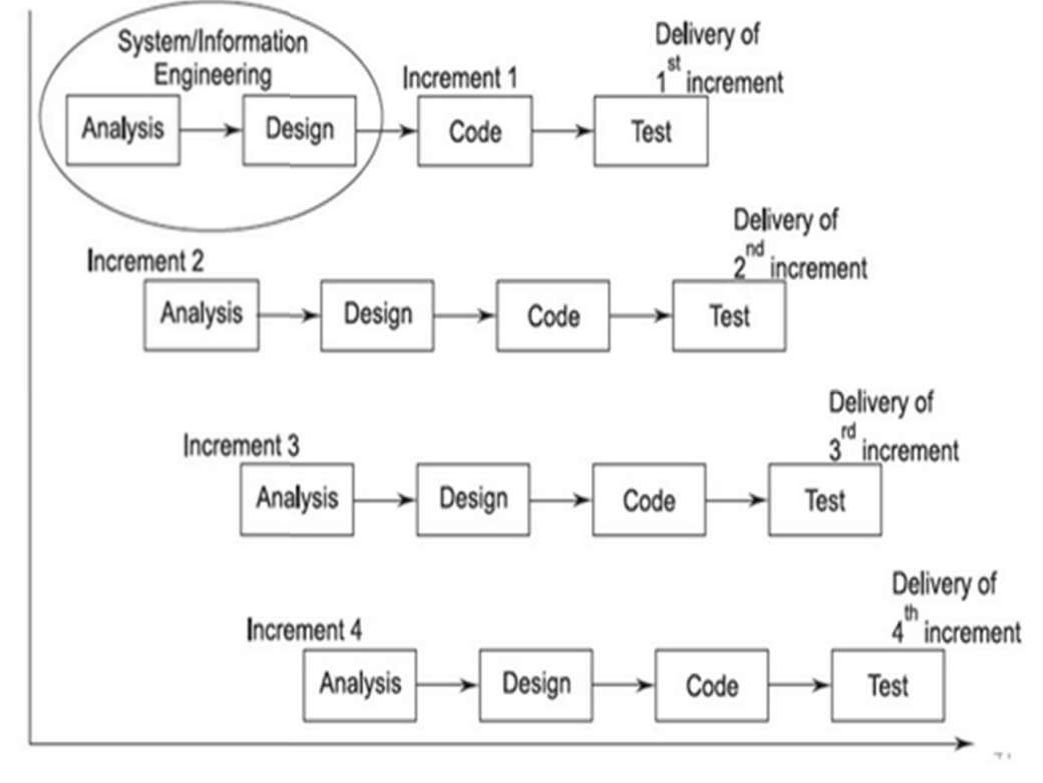


Fig. 3.1.1 Iterative Enhancement Model

The incremental model

(also known as iterative enhancement model) comprises the

features of waterfall model in an iterative manner. The waterfall model performs each

phase for developing complete software whereas the incremental

model has phases

similar to the linear sequential model arid has an iterative nature of prototyping. During

the implementation phase, the project is divided into small

subsets known as

increments that are implemented individually. This model comprises several phases

where each phase produces an increment. These increments are

identified in the

beginning of the development process and the entire process from requirements gathering to delivery of the product is carried out for each increment.

Justification:

The idea behind the model is to process the requirements and improve the requirements iteratively until the implementation of final software. In addition, similar to prototyping, the increment provides user feedback which specifies the software requirements. This is a useful approach as it makes easier the software development process as smaller increments are easier to implement than implementing the entire system at once.

In incremental model each stage adds some functionality to the product which is passed it on to its next stage. The core product is generally the first increment and is used for a detailed evaluation by the user. This process results in creation of a plan for the next increment. This plan decides product improvement (features or functions) to achieve user requirements.

Advantages:

 It is generally easy to test and debug then other method of software development.

 Easily increment can be developing with a few people.

 Number of people require is less.

 Easy to add quality.

 The system can be design in such a manner that it can be deliver into PC's.

Disadvantages:

 Requires planning at the management and technical level.

 As addition functionally is added to the product related to system architecture which are not earlier prototype.

 Becomes invalid when there is time constraint on the project schedule or when the users cannot accept the phased deliverables.

System Engineering:

Analysis: The aim of the requirement analysis is to understand the exact requirements of the mobile user.

1. Requirement gathering and analysis: This activity consists of first gathering the requirement and then analyzing the gathered requirement.

2. Requirement Specification: The Student/Employee/any Other Daily Commuter requirement identified during the requirement gathering and analysis activity are organized into a software requirements specification (SRS).

Design: The goal of the design phase is to transform the requirements specified in the SRS document into a structure that is suitable for implementation in some programming language. In technical, during the design phase the software architecture is derived from the SRS document.

1. Traditional Design Approach: The traditional design technique is based on the data flow-oriented design approach. While using this technique the design phase consists of two important activities: first a structured analysis of the requirement specification is carried out where the detailed structure of the problem is examined.

2. Object-oriented design approach: Object-oriented design approach (OOD) is a relatively new technique. This technique identifies occurrence of various objects in the problem domain and the solution domain, once they are identified the different relationships that exist among these objects are also identified.

Code: The main aim of the coding of software development is to convert the software design into source code. Sometimes the coding phase is also known as implementation phase since the design is put into action as a workable solution in this phase. Each element of the design is implemented as a program module. The end-product of this phase will be set of program modules which have been individually tested. To enable the engineers to write good quality program, every software development organization normally formulates its own coding standards that suits itself. A coding standard labels all issues such as the standard ways of properly placing out the program code, the template for proper placement of the function and module headers, commenting guidelines, variables and function, proper naming conventions, the maximum number of source lines that are permitted in each module.

Testing: System testing is normally conducted out in a planned manner according to a system test plan document.

Maintenance: Maintenance of a typical software product demands much greater effort than the effort used while developing the product itself. Maintenance effort is abruptly in

40:60 ratios.

3.1.2 Project Plan

We have different modules in our project which will be helpful for completing project. And the time duration is dependent on the nature of modules.

Phase 1: It contains design model, database design and documentation. Phase 2: It contains connectivity of database, home page, and login. Phase 3: It consist of pre-protection module and protection module.

3.1.3 Schedule Representation

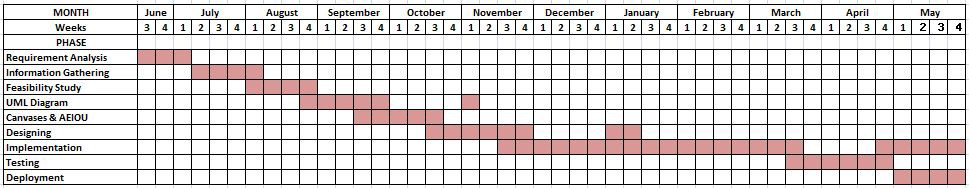


Fig. 3.1.2 Schedule Representation

CHAPTER 4: SYSTEM REQUIREMENT SPECIFICATION

4.1 User Characteristics

The users of this system are as follows: -

 Students

 Employees

 Worker

 Daily Commuter

Students make use of system when they aretravelling through public services to prevent their device from being stolen.

