ITCS 6162

SOFTWARE SYSTEM DESIGN AND IMPLEMENTATION

PROJECT REPORT ON

MEDICARE

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ABSTRACT

Prevention is better than cure- In the era of technology, mobile applications have taken a major place in people’s life. It can help people do various things including save someone’s life. People tend to suffer or sometimes even die from certain diseases which could easily be cured if those were known beforehand. This inspired us to build a mobile application that helps people predict illness based on the provided symptoms.

In this application, the user can sign up and login later to enter symptoms and check the predicted disease to help take further steps to cure the disease.

This has been developed as a mobile application using Android studio with java as the programming language and SQLite as the database to store user information and symptoms of diseases.

PROBLEM DEFINITION

It is generally seen that people do not take the issue of their health seriously and simply ignore it because of the tedious process it involves. It can be made easier through this mobile app by trying to find out the disease just by providing the symptoms. This app helps user to diagnose a disease in real time by providing the various symptoms. These symptoms provided are then processed to predict the illness. There can be more than one illness predicted for a same set of symptoms. There will be details provided about the predicted disease and a general medicine will be prescribed for the patient to take precautionary actions.

The drawback of the existing approach which includes taking appointments and the wait time involved can be inconvenient to the user and sometimes life threatening. The actual treatment starts only after consultation and related check ups which may take a long time. The initial diagnosis can be performed through the app hence preventing this wait time.

BACKGROUND AND IMPLEMENTATION

A mobile app is a software application developed specifically for use on small, wireless computing devices, such as smart phones and tablets, rather than desktop or laptop computers. Mobile applications are available at different application stores over the internet which are specific platform based. Some of the popular application stores are Google Play Store, Apple App Store.

The application we have developed contains four pages which are:

- Login page- The user can login using registered Email ID and password or signup if the user is new to the application
- Signup page- The user can signup by entering the details such as username, Email ID, password, DOB, height and weight
- Symptom page- The user enters all the symptoms that is being faced
- Result page- As per the symptoms entered, the disease will be predicted and displayed on the result page. There can be multiple diseases that are predicted for the same symptoms. There will be a description provided for the predicted disease with a suitable general medicine for a precautionary action

FEASIBILITY STUDY

The traditional approach to solve this problem can be a tedious process. It includes taking an appointment, visiting the doctor, the required tests that need to be performed, waiting for the results of the tests and finally knowing what the illness or the disease is. Taking appropriate medicines and recovering from the illness is also included in the long process. Sometimes getting appointments in an emergency can be difficult to get and hence making the patient wait for long. All these might increase the symptoms and can be a threat to the patient.

Keeping these problems in mind and to help the patients avoid the long waits for results and the wait for appointments. This application tries to solve these issues and makes the work of a patient easier by helping to predict the disease. This application can be used during such situations to take some precautionary measures so that it doesn't cause a threat to the patient. Later it can be confirmed with a doctor and accordingly help the patient to recover from the illness or disease.

The application mainly focuses on predicting the disease and the percentage of each depending on the symptoms. The patient is given an option to enter any number of symptoms that the patient is facing and hence gives results according to the symptoms entered. The result can be a set of illness and percentages are given based on the symptoms. The patient can take preliminary precautions based on the predictions.

The proposed system:

