1. INTRODUCTION

The purpose of the Medical Condition Prediction Application is to ease health care and to provide a convenient and easy-to-use application for users, trying to get information. The system is based on an android platform with its location fetch and prediction services. We will have a database server supporting no. of major cities. Above all, we hope to provide a comfortable user experience along with the useful prediction about disease or a piece of information about it.

1.1. Motivation and Overview

1.1.1. Function model of MedCaution:

Here we will discuss the all functions and how to use it and allow user to view the analysed result of most favourable disease of that current location of user.

When the user enters the home page of our app, he/she will see multiple options. First option is “About” which shows brief about app. Second option is “Help” which show the steps for using this application. “Start” is another option by clicking to it user will move to the activities of this app.

1.1.2. About Us

In this page User will get the information about the app, version and the developer.

1.1.3. Help

This page will provide help for user.

1.1.4. Location

This page shows the current location of the user.

1.1.5. Predict page

This page shows the analyzed Result.

1.2.Objective

From ancient times to renaissance, it is seen that people do not take the issue of their health seriously and simply ignore it when it comes to maintain it to lead a good, happy life. The reason behind this ignorance can be different but the result is somewhat the same. The Medical Condition Prediction Android app will help user to view the scope of a disease in real time by selecting the current location of the user. The location selected are then processed to take out the chances of a disease to occur. There can be more than one disease predicted for a same location but may be with different percentage of chances of occurrence. The details of the disease are also given with useful information.

1.2.1.Scope:

Medical Condition Prediction is a useful app in terms of what actions does it take to up bring one's health by simply taking out positive results to improve it.

The future scope for this application is endless but there can be various things that can certainly be added so as to uplift the performance of this app. Various new features can be added such as precautions and symptoms for the disease so that the user can always search for the symptoms rather than just knowing the names, a proper detailed view of the symptom so that the user can understand the complex term being used for its symptom, an option to choose the language by the user so that he can understand the app properly and also by making the app to be launched in every OS available so as to target a larger audience.

2. SOFTWARE REQUIREMENT ANALYSIS

2.1.Problem Statement

The problem is when we want to know some information about the medical condition of any area we do not have an effective way to find the information. Therefore in this case the technology should help to create an interaction between the people and the piece of information.

2.2.SRS

2.2.1.Functionality:

1. About.

2. Help.

3. Location.

4. Disease Prediction.

2.2.3. Graphical User Interface

The system provides a uniform look and feel between all the layouts by providing common components of android like Buttons, Text view, Spinner etc.

2.2.4. Accessibility

The system provides easy access of English language support.

3. SOFTWARE DESIGN

https://github.com/Shashikumar998/Miniproject-MedicalConditionPredictionApp/wiki/SRS-Analysis-Models