Employees, Worker, and every other day to day user of mobile phone use this system to prevent their mobile device from being stolen or in case of stolen to protect their data and find their mobile device.

4.2 Hardware and Software Requirements

Hardware:

 Smart Phone: 512MB RAM or more

 Computer System: 4GB RAM or more

Software:

 Operating System: Android 4.0 and above

 Front End: Android with API level 14

 Back End: Firebase

Documentation:

 MS Word

 MS Excel

 Draw.io

 Plagiarism Checker X

CHAPTER 5: SYSTEM ANALYSIS

5.1 Feasibility Study

Feasibility study is about the challenges we may face while making the project or while implementing a task as it includes technical development and project implementation. As we can only work on the project which is feasible, else it would be waste of time and efforts trying to implement a project which is not feasible.

 Technical Feasibility.

 Economic Feasibility.

 Operational Feasibility.

 Schedule Feasibility.

 Legal Feasibility.

5.1.1 Technical Feasibility

Technical feasibility study includes the platform in which our project would work properly. It checks whether the proposed system which we are going to create can be implemented by using the existing technology or not. By looking into the feasibility and compatibility we had decided to implement the proposed system by using Android Studio and Firebase.

5.1.2 Economic Feasibility

Economic feasibility includes the costs or expenses related to the development of the project. Here we should take care of economic cost as it should not exceed the limit else it will be difficult for the users to purchase or sell the product due to the higher cost. So, looking into the following matter we are trying to develop a cost-efficient system.

5.1.3 Operation Feasibility

Operation feasibility shows the rate of solving the real-world problem faced by the user with the proposed system. It is a standard that ensures interoperability without stifling competition and innovation among users, to the benefit of the public both in terms of cost and service quality. The proposed system is acceptable to users. So, the proposed system is operationally feasible.

5.1.4 Schedule Feasibility

It is a measure of how reasonable project timetable is given by our guide, are the project deadline reasonable? Some projects are initiated with specific deadlines. You need to determine whether the deadlines are mandatory or desirable. A project will fail if it takes

too long to be completed before it is useful. Typically, this means estimating how long the system will take to develop and if it can be completed in each time using some methods like payback period.

5.1.5 Legal Feasibility

Determine whether the proposed system conflicts with legal requirements.