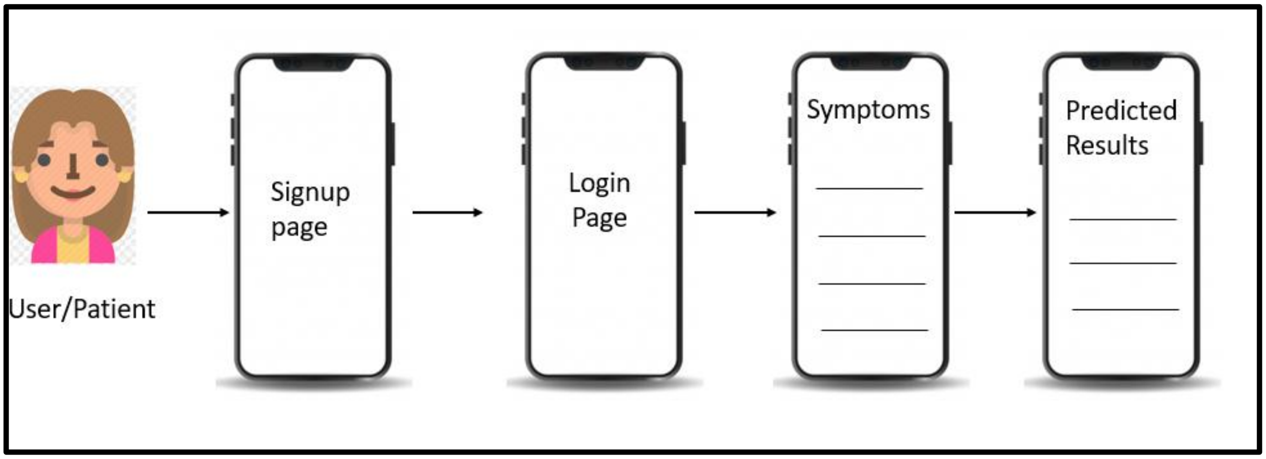


Figure 1: Proposed system of predictor

Economic Feasibility

The application is economic since it can be accessed free on play store/app store, hence cost effective to the user as it reduces the visits to hospital during an emergency. The application is also time effective since it prevents the long waits for the patient and the whole process of appointment and the tests and finally obtaining the results

Technical Feasibility

This application requires a smart phone; hence it is technically feasible as it does not require any extra software or hardware. Play store or app store is sufficient to download this app and use it on the go

Behavioral Feasibility

The application is easy to learn, it does not require separate training, the interface is easy to grasp, and appropriate results can be obtained in the precautionary stage. Symptoms are to be known correctly and once these symptoms are entered in the app, it is matched with the database and the results are predicted

MATERIALS AND METHODS

This application is built using android studio to develop the application and SQLite is used as the database to store and update the diseases and its symptoms.

Four screens/pages namely- signup page, login page, symptom page and the result/predictor page of the application are created using android studio and SQLite helps to store the data with which the disease can be predicted as per the symptoms entered by the patient

Software Methodology

The application mainly focuses on predicting disease/illness and hence there are inevitable changes that are to be made to the database. Additions of symptoms to diseases, adding of more diseases and their symptoms are some of the changes that needs to be done constantly. These changes made us choose agile methodology which is a software development methodology which helped us build the application incrementally using short iterations so that our process of development is aligned with the changing user requirements. The agile software development emphasizes on individual and team interactions over processes and tools, but the user is given the most preference. We have designed the application keeping the user in mind and the changes that needs to be done often.

The user requirements were gathered using the general symptoms all the patients face when there is a particular illness/disease. Online resources were considered to find out more symptoms of the diseases as symptoms can vary from every patient. More information must be considered for such an application since every patient may face different symptoms.

A lot of considerations were made, and an extensive research was made on different online resources to make the application more precise since it is a matter of a patient’s health and the predictor must be very precise.

SOFTWARE, HARDWARE AND TECHNICAL REQUIREMENTS

Software Requirements:

- Android Studio: To develop the screens and the interface for the patient to use and predict the disease according to the symptoms entered
- SQLite: To store the symptoms of diseases and predict accordingly
- Java: As the programming language
- XML: For the layout in Android studio

Hardware Requirements:

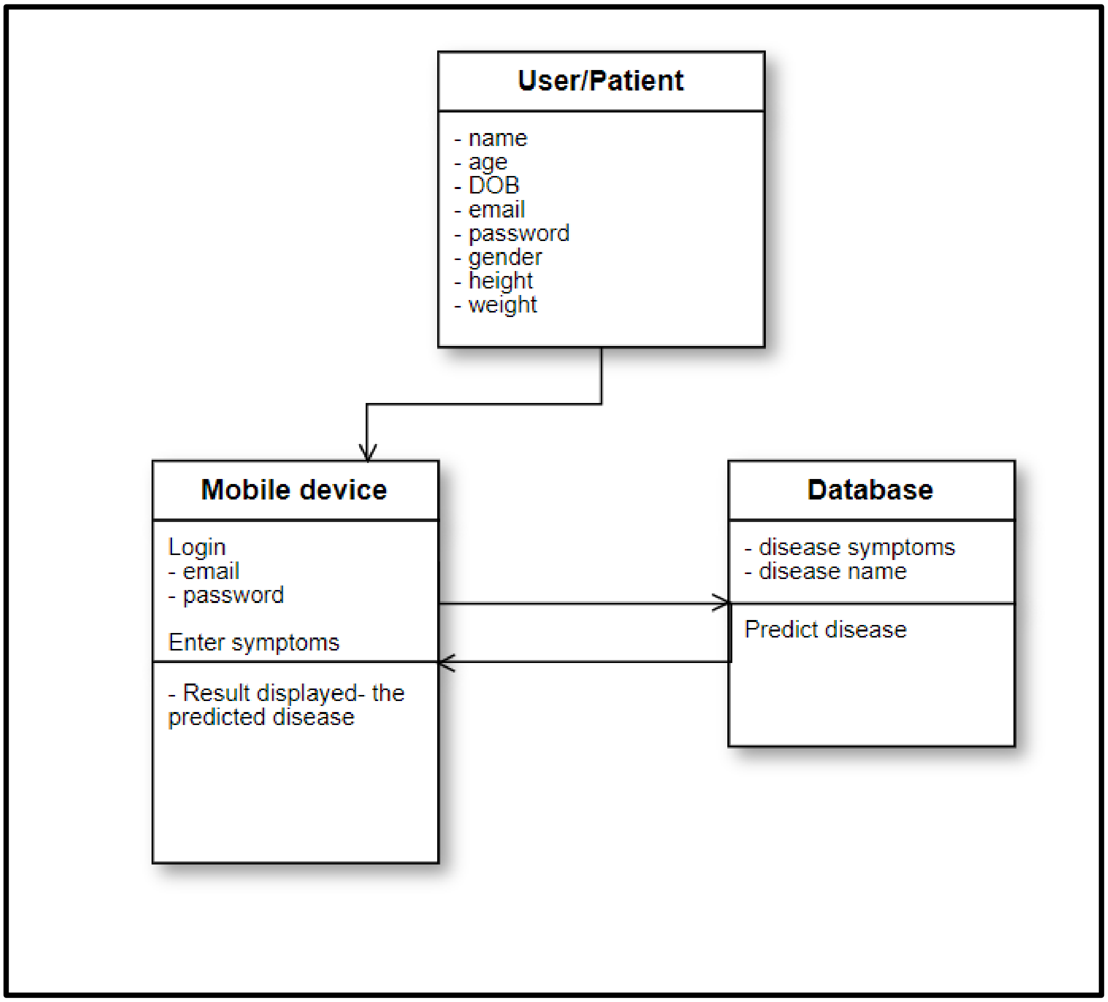
- RAM: 8GB
- Processor: i5

Hardware requirements to view and use the application: A smartphone is the only requirement to view and use the application

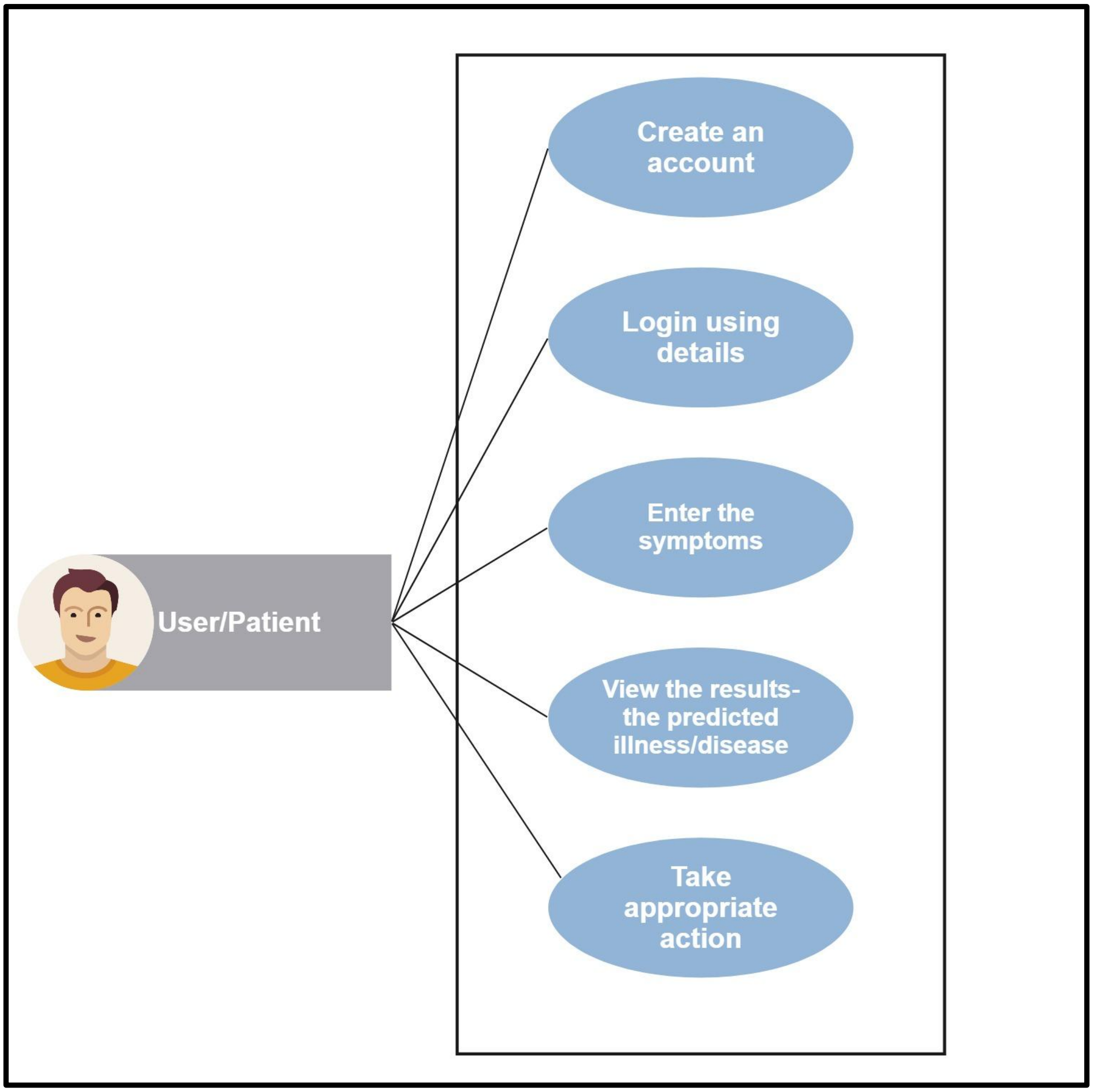
DESIGN SPECIFICATIONS FOR THE APPLICATION