3.1. Context Level DFD

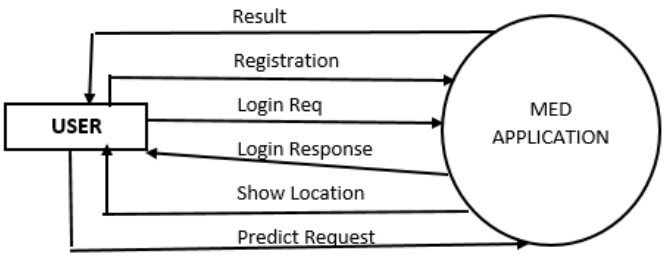


FIG 3: CONTEXT-LEVEL DFD

Fig. 3.1: Context Level DFD

3.2. Level-1 DFD

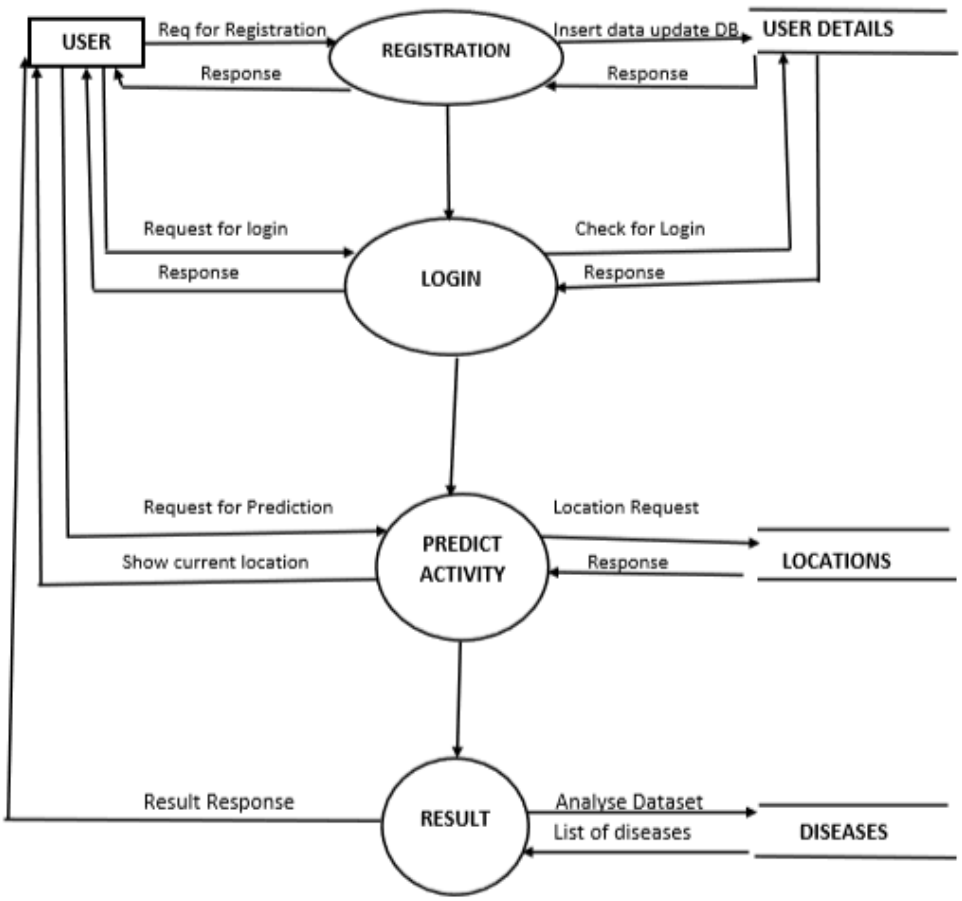


Fig.3.2: Level-1 DFD

3.3. State Transition Diagram

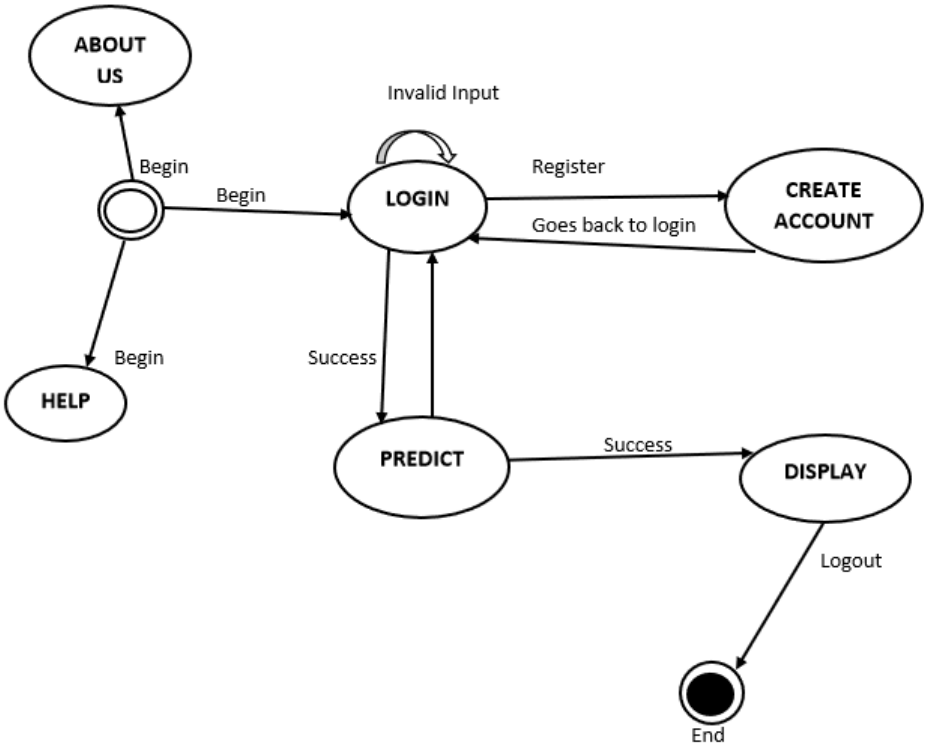