5.2 Functions of System

5.2.1 Use Case Diagram

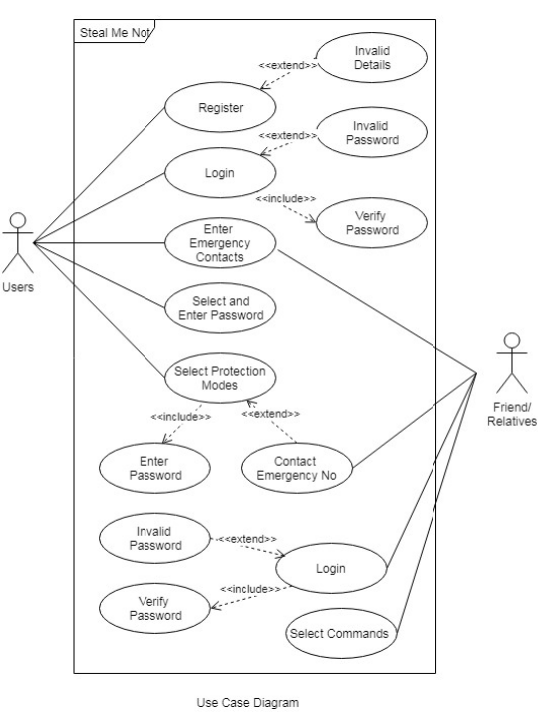


Fig. 5.2.1 Use Case Diagram

5.3 Data Modeling

5.3.1 Activity Diagram

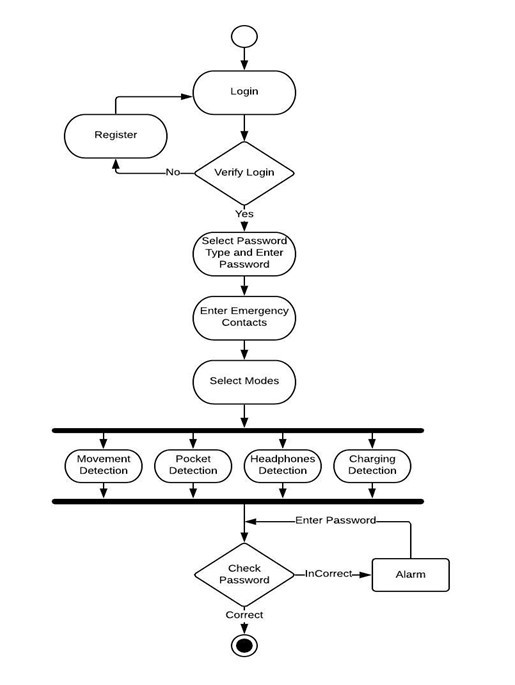


Fig. 5.3.1.1 Activity Diagram of Module 1

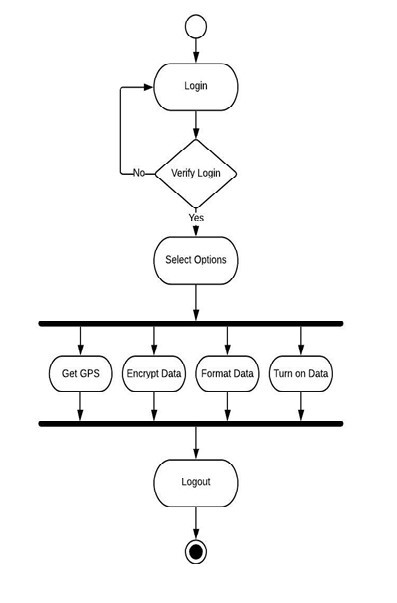


Fig. 5.3.1.2 Activity Diagram of Module 2

5.3.2 Sequence Diagram

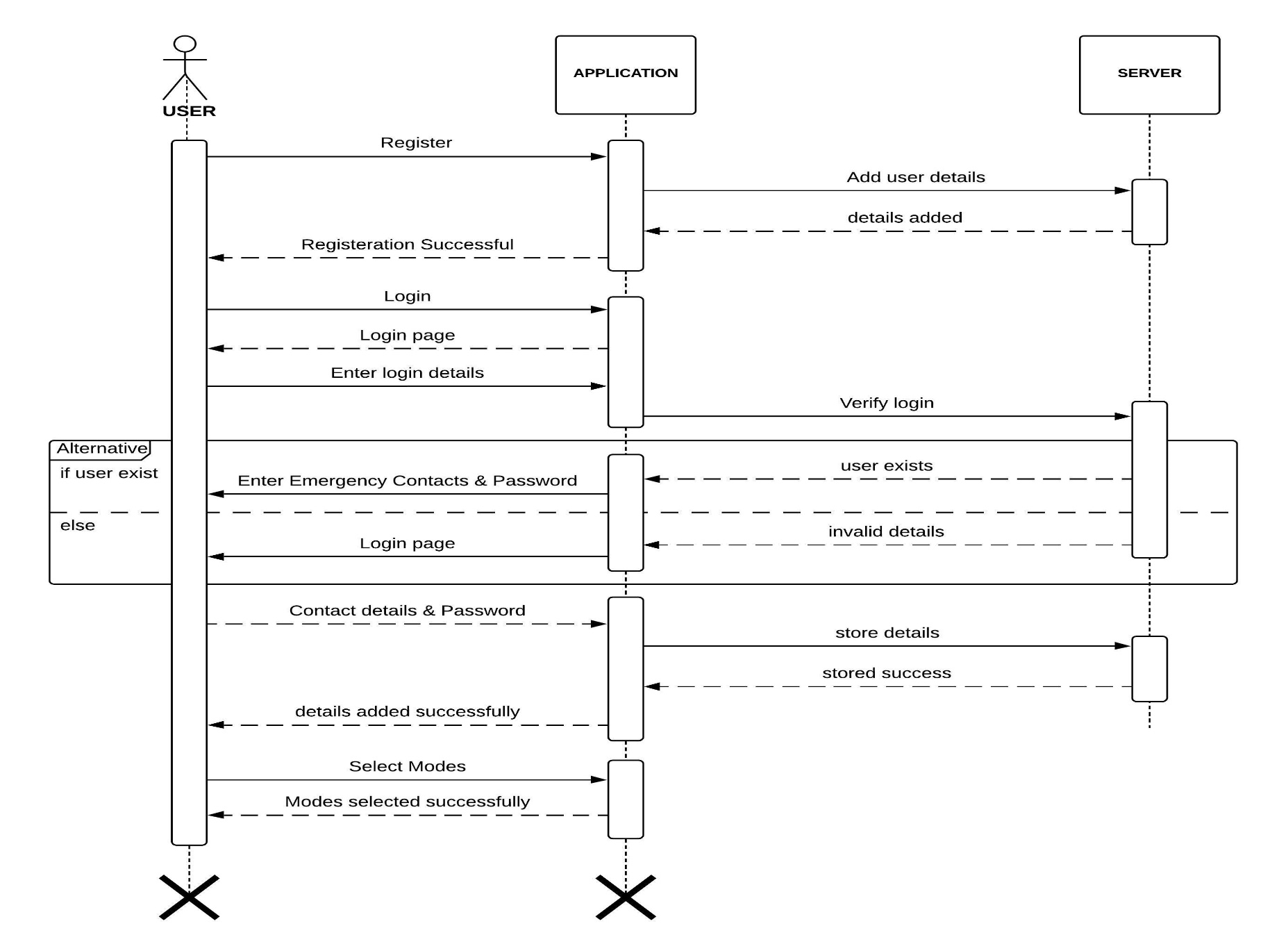


Fig. 5.3.2.1 Sequence Diagram for Module 1

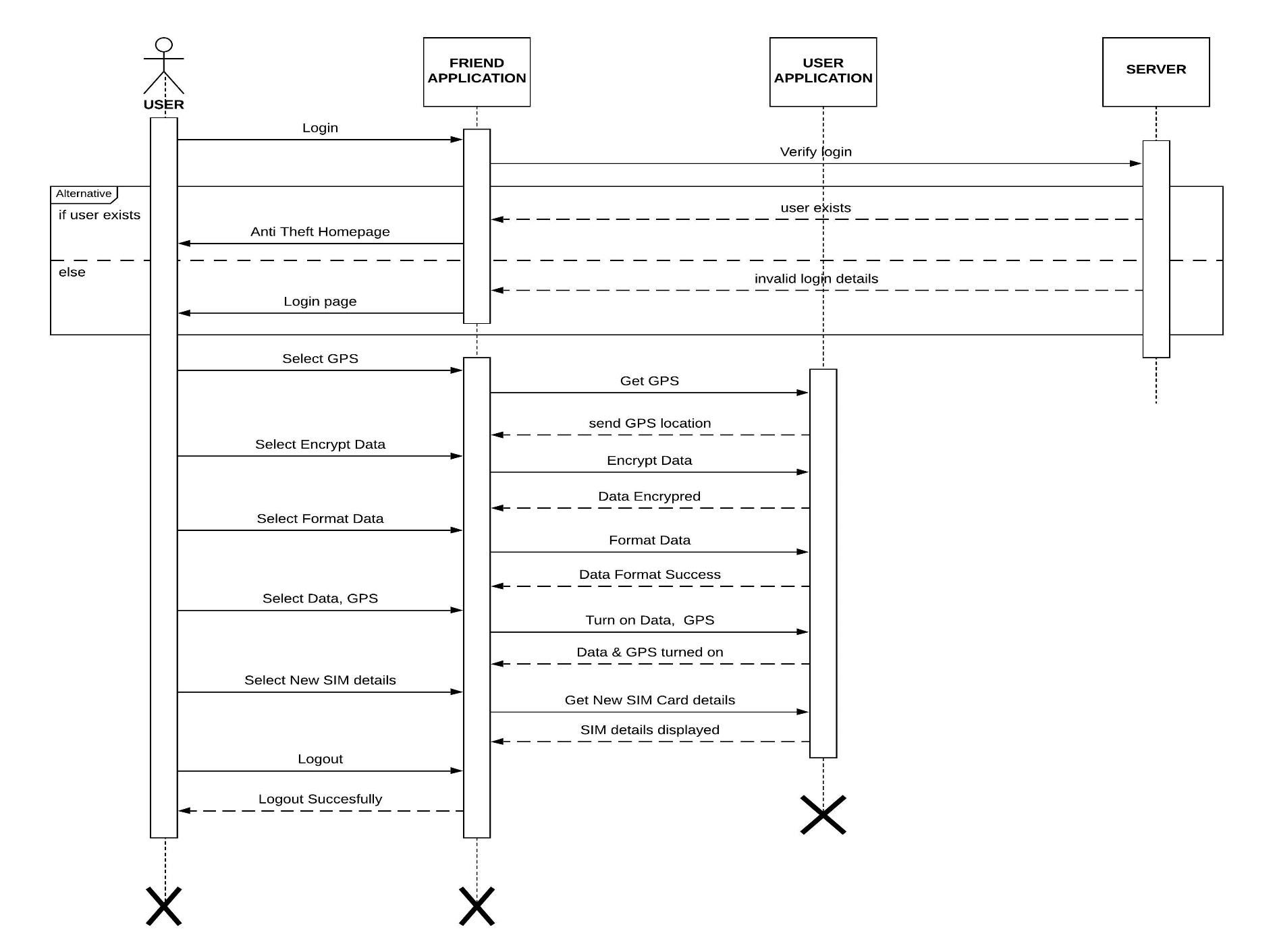


Fig. 5.3.2.2 Sequence Diagram For Module 2

5.4 Functional and Behavioral Modeling

5.4.1 Data Flow Diagram

Level 0:

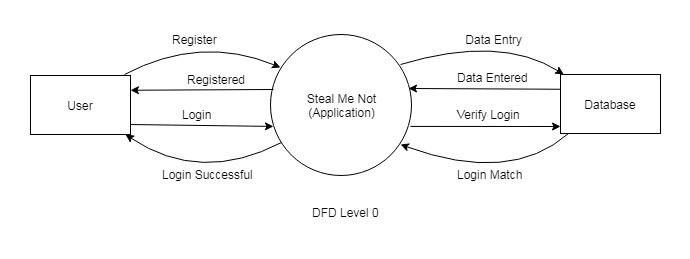


Fig. 5.4.1 DFD Level 0

Level 1:

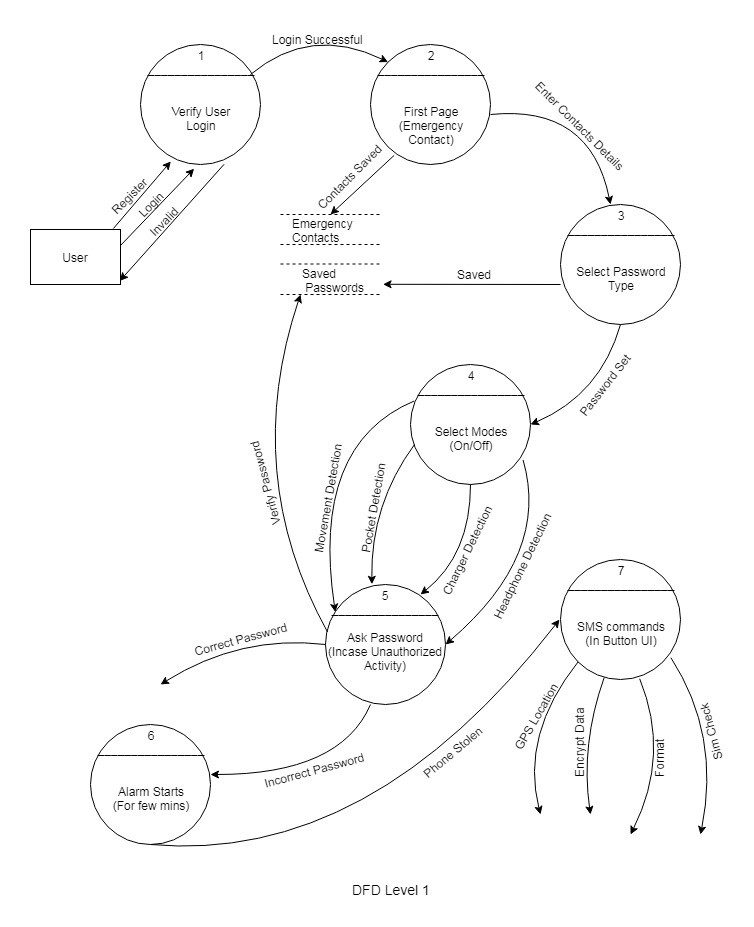


Fig. 5.4.2 DFD Level 1

CHAPTER 6: SYSTEM DESIGN

6.1 Database Schema Design

Table 6.1 Database Table for User

|  |  |  |
| --- | --- | --- |
| COLUMN NAME | DATATYPE | DESCRIPTION |
| U\_ID | INT | PRIMARY KEY AUTOGENERATED |
| FULL NAME | VARCHAR | REQUIRED |
| CITY | VARCHAR (50) | REQUIRED |
| MOB NO | INT | REQUIRED |
| EMAIL ID | VARCHAR | REQUIRED |
| IMEI | LONG INT | AUTOMATIC |

CHAPTER 7: CANVAS REPRESENTATION

7.1 AEIOU Summary

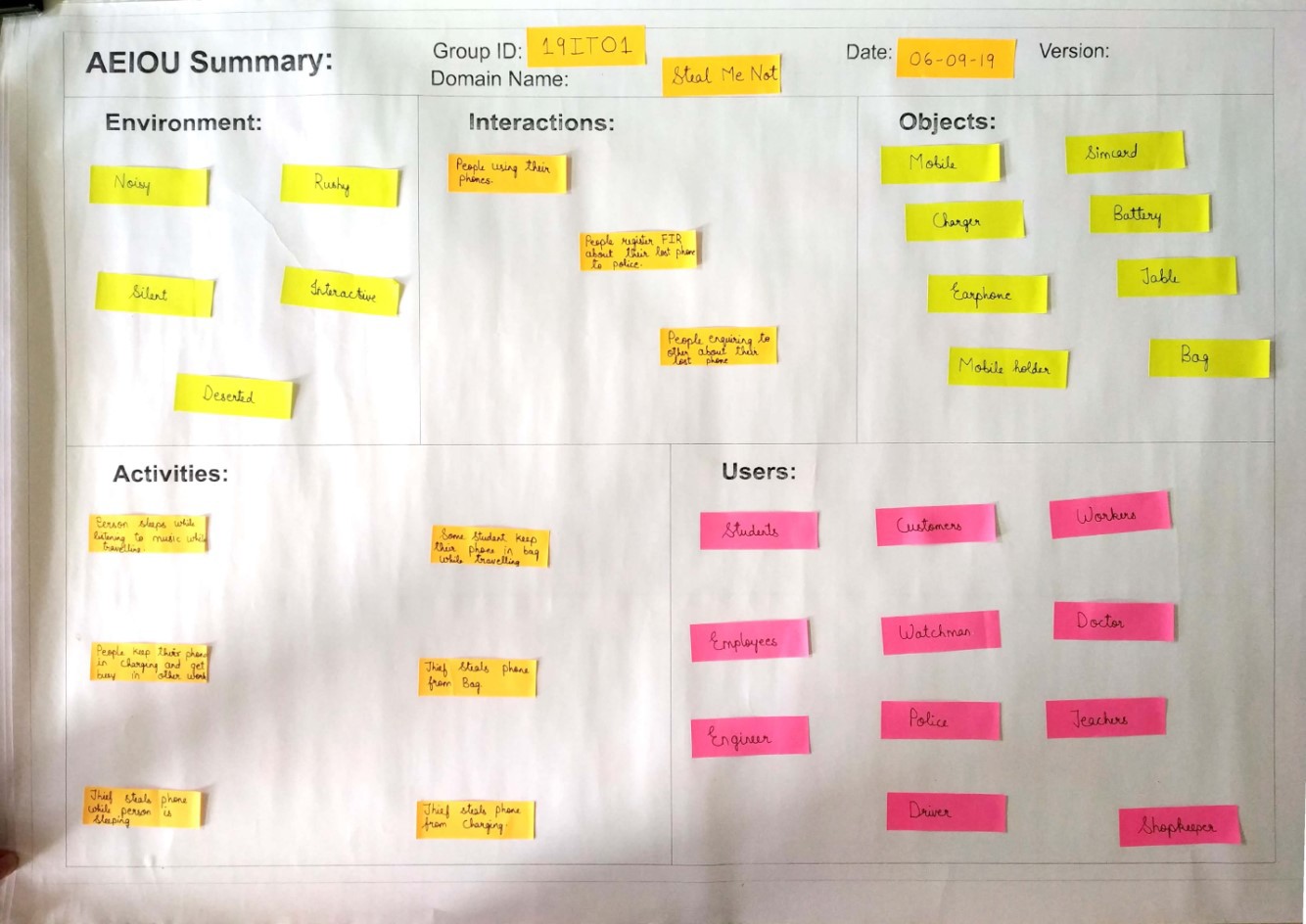


Fig. 7.1 AEIOU Summary

In this canvas we have defined:

 Environment: What type of Environment?