UML Diagrams:

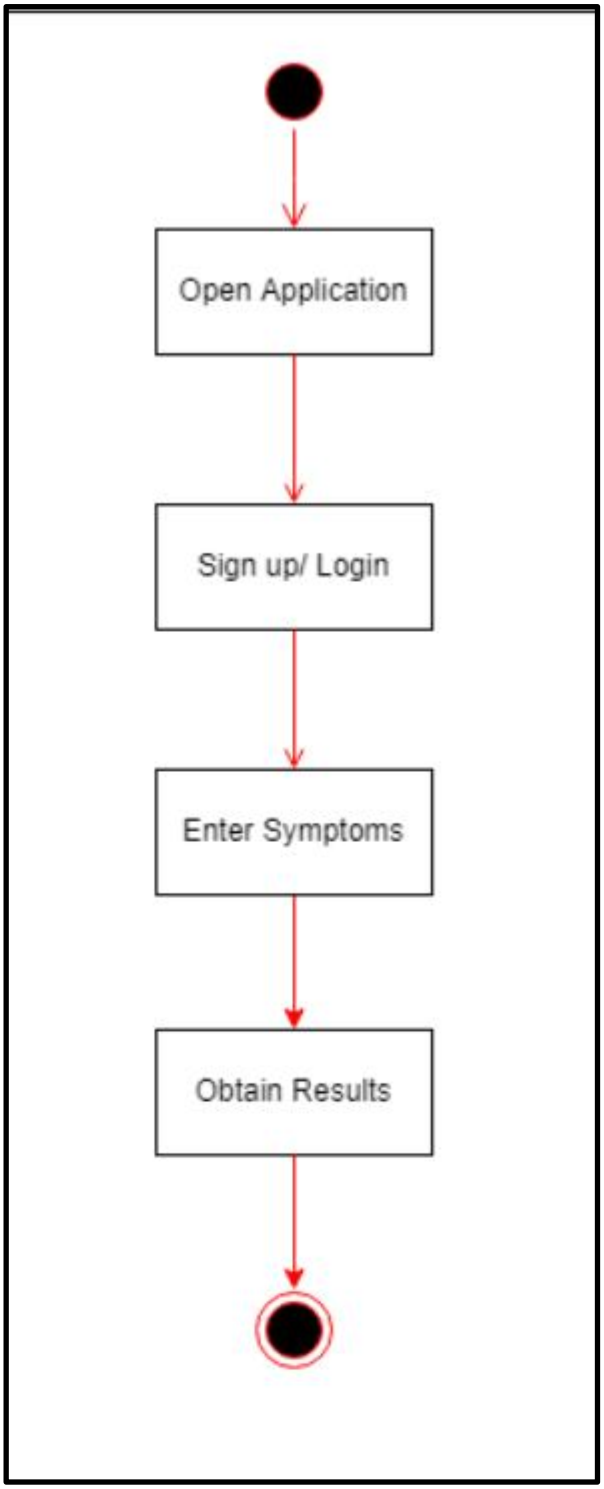
1) Class Diagram:



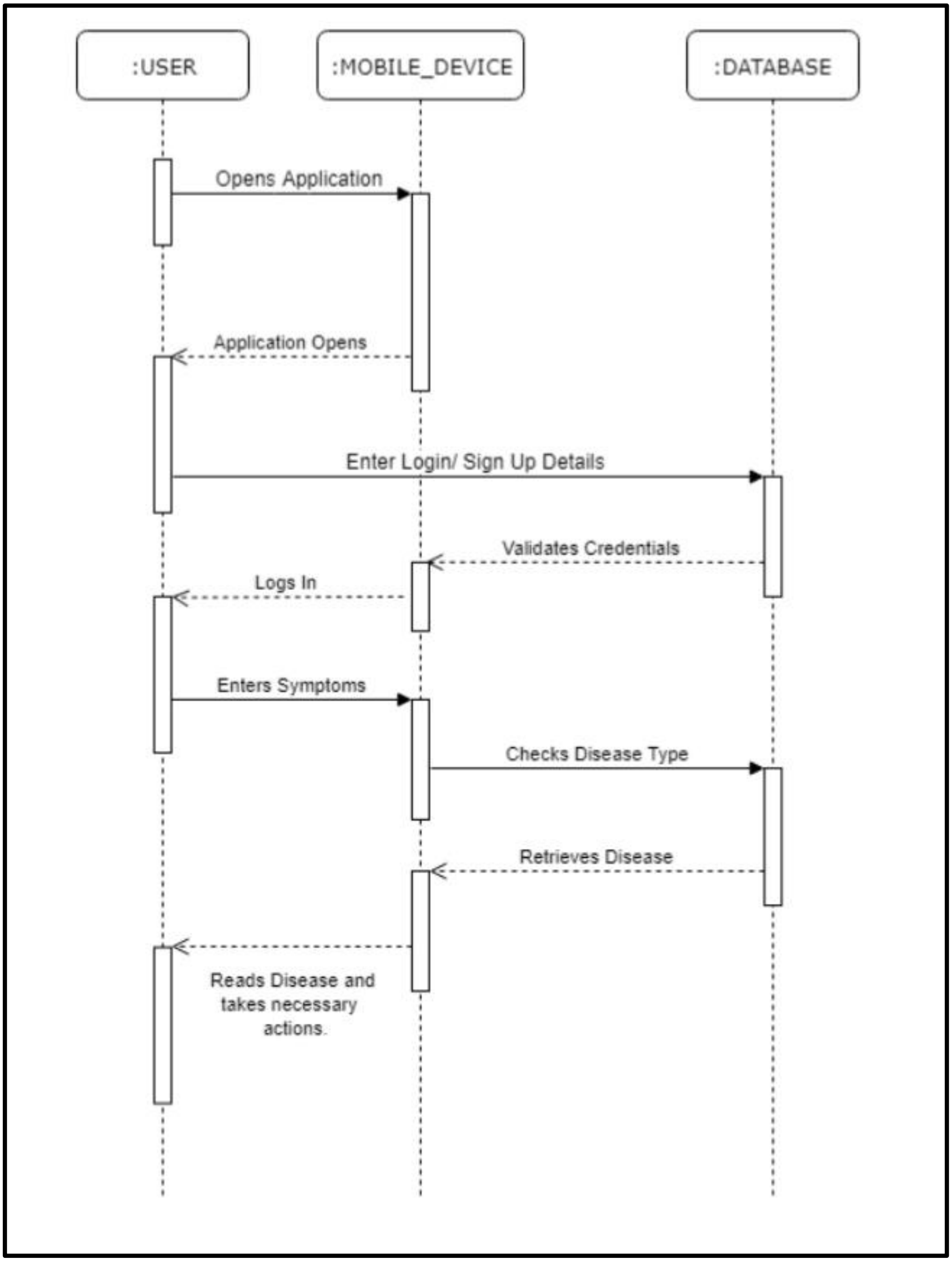
2) Use Case Diagram:



3) Activity Diagram:



4) Sequence Diagram:



Coding

Main Activity:

```
package com.example.tanma.medicare2;

import android.content.Intent;
import android.database.Cursor;
import android.support.v7.app.AppCompatActivity;
import android.os.Bundle;
import android.util.Log;
import android.view.View;
import android.widget.ArrayAdapter;
import android.widget.Button;
import android.widget.EditText;
import android.widget.ListView;
import android.widget.TextView;
import android.widget.Toast;

import java.util.ArrayList;

public class MainActivity extends AppCompatActivity {
  @Override
  protected void onCreate(Bundle savedInstanceState) {
     super.onCreate(savedInstanceState);
     setContentView(R.layout.activity_ssdihealth_predictor1);
     int signUpButtonId = R.id.SignUpbutton;
     int signInButtonId = R.id.signInbutton;
```

```
    Button signUpButton = (Button) findViewById(signUpButtonId);
    Button signInButton = (Button) findViewById(signInButtonId);
    signUpButton.setOnClickListener(new View.OnClickListener() {
      @Override
      public void onClick(View view) {
        Intent intent = new Intent(MainActivity.this, SignUpPage.class );
        startActivity(intent);
      }
    });

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

Sign Up Page:

```
package com.example.tanma.medicare2;

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

```
public class SignUpPage extends AppCompatActivity {

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

    int registerId = R.id.registerButton3;
    int cancelId = R.id.cancelButton;

    Button registerButton = (Button) findViewById(registerId);
    Button cancelButton = (Button) findViewById(cancelId);

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

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

SSDI Health Predictor:

```
package com.example.tanma.medicare2;

import android.content.Intent;
import android.database.Cursor;
import android.os.Bundle;
import android.support.v7.app.AppCompatActivity;
import android.view.View;
import android.widget.ArrayAdapter;
import android.widget.Button;
import android.widget.EditText;
import android.widget.ListView;
import android.widget.TextView;
import android.widget.Toast;

import java.util.ArrayList;
import java.util.StringTokenizer;

public class SSDIHealthPredictor extends AppCompatActivity {

  Databasehelper mydb;
  int influenza = 0, dehydration = 0, asthama = 0;
  public static String result;
```

```
@Override
protected void onCreate(Bundle savedInstanceState) {
    super.onCreate(savedInstanceState);
    setContentView(R.layout.layout);
    Button adds = (Button) findViewById(R.id.button2);
    Button diag = (Button) findViewById(R.id.button);
    final EditText sym = (EditText) findViewById(R.id.editText);
    final ListView lv = (ListView) findViewById(R.id.list);
    final ListView lv2 = (ListView) findViewById(R.id.list2);
    //final TextView tv=(TextView)findViewById(R.id.textView3);
    mydb = new Databasehelper(this);
    boolean g = mydb.insert();
    if (g == true) {
        Toast.makeText(SSDIHealthPredictor.this, "Inserted", Toast.LENGTH_SHORT).show();

    }
    diag.setOnClickListener(new View.OnClickListener() {
        @Override
        public void onClick(View v) {
            String answer = "influenza";
            if (influenza > dehydration) {
                if (influenza > asthama) {
                    answer = "influenza";
                } else
                    answer = "asthma";
            }
            if (dehydration > influenza) {
                if (dehydration > asthama)
```

```
                    answer = "dehydration";
                else
                    answer = "asthma";
            }
            if (asthama > influenza) {
                if (asthama > dehydration)
                    answer = "asthma";
                else
                    answer = "dehydration";
            }
            //Toast.makeText(SSDIHealthPredictor.this,"Your Diagnosis : "+answer,Toast.LENGTH_LONG).show();
            //tv.setText("Your Diagnosis is : "+answer);
            result = answer;
            Intent intent = new Intent(SSDIHealthPredictor.this, ResultActivity.class);
            startActivity(intent);
        }
    });
    final ArrayList symlist = new ArrayList();
    final ArrayList addedsymp = new ArrayList();
    adds.setOnClickListener(new View.OnClickListener() {
        @Override
        public void onClick(View v) {
            String a = sym.getText().toString();
            addedsymp.add(a);
            ArrayAdapter adapter2 = new ArrayAdapter<String>(SSDIHealthPredictor.this, android.R.layout.simple_list_item_1, addedsymp);
            lv2.setAdapter(adapter2);
            sym.setText("");
```