Fig. 3.7: State Transition Diagram

3.4. Class Diagram

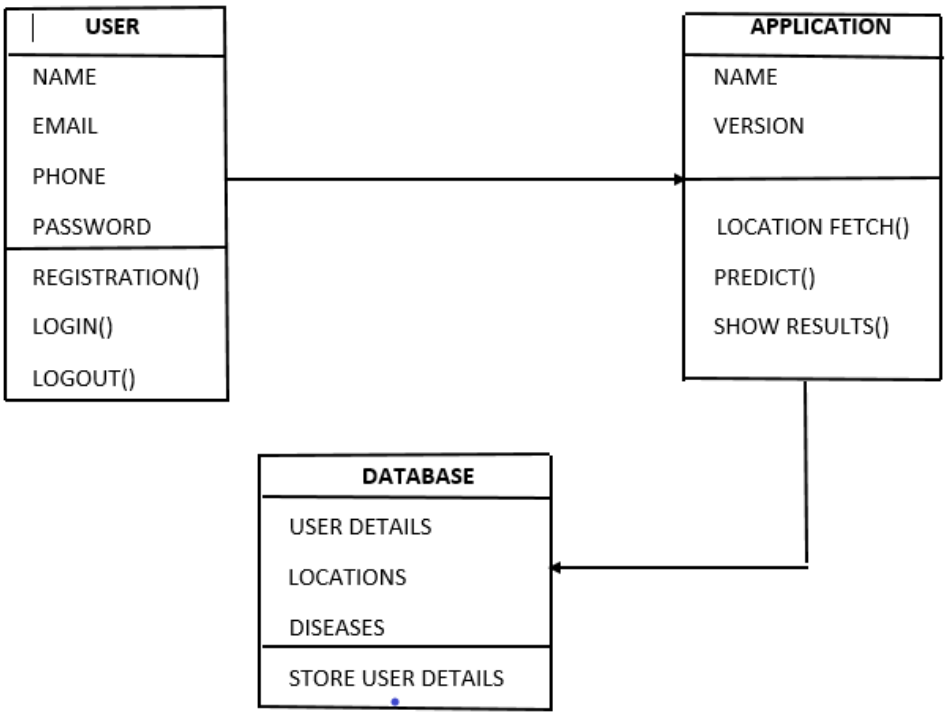


Fig. 3.4: Class Diagram

3.5. E-R DIAGRAM

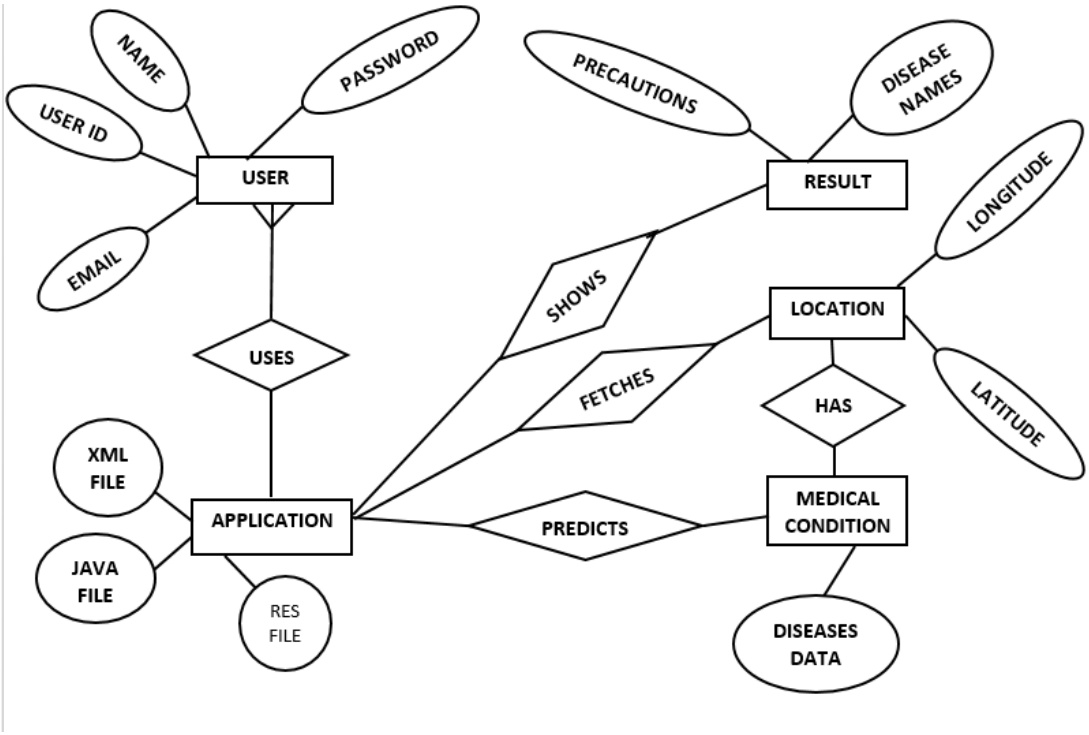


Fig. 3.5: E-R DIAGRAM

4. TESTING

Test Case:

App is tested manually on different versions of Android from SDK 16 to SDK 28.