 Interactions: Who interact with whom?

 Objects: Which objects are used?

 Activities: What Activities are performed?

 Users: Who are the Users?

7.2 Empathy Summary Canvas

Empathy summary canvas is used to have information about the existing system. From the existing system, we have summarized a lot many problems and filtered out the problems and find out probable solution which will be overcome by our system.

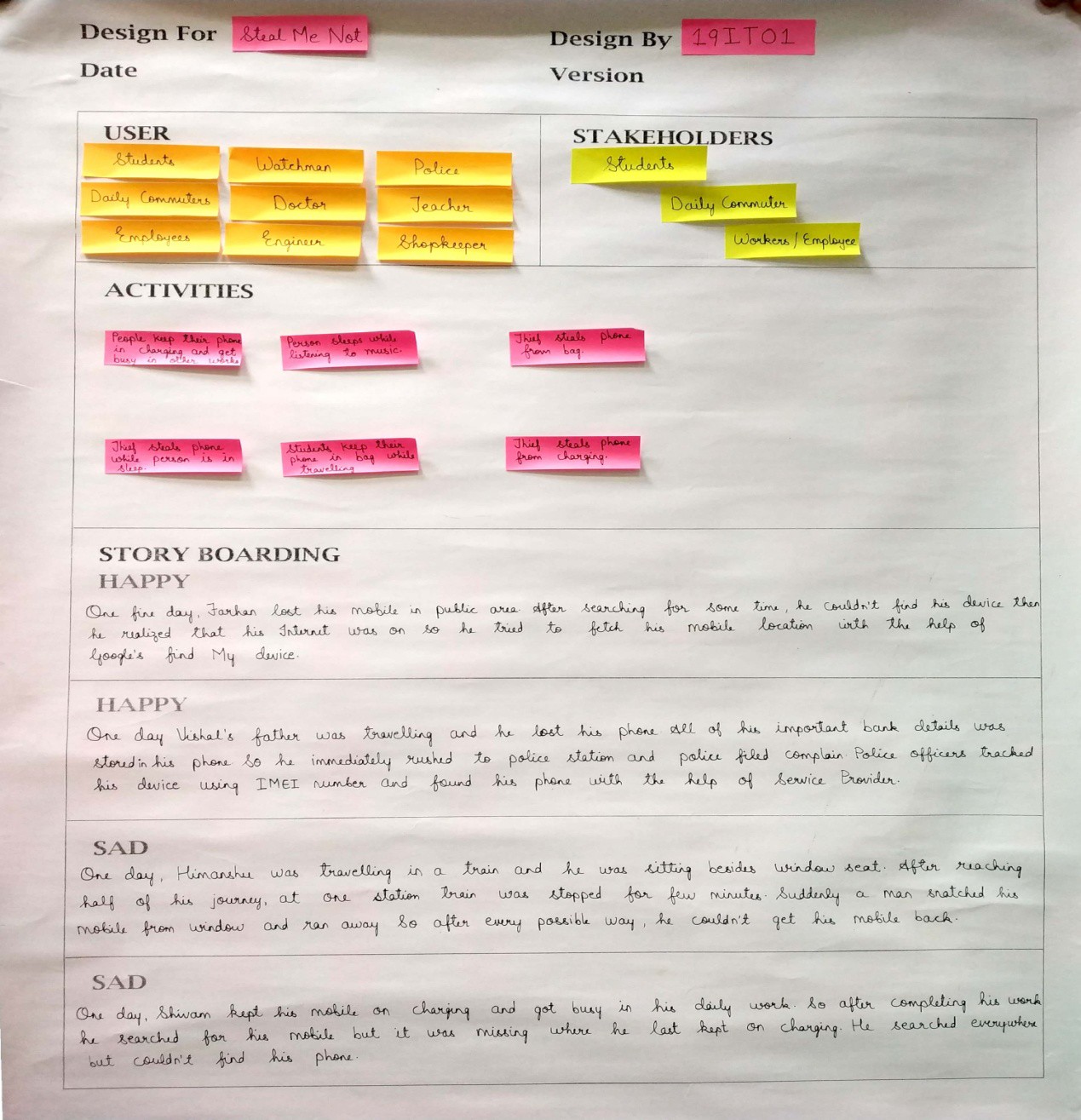


Fig. 7.2 Empathy Summary Canvas

In this canvas we have defined:

 User-Who are the Users?

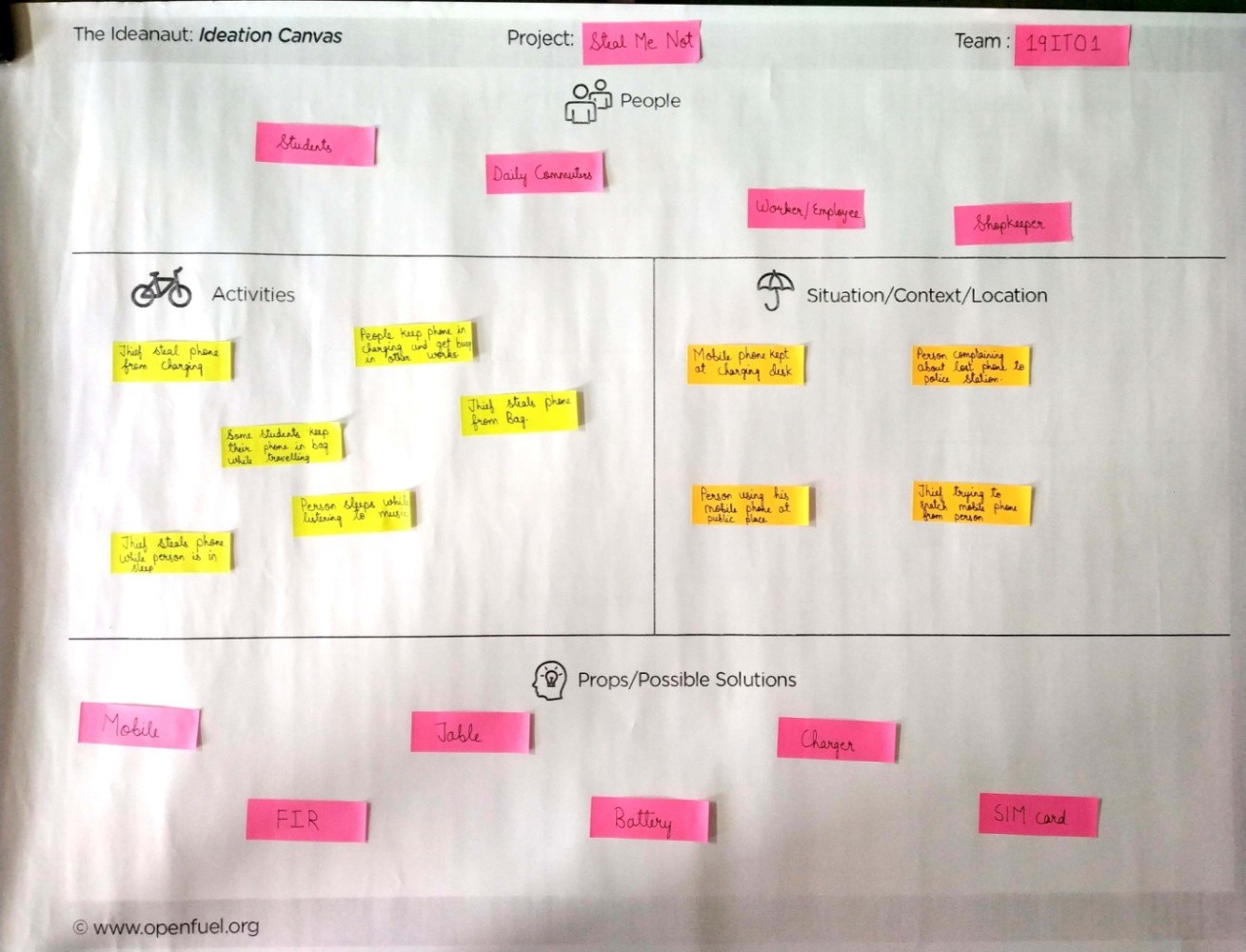
 Stakeholders-Which person or organization who are interested.