```
                Cursor res = mydb.getall();
                while (res.moveToNext()) {

                    if (res.getString(1).toString().equals(a)) {

                        if (res.getString(0).toString().equals("influenza")) {
                            influenza = influenza + 1;
                            if (influenza == 1)
                                symlist.add("influenza");
                        }
                        if (res.getString(0).toString().equals("dehydration")) {
                            dehydration = dehydration + 1;
                            if (dehydration == 1)
                                symlist.add("dehydration");
                        }
                        if (res.getString(0).toString().equals("asthma")) {
                            asthama = asthama + 1;
                            if (asthama == 1)
                                symlist.add("asthma");
                        }
                    }
                }
                ArrayAdapter adapter = new ArrayAdapter<String>(SSDIHealthPredictor.this, android.R.layout.simple_list_item_1, symlist);
                lv.setAdapter(adapter);
            }
        });
    }
}
```

Result Activity:

```
package com.example.tanma.medicare2;

import android.support.v7.app.AppCompatActivity;
import android.os.Bundle;
import android.widget.TextView;
import android.widget.Toast;

public class ResultActivity extends AppCompatActivity {

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

    TextView resultview = (TextView) findViewById(R.id.textViewResult);

    TextView descriptionView = (TextView) findViewById(R.id.textViewDescription);
    String answer = SSDIHealthPredictor.result;

    if (answer.equals("influenza")) {
      descriptionView.setText("The flu is treated primarily with rest and fluid to let the body fight the infection on its own. Over-the-counter anti-inflammatory pain relievers may help with symptoms. \n" +
          "\n" +
          "General medicine:  Oseltamivir (Tamiflu) is a medication you take by mouth, zanamivir (Relenza) is inhaled, and peramivir (Rapivab) is given into a vein.");
    }
    if (answer.equals("dehydration")) {
      descriptionView.setText("You can usually reverse mild to moderate dehydration by
drinking more fluids, but severe dehydration needs immediate medical treatment\n" +
          "\n" +
          "General medicine: Infants and children respond well to fluid replacement, and
often oral rehydration therapy (ORT) can treat dehydration");
    }

    if (answer.equals("asthma")) {
      descriptionView.setText("Asthma may cause difficulty breathing, chest pain, cough, and
wheezing. The symptoms may sometimes flare-up\n" +
          "\n" +
          "General medicine: Asthma can usually be managed with rescue inhalers to treat
symptoms (albuterol)");
    }

    resultview.setText("Your Diagnosis : " + answer);
    //Toast.makeText(ResultActivity.this,"Your Diagnosis :
"+answer,Toast.LENGTH_LONG).show();
  }
}
```

Database Helper:

```
package com.example.tanma.medicare2;

import android.content.ContentValues;
import android.content.Context;
import android.database.Cursor;
import android.database.sqlite.SQLiteDatabase;
import android.database.sqlite.SQLiteOpenHelper;
import android.widget.Toast;


public class Databasehelper extends SQLiteOpenHelper {
  public static final String DBNAME = "sym.db";
  public static final String TBNAME = "sym";
  public static final String col1 = "id";
  public static final String col2 = "diagnosis";
  public static final String col3 = "symptom";


  public Databasehelper(Context context) {
    super(context, DBNAME, null, 1);
    SQLiteDatabase db = this.getWritableDatabase();

  }

  @Override
  public void onCreate(SQLiteDatabase db) {
    db.execSQL("create table " + TBNAME + " (diagnosis TEXT,symptom TEXT)");
}

@Override
public void onUpgrade(SQLiteDatabase db, int oldVersion, int newVersion) {

}

public boolean insert() {
    SQLiteDatabase db = this.getWritableDatabase();

    ContentValues cv = new ContentValues();

    cv.put(col2, "asthma");
    cv.put(col3, "cough");
    db.insert(TBNAME, null, cv);

    cv.put(col2, "asthma");
    cv.put(col3, "chill");
    db.insert(TBNAME, null, cv);

    cv.put(col2, "asthma");
    cv.put(col3, "fatigue");
    db.insert(TBNAME, null, cv);

    cv.put(col2, "asthma");
    cv.put(col3, "shortness of breath");
```

```
db.insert(TBNAME, null, cv);

cv.put(col2, "asthma");
cv.put(col3, "backpain");
db.insert(TBNAME, null, cv);

cv.put(col2, "dehydration");
cv.put(col3, "fever");
db.insert(TBNAME, null, cv);