5. IMPLEMENTATION AND USER INTERFACES

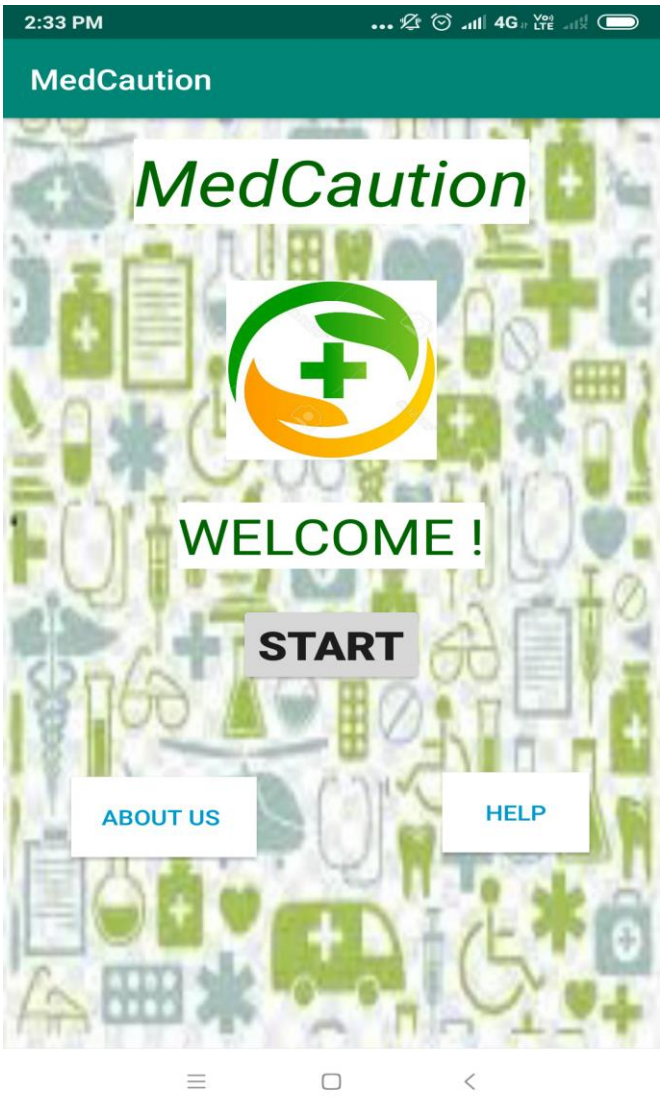


Fig.5.1: Welcome Page

This MedCaution homepage where all the different major functionality or the path to some particular were designed.

This page contains different useful options About, Help, Start and way to Analyze.

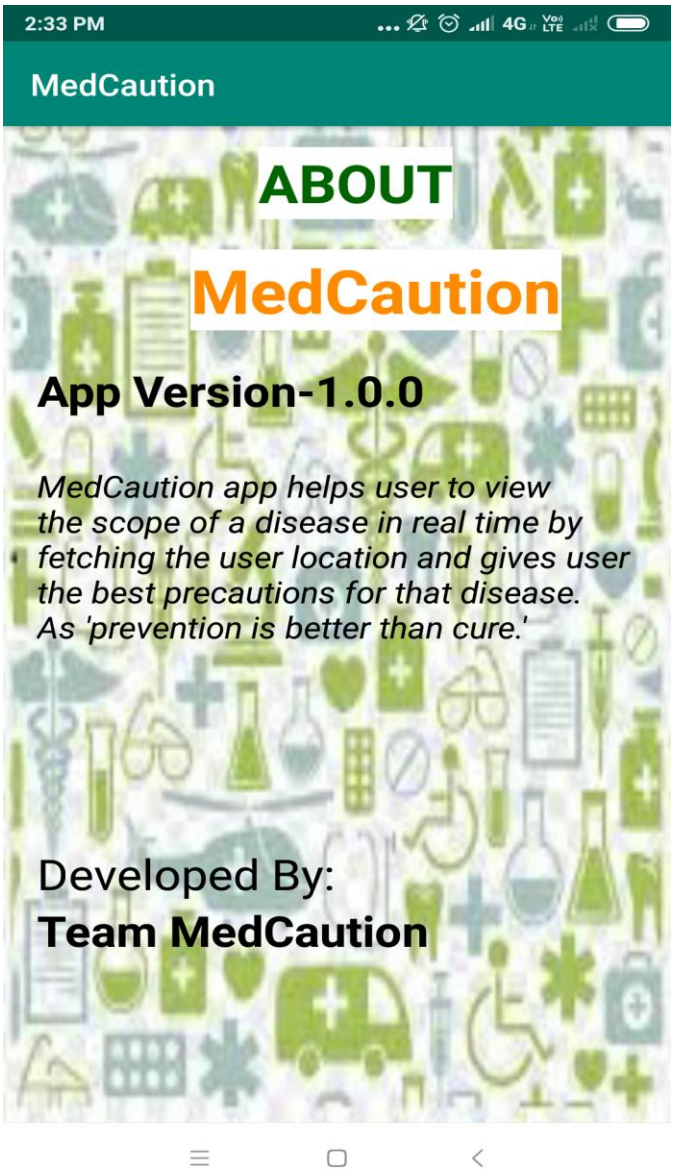


Fig. 5.2: About Us page

This is showing information of this app.

Fig.5.3: Help

This pages is of sitemap and providing steps to use this app.