 Activities-Activities related to stakeholders.

 Story Boarding-Story Related to Activities.

7.3 Ideation Canvas

Ideation canvas is used to find out the main problem from the most probable five problems and try to find out the possible scope.



In this canvaswe have defined:

Fig. 7.3 Ideation Canvas

 People: Includes people using our system.

 Activities: Includes activities done in our system.

 Situation/Context/Location: Includes the locations where our system used.

 Props/Possible Solution: Includes the props used to use our system.

7.4 Product Development Canvas

Product Development Canvas is used to describe the overall features and functionality of our project, other than that it also consists of our product approach, that is contains the module of our project.

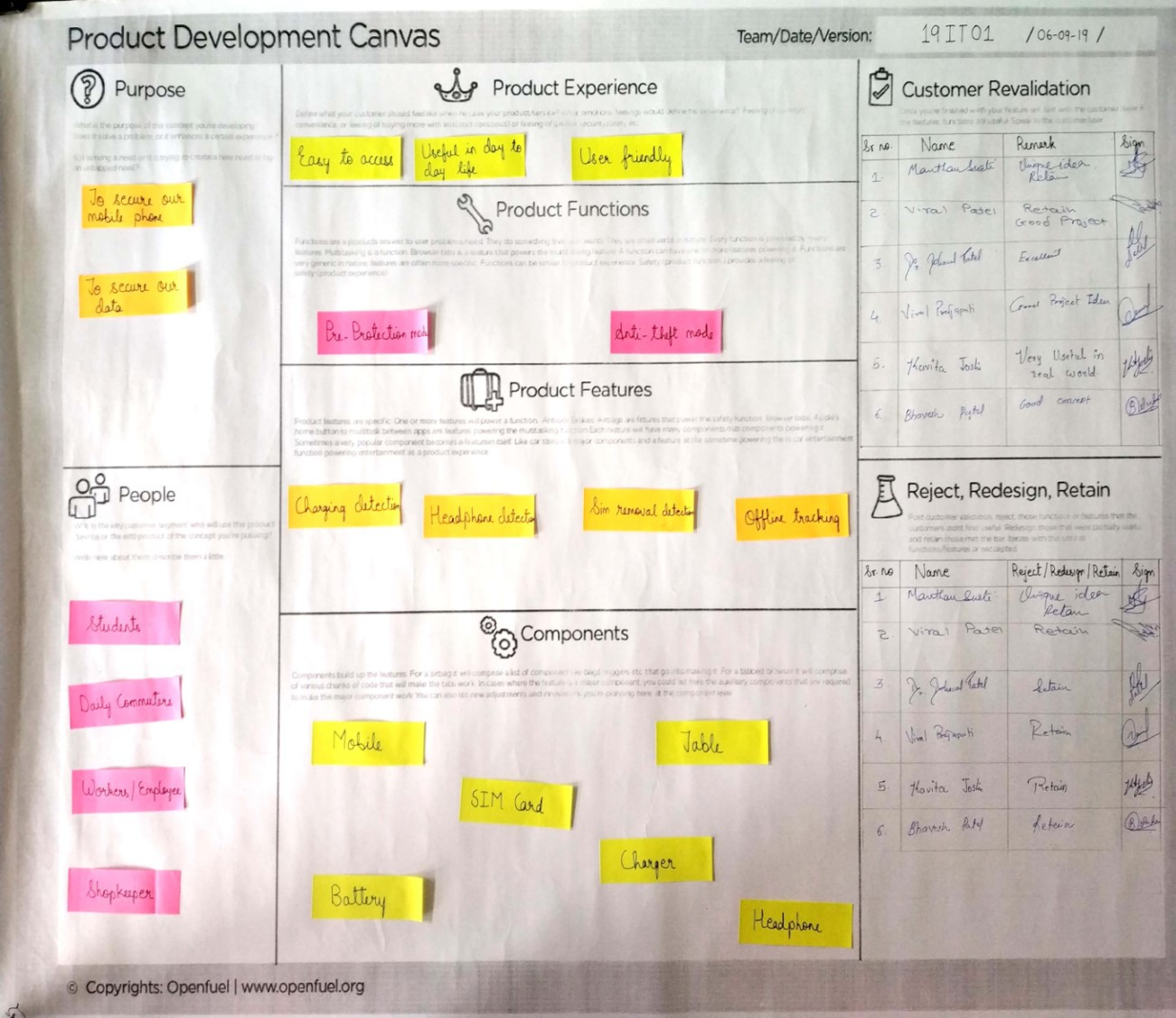


Fig. 7.4 Product Development Canvas

In this canvas we have defined:

 Purpose: Includes purpose of our system.

 People: Includes the people using our system.

 Product Experience: Includes the experienced features of our system.

 Product Function: Includes the main functions of our system.

 Product Features: Includes the features of our system.

 Components: Includes the components of our system.

 Customer Revalidation: Includes the customer revalidation features of our system.

 Reject/Redesign/Retain: Includes the retail property of our system.

CHAPTER 8: IMPLEMANTATION

8.1 Testing

Software testing is a process of estimating the quality of the software and represents the actual requirement, design and code generation. The main phases of testing conduct verification and validation. It is one of the most important parts in the Software development because it will help us in find that a user requirement is satisfied or not. As it is the essential phase of software development it will be carried out at the end. If the product matches with the user specification than the product is valid or else invalid. Where else in the verification we check whether the business requirement is satisfied or not. If a system is implemented without going through validation and verification it may give disfavor result. Hence, Software testing will evaluate a software to check the differences between given input and user expected output.