cv.put(col2, "dehydration");
cv.put(col3, "vomiting");
db.insert(TBNAME, null, cv);

cv.put(col2, "dehydration");
cv.put(col3, "nausea");
db.insert(TBNAME, null, cv);

cv.put(col2, "dehydration");
cv.put(col3, "blackout");
db.insert(TBNAME, null, cv);

cv.put(col2, "dehydration");
cv.put(col3, "fatigue");
db.insert(TBNAME, null, cv);

cv.put(col2, "influenza");
cv.put(col3, "fever");
```

```
        db.insert(TBNAME, null, cv);

        cv.put(col2, "influenza");
        cv.put(col3, "sore throat");
        db.insert(TBNAME, null, cv);

        cv.put(col2, "influenza");
        cv.put(col3, "chill");
        db.insert(TBNAME, null, cv);

        cv.put(col2, "influenza");
        cv.put(col3, "headache");
        db.insert(TBNAME, null, cv);

        cv.put(col2, "influenza");
        cv.put(col3, "sneeze");
        long result = db.insert(TBNAME, null, cv);
        if (result == -1)
            return false;
        else
            return true;

    }

    public Cursor getall() {
        SQLiteDatabase db = this.getReadableDatabase();
        Cursor res = db.rawQuery("select * from sym", null);
        return res;
```

```
  }
}
```

AndroidManifest.xml

```
<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
  package="com.example.tanma.medicare2">

  <application
    android:allowBackup="true"
    android:icon="@mipmap/ic_launcher"
    android:label="@string/app_name"
    android:roundIcon="@mipmap/ic_launcher_round"
    android:supportsRtl="true"
    android:theme="@style/AppTheme">
    <activity android:name=".MainActivity">
      <intent-filter>
        <action android:name="android.intent.action.MAIN" />

        <category android:name="android.intent.category.LAUNCHER" />
      </intent-filter>
    </activity>
    <activity android:name=".SignUpPage" />
    <activity android:name=".SSDIHealthPredictor" />
    <activity android:name=".ResultActivity"></activity>
  </application>

</manifest>
```

activity_ssdihealth_predictor1.xml

```
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout 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:id="@+id/mainRelativeLayout"
  android:layout_width="match_parent"
  android:layout_height="match_parent">

  <TextView
     android:id="@+id/textView"
     android:layout_width="wrap_content"
     android:layout_height="wrap_content"
     android:layout_alignParentStart="true"
     android:layout_alignParentTop="true"
     android:layout_marginStart="61dp"
     android:layout_marginTop="200dp"
     android:text="Email" />

  <EditText
     android:id="@+id/emailEditText"
     android:layout_width="wrap_content"
     android:layout_height="wrap_content"
     android:layout_alignBaseline="@+id/textView"
     android:layout_alignBottom="@+id/textView"
     android:layout_marginStart="18dp"
     android:layout_toEndOf="@+id/textView"
```

```
    android:ems="10"
    android:inputType="textPersonName" />

<TextView
    android:id="@+id/passwordTextView"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_alignParentStart="true"
    android:layout_below="@+id/emailEditText"
    android:layout_marginStart="48dp"
    android:layout_marginTop="54dp"
    android:text="Password" />

<EditText
    android:id="@+id/PasswordEditText"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_alignBaseline="@+id/passwordTextView"
    android:layout_alignBottom="@+id/passwordTextView"
    android:layout_alignEnd="@+id/emailEditText"
    android:layout_alignStart="@+id/emailEditText"
    android:ems="10"
    android:inputType="textPassword"
    android:textAppearance="@android:style/TextAppearance.WindowTitle" />

<Button
    android:id="@+id/signInbutton"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_below="@+id/PasswordEditText"
    android:layout_marginTop="63dp"
    android:layout_toEndOf="@+id/textView"
    android:text="Sign In"
    android:background="@android:color/holo_blue_bright"/>

  <Button
    android:id="@+id/SignUpbutton"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_alignEnd="@+id/PasswordEditText"
    android:layout_alignTop="@+id/signInbutton"
    android:text="Sign Up"
    android:background="@android:color/holo_blue_bright"/>

  <ImageView
    android:id="@+id/imageView2"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    app:srcCompat="@drawable/doclogo"
    android:layout_alignParentTop="true"
    android:layout_centerHorizontal="true"
    android:layout_marginTop="36dp" />
</RelativeLayout>
```

activity_sign