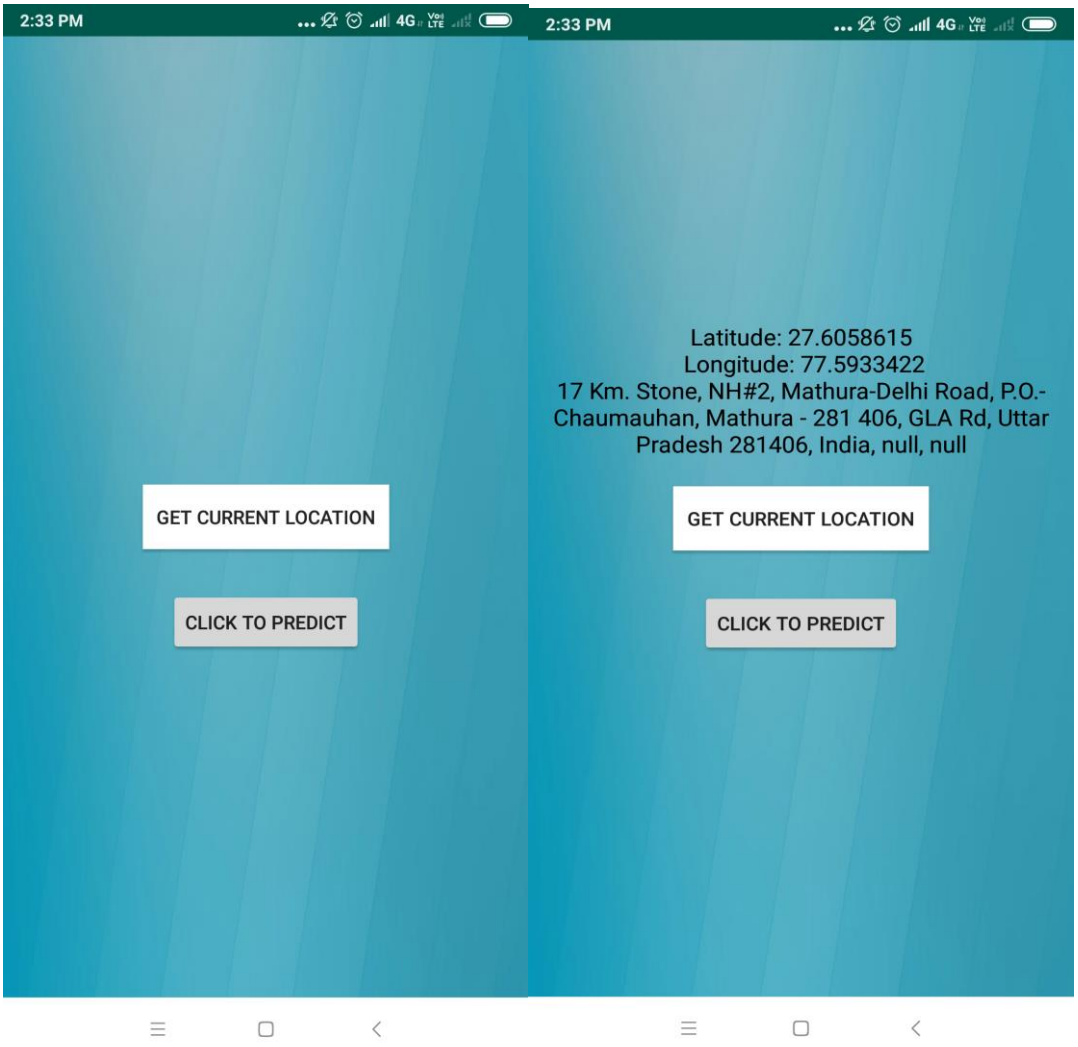
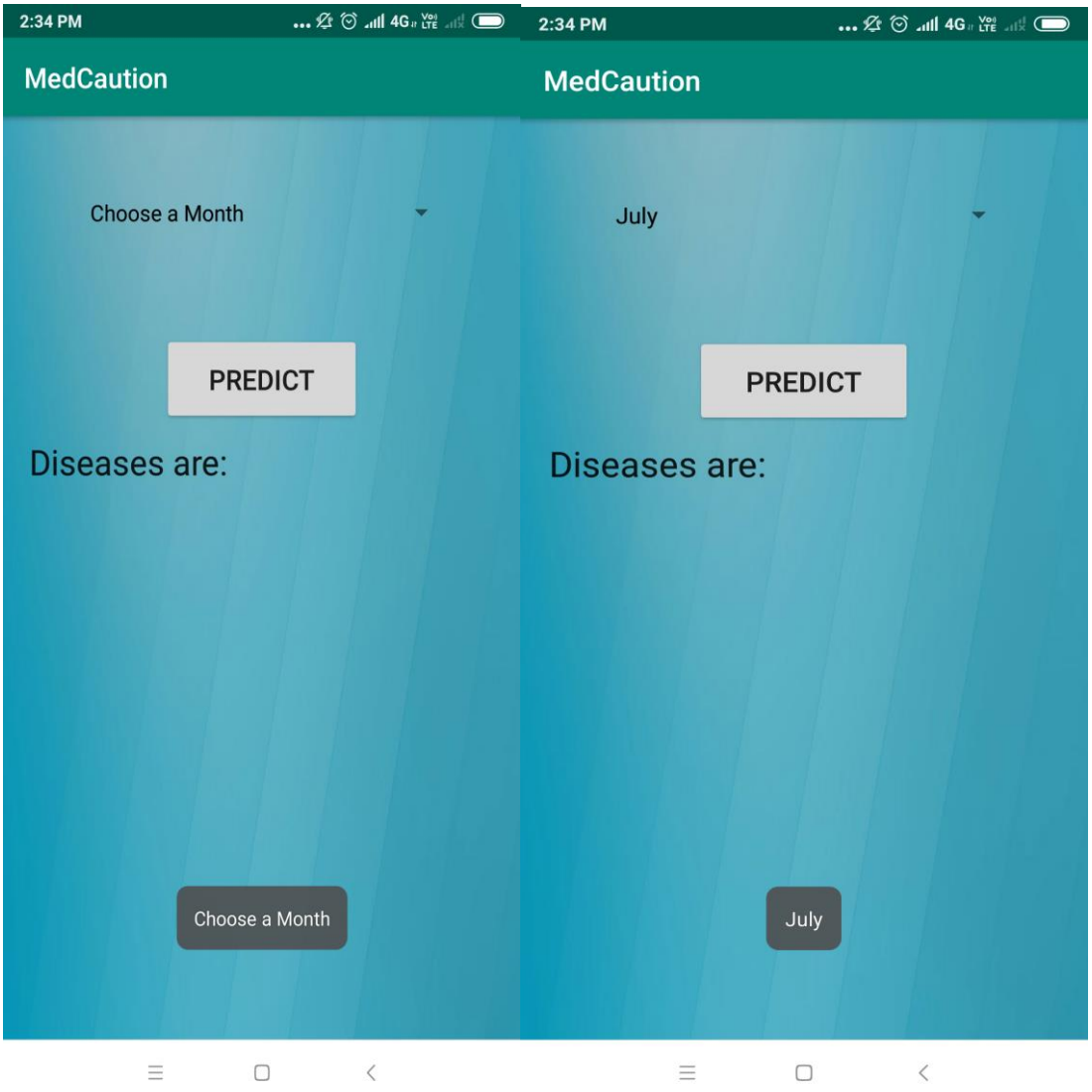