Validation Testing:

The user must login to the system with his/her unique login id and password. If he/she fails to get logged in, then it will show alert message.

Functional Testing:

The whole system is divided into different modules. Adding/Updating of user information in the database is done.

Navigational Testing:

The system was tested so that all the pages are properly accessible with the irrespective links. To uncover the errors in the system we have done testing as follows:

Input checking: In this phase we tested the validation process only. When users enters the data in the given text box or in girds, proper input format is checked. If entry required numeric data user is bounded to enter only numeric. If text (alphanumeric) data then user is bounded to enter text data only also check for null values. Like this all entries of all input areas are tested.

Condition testing: Condition testing is a method that exercises the logical condition contained in program module. All relational statements were individually examined and tested. Extreme case values are given for testing.

8.2 Test Case

Table: 8.2.1 Test Case for Login

|  |  |  |  |
| --- | --- | --- | --- |
| No. | Test Cases Description | Input | Output |
| 1 | All fields are empty | - | Show the logging page. |
| 2 | Right User ID & Password | -User ID  -Password | Load the main activity |
| 3 | Wrong User ID &  Password | -User ID  -Password | Toast with message “Enter Valid  Email I’d and password” |

Table: 8.2.2 Test Case for Registration

|  |  |  |  |
| --- | --- | --- | --- |
| No. | Test Cases Description | Input | Output |
| 1 | All field are empty | - | Show the registration Page. |
| 2 | Right Detail field in every text box | -Name  -Email  -Password  -Address  -Mobile No | -Open Login page |
| 3 | Password and Confirm  Password not matching | -Password  -Confirm Password | -Please Enter same Password and confirm Password. |

8.3 Important Screenshots



Fig. 8.3.1 Registration Page

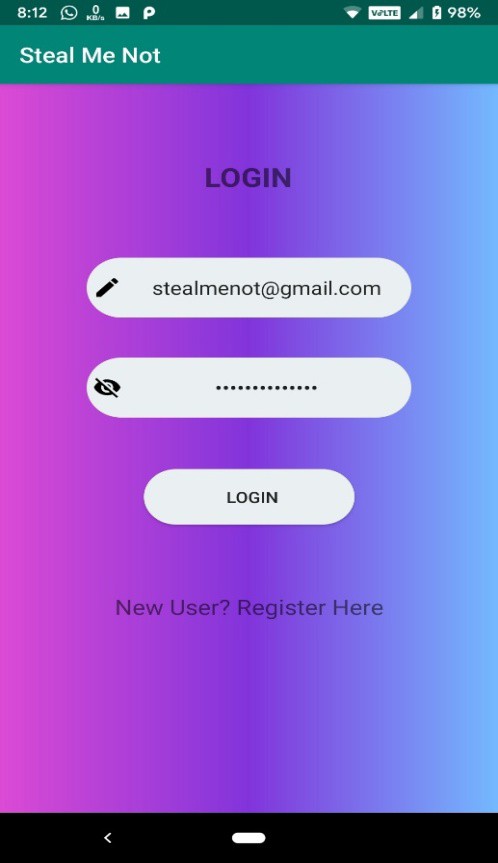


Fig. 8.3.2 Login Page

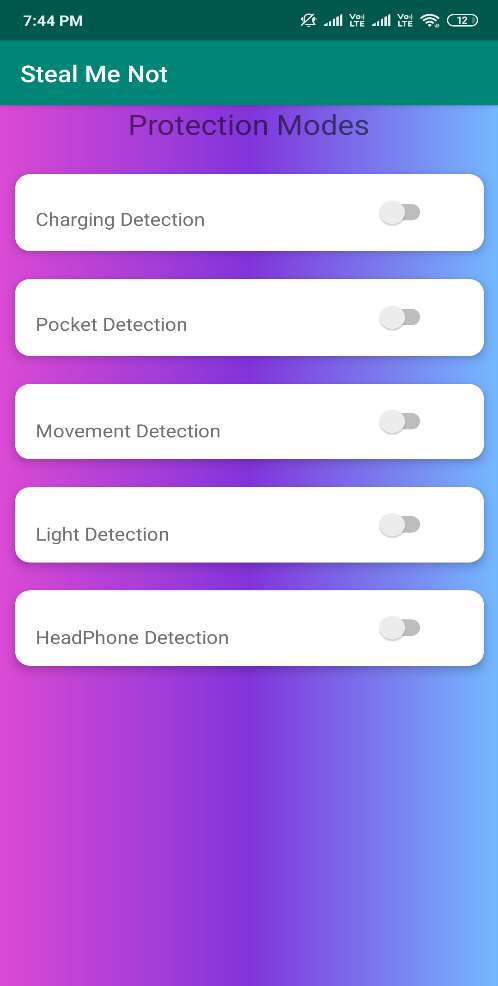


Fig. 8.3.3 Home Page

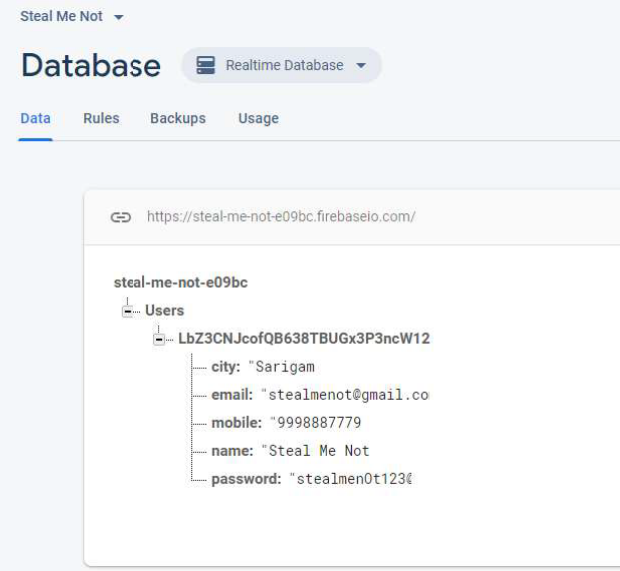


Fig. 8.3.4 Database with Data Inserted

8.4 Sample Code

 Registration

package com.project.stealmenot;

import androidx.annotation.NonNull;

import androidx.appcompat.app.AppCompatActivity;

import android.content.Intent; import android.os.Bundle; import android.text.TextUtils; import android.util.Log; import android.view.View;

import android.widget.Button; import android.widget.EditText; import android.widget.Toast;

import com.google.android.gms.tasks.OnCompleteListener;

import com.google.android.gms.tasks.Task; import com.google.firebase.auth.AuthResult; import com.google.firebase.auth.FirebaseAuth;

import com.google.firebase.database.DatabaseReference; import com.google.firebase.database.FirebaseDatabase; public class RegisterActivity extends AppCompatActivity {

EditTextetName, etEmail, etPassword, etConfirmPassword, etCity, etMobileNo; Button btnRegister;

FirebaseAuthfirebaseAuth; DatabaseReferencedatabaseReference;

@Override

protected void onCreate(Bundle savedInstanceState) { super.onCreate(savedInstanceState); setContentView(R.layout.activity\_register);

etName = (EditText)findViewById(R.id.etName); etEmail = (EditText)findViewById(R.id.etEmail); etPassword = (EditText)findViewById(R.id.etPassword);

etConfirmPassword = (EditText)findViewById(R.id.etConfirmPassword);

etCity = (EditText)findViewById(R.id.etCity);

etMobileNo = (EditText)findViewById(R.id.etMobileNo); btnRegister = (Button)findViewById(R.id.btnRegister); firebaseAuth = FirebaseAuth.getInstance();

databaseReference=FirebaseDatabase.getInstance().getReference("Users");

btnRegister.setOnClickListener(new View.OnClickListener() {

@Override

public void onClick(View v) {

final String name = etName.getText().toString().trim();

final String email = etEmail.getText().toString().trim();

final String password = etPassword.getText().toString().trim();

String confirmPassword = etConfirmPassword.getText().toString().trim();

final String city = etCity.getText().toString().trim(); final String mobile = String.valueOf (Long.parseLong(etMobileNo.getText().toString().trim())); final String mobile = etMobileNo.getText().toString();

final String emailPattern = "[a-zA-Z0-9.\_-]+@[a-z]+\\.+[a-z]+";

final String passwordPattern =

"^(?=.\*[0-9])(?=.\*[a-z])(?=.\*[A-Z])(?=.\*[@#$%^&+=])(?=\\S+$).{4,}$";

final String mobilePattern = "[7-9]{1}[0-9]{9}";

try {

if (TextUtils.isEmpty(name)) { Toast.makeText(RegisterActivity.this, "Please enter your name", Toast.LENGTH\_SHORT).show();

return;

}

if (TextUtils.isEmpty(email)) { Toast.makeText(RegisterActivity.this, "Please enter your email id", Toast.LENGTH\_SHORT).show();

return;

}

if (TextUtils.isEmpty(password)) { Toast.makeText(RegisterActivity.this, "Please enter your password", Toast.LENGTH\_SHORT).show();

return;

}

if (TextUtils.isEmpty(confirmPassword)) { Toast.makeText(RegisterActivity.this, "Please enter your confirm password", Toast.LENGTH\_SHORT).show();

return;

}

if (TextUtils.isEmpty(city)) { Toast.makeText(RegisterActivity.this, "Please enter your city", Toast.LENGTH\_SHORT).show();

return;

}

if (TextUtils.isEmpty(mobile)) {

Toast.makeText(RegisterActivity.this, "Please enter your mobile number", Toast.LENGTH\_SHORT).show();

return;

}

if (password.length() < 6) {

Toast.makeText(RegisterActivity.this, "Password length too small!", Toast.LENGTH\_SHORT).show();

return;

}

if (!email.matches(emailPattern)) { Toast.makeText(RegisterActivity.this, "Invalid Email address", Toast.LENGTH\_SHORT).show();

return;

}

if (password.equals(confirmPassword)) {

firebaseAuth.createUserWithEmailAndPassword(email, password)

.addOnCompleteListener(RegisterActivity.this, new

OnCompleteListener<AuthResult>() {

@Override

public void onComplete(@NonNull Task<AuthResult> task) {

if (task.isSuccessful()) {

startActivity(new Intent(getApplicationContext(),ProtectionModesActivity.class)); Toast.makeText(RegisterActivity.this,"Registeration Successful",Toast.LENGTH\_SHORT).show();

Users users = new Users(name, email, password, city, mobile); FirebaseDatabase.getInstance().getReference("Users")

.child(FirebaseAuth.getInstance().getUid())

.setValue(users).addOnCompleteListener(new OnCompleteListener<Void>() {

@Override

public void onComplete(@NonNull Task<Void> task) { Toast.makeText(RegisterActivity.this, "Registeration Successful", Toast.LENGTH\_SHORT).show();

startActivity(new Intent(getApplicationContext(), MainActivity.class));

}

});

} else {

Toast.makeText(RegisterActivity.this, "Registeration failed", Toast.LENGTH\_SHORT).show();

}

}

});

}

}

catch(Exception e)

{

}

}

});

}

}

Toast.makeText(getApplicationContext(),"Exception occured!", Toast.LENGTH\_SHORT).show();

 Login

package com.project.stealmenot;

import …

public class MainActivity extends AppCompatActivity { EditTextetEmail,etPassword;

Button btnLogin;

private FirebaseAuthfirebaseAuth;

@Override

protected void onCreate(Bundle savedInstanceState) { super.onCreate(savedInstanceState); setContentView(R.layout.activity\_main);

etEmail = findViewById(R.id.etEmailLogin); etPassword = findViewById(R.id.etPasswordLogin); btnLogin = findViewById(R.id.btnLogin); btnLogin.setOnClickListener(new View.OnClickListener() {

@Override

public void onClick(View v) {

String email = etEmail.getText().toString().trim();

String password = etPassword.getText().toString().trim(); String emailPattern = "[a-zA-Z0-9.\_-]+@[a-z]+\\.+[a-z]+"; firebaseAuth = FirebaseAuth.getInstance();

try

{

if (TextUtils.isEmpty(email)) { Toast.makeText(MainActivity.this, "Please enter your email id", Toast.LENGTH\_SHORT).show();

return;

}

if (TextUtils.isEmpty(password)) {

Toast.makeText(MainActivity.this, "Please enter your password", Toast.LENGTH\_SHORT).show();

return;

}

if (password.length() < 6) {

Toast.makeText(MainActivity.this, "Password length too small!", Toast.LENGTH\_SHORT).show();

return;

}

if(!email.matches(emailPattern))

{

Toast.makeText(MainActivity.this,"Invalid Email address",Toast.LENGTH\_SHORT).show();

return;

}

}

catch(Exception e)

{

}

}

});

}

Toast.makeText(getApplicationContext(),"Exception occured!!",Toast.LENGTH\_SHORT);

public void goToRegister(View view) {

startActivity(new Intent(MainActivity.this,RegisterActivity.class));

}

}

CHAPTER 9: CONCLUSION AND FUTURE WORK

Conclusion:

In this project we have made login and registration pages using android studio and connected it with the database. We have used firebase database and also started designing layouts of other pages of the application.

Future Work:

In future work we will provide features like pre-protection modes to prevent mobile theft and incase device is stolen other modes like encrypt data, request GPS location etc which one can use logging from other device using same user-id on stolen device. This application is used so; day to day users of mobile phone can prevent their device from getting stolen and keep their data safe, as all of one's important data are present on mobile device. It will provides useful functionalities in very easy way and will be time saving.

REFERENCE

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3) ANDROID: https://developer.android.com/guide/”.

4) FIREBASE: https://firebase.google.com/docs/android/setup

**APPENDIX**

A.PPR