Fig.5.4: Location

This page shows current location of the user.


2:34 PM
MedCaution
Choose a Month
PREDICT
Diseases are:
Choose a Month
2:34 PM
MedCaution
July
PREDICT
Diseases are:
July

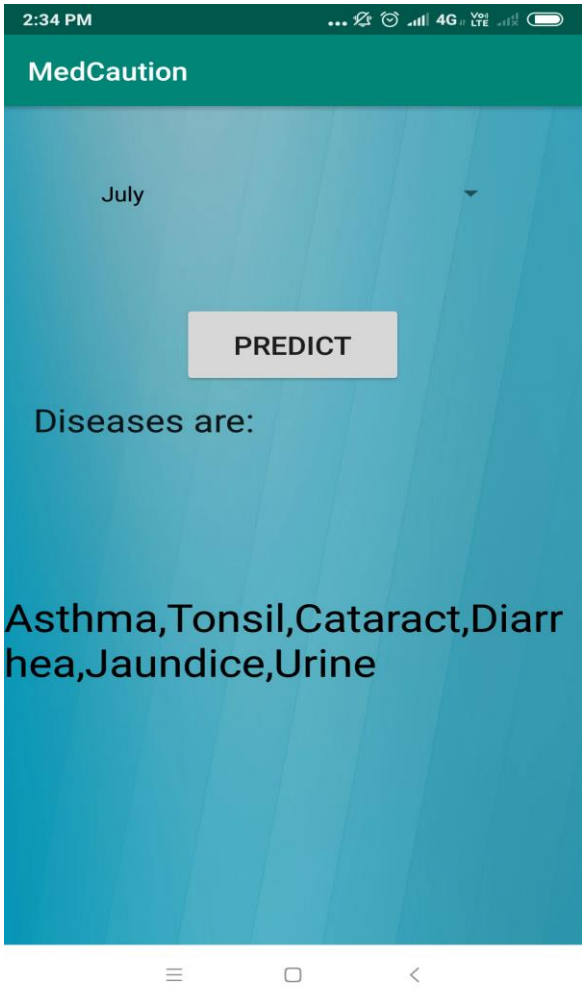


Fig.5.4: Predict Page

This page show the analyzed result of most favourable disease in that month for that location.

6. Conclusion/Bibliography

After completing this project, we concluded that this project was the good opportunity to implement my information that we have learnt during my B.tech program. This project is more informative and more helpful for understanding the concept of the Android Application, Java Programming, R Script, Handling Big data and Databases. This project is only a small implementation of our main idea or motivation regarding this project but it is enough to implement our concept. We can further try much harder to make much more efficient and useful website and software that can benefit to others.

Bibliography

Following are the links from which all the information have been taken :

1.github.com

2. https://firebase.google.com/

3. https://developer.android.com/docs

4. https://github.com/Shashikumar998/Miniproject-MedicalConditionPredictionApp

5. https://www.letsnurture.com/services/android-mobile-application-devel

6. stackoverflow.com

7. Apendices

Fig.7.1: Source code of App.

welcome.xml

```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout
    xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="wrap_content"
    android:background="@drawable/logo2"
    android:orientation="vertical"
    android:gravity="center"
    android:layout_height="match_parent"
    tools:context=".WelcomeActivity">


    <TextView
        android:id="@+id/tv_app"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginTop="-90dp"
        android:layout_marginLeft="10dp"
        android:layout_marginRight="10dp"
        android:background="#ffffff"
        android:text="MedCaution"
        android:textStyle="italic"
        android:textColor="#006400"
        android:textSize="45sp" />


    <ImageView
        android:layout_width="wrap_content"
        android:layout_height="127dp"
        android:layout_marginTop="40dp"
        app:srcCompat="@drawable/logo1" />

    <TextView
        android:id="@+id/tv_result"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="WELCOME !"
        android:textSize="35dp"
        android:textColor="#006400"
        android:layout_marginTop="30dp"
        android:layout_marginLeft="10dp"
        android:layout_marginRight="10dp"
        android:background="#ffffff"/>

    <Button
        android:id="@+id/start"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginTop="25dp"
        android:text="START"
        android:textSize="28dp"
        android:textStyle="bold"
        />


    <Button
        android:id="@+id/aboutus"
```

```
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:padding="18dp"
        android:textSize="15sp"
        android:layout_marginTop="65dp"
        android:layout_marginLeft="-100dp"
        android:background="#ffffff"
        android:text="About Us "
        android:textColor="@android:color/holo_blue_dark"/>
    <Button
        android:id="@+id/start_help_btn"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:padding="18dp"
        android:textSize="15sp"
        android:layout_marginTop="-60dp"
        android:layout_marginLeft="110dp"
        android:background="#ffffff"
        android:text="Help"
        android:textColor="@android:color/holo_blue_dark"/>

</LinearLayout>
```

Welcome.java

```
package
com.example.mymed;

                    import android.content.Intent;
                    import android.support.v7.app.AppCompatActivity;
                    import android.os.Bundle;
                    import android.view.View;
                    import android.widget.Button;


                    public class WelcomeActivity extends AppCompatActivity {


                    private Button Start,about,help;


                        @Override
                        protected void onCreate(Bundle savedInstanceState) {
                            super.onCreate(savedInstanceState);
                            setContentView(R.layout.activity_welcome);
                            Start=(Button)findViewById(R.id.start);
                            about=(Button)findViewById(R.id.aboutus);
                            help=(Button)findViewById(R.id.start_help_btn);
```

```
        Start.setOnClickListener(new View.OnClickListener()
{
            @Override
            public void onClick(View view) {
                Intent intent=new
Intent(WelcomeActivity.this,LocationActivity.class);
                startActivity(intent);
            }
        });


        about.setOnClickListener(new View.OnClickListener()
{
            @Override
            public void onClick(View view) {
                Intent intent=new
Intent(WelcomeActivity.this,AboutUsActivity.class);
                startActivity(intent);



            }
        });
        help.setOnClickListener(new View.OnClickListener()
{
            @Override
            public void onClick(View view) {
                Intent intent=new
Intent(WelcomeActivity.this,HelpActivity.class);
                startActivity(intent);
            }
        });
    }
}
```

Location.java

```
package
com.example.m
ymed;


import android.Manifest;
import android.content.Context;
import android.content.Intent;
```

```
import android.content.pm.PackageManager;
import android.location.Address;
import android.location.Geocoder;
import android.location.Location;
import android.location.LocationListener;
import android.location.LocationManager;
import android.support.v4.app.ActivityCompat;
import android.support.v4.content.ContextCompat;
import android.support.v7.app.AppCompatActivity;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.TextView;
import android.widget.Toast;


import java.util.List;
import java.util.Locale;


public class LocationActivity extends AppCompatActivity
implements LocationListener {


    Button getLocationBtn;
    TextView locationText;
    Button button;


    LocationManager locationManager;


    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_location);


        getSupportActionBar().hide();
        setContentView(R.layout.activity_location);




        button=(Button)findViewById(R.id.button2);
```

```
getLocationBtn=(Button)findViewById(R.id.getLocationBtn);
        locationText=(TextView)findViewById(R.id.locationText);


        button.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                Intent intent= new
Intent(LocationActivity.this,MainActivity.class);
                startActivity(intent);
            }
        });



if(ContextCompat.checkSelfPermission(getApplicationContext(),
android.Manifest.permission.ACCESS_FINE_LOCATION)!=
PackageManager.PERMISSION_GRANTED  &&
ActivityCompat.checkSelfPermission(getApplicationContext(),
android.Manifest.permission.ACCESS_COARSE_LOCATION) !=
PackageManager.PERMISSION_GRANTED) {


            ActivityCompat.requestPermissions(this,new String[]{
Manifest.permission.ACCESS_FINE_LOCATION,
Manifest.permission.ACCESS_COARSE_LOCATION}, 101);
        }


        getLocationBtn.setOnClickListener(new
View.OnClickListener() {
            @Override
            public void onClick(View view) {
                getLocation();


            }
        });
    }
    void getLocation(){
        try{
            locationManager= (LocationManager)
getSystemService(Context.LOCATION_SERVICE);
```

```
locationManager.requestLocationUpdates(LocationManager.NETWORK_P
ROVIDER,5000,5,this);
        }
        catch(SecurityException e){
            e.printStackTrace();
        }
    }


    public void onLocationChanged(Location location){


        locationText.setText("Latitude: " +
location.getLatitude() + "\n Longitude: " +
location.getLongitude());
        locationText.setText("Latitude: " +
location.getLatitude() + "\n Longitude: " +
location.getLongitude());
        locationText.setText("Latitude: " +
location.getLatitude() + "\n Longitude: " +
location.getLongitude());


        try{
            Geocoder geocoder= new Geocoder(this,
Locale.getDefault());
            List<Address> addresses =
geocoder.getFromLocation(location.getLatitude(),
location.getLongitude(),1);
            locationText.setText(locationText.getText() + "\n"+
addresses.get(0).getAddressLine(0)+", "+
                    addresses.get(0).getAddressLine(1)+",
"+addresses.get(0).getAddressLine(2));


        }
        catch(Exception e)
        {


        }
    }
```

```
        @Override
        public void onStatusChanged(String s, int i, Bundle bundle)
    {

        }

        @Override
        public void onProviderEnabled(String s) {

        }

        @Override
        public void onProviderDisabled(String provider) {
            Toast.makeText(LocationActivity.this, "Please Enable GPS
    and Internet", Toast.LENGTH_SHORT).show();

        }
    }
```

Predict.java

```
package
com.exampl
e.mymed;

import android.support.annotation.NonNull;
import android.support.v7.app.AppCompatActivity;
import android.os.Bundle;
import android.view.View;
import android.widget.AdapterView;
import android.widget.ArrayAdapter;
import android.widget.Button;
import android.widget.Spinner;
import android.widget.TextView;
import android.widget.Toast;
```

```
import com.google.firebase.database.DataSnapshot;
import com.google.firebase.database.DatabaseError;
import com.google.firebase.database.DatabaseReference;
import com.google.firebase.database.FirebaseDatabase;
import com.google.firebase.database.ValueEventListener;


public class MainActivity extends AppCompatActivity implements
AdapterView.OnItemSelectedListener {


    String[] month={"Choose a
Month","January","February","March","April","May","June","July","Au
gust","September","October","November","December"};


    TextView tv;
    Button predict;
    Spinner spin;
    DatabaseReference reff;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);


        tv=(TextView)findViewById(R.id.tv);
        predict=(Button)findViewById(R.id.button);
        spin=(Spinner)findViewById(R.id.spinner);
        spin.setOnItemSelectedListener(this);


        ArrayAdapter aa =new
ArrayAdapter(this,android.R.layout.simple_spinner_dropdown_item,mon
th);

aa.setDropDownViewResource(android.R.layout.simple_spinner_dropdown
_item);
        spin.setAdapter(aa);
```

```
        predict.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {


                String m= spin.getSelectedItem().toString();




                reff=
FirebaseDatabase.getInstance().getReference().child("Member").child
(m);
                reff.addValueEventListener(new ValueEventListener()
{
                    @Override
                    public void onDataChange(@NonNull DataSnapshot
dataSnapshot) {
                        String Diseases =
dataSnapshot.child("Diseases").getValue().toString();
                        tv.setText(Diseases);


                    }


                    @Override
                    public void onCancelled(@NonNull DatabaseError
databaseError) {


                    }
                });
            }
        });


    }


    @Override
    public void onItemSelected(AdapterView<?> adapterView, View
view, int position, long id) {
```

```
Toast.makeText(getApplicationContext(),month[position],Toast.LENGTH
_LONG).show();


    }


    @Override
    public void onNothingSelected(AdapterView<?> adapterView) {




    }
}
```

R Script:

```
month<-readline(prompt="Enter Month")

data<-read.csv("medication.excel.csv")

dis<-data$Diseases

dat<-data$Date..MM.DD.YYYY.

mon<-month(as.POSIXlt(dat,format="%m/%d/%Y"))

dis<-data.frame(dis)

mon<-data.frame(mon)

cmd<-data.frame(dis,mon)

occur<-table(cmd$dis,cmd$mon)

occur<-data.frame(occur)

o<-occur[occur$Freq>0,]

n<-o[o$Var2==month,]

table(n$Var1)

View(n$Var1)
```

Thank you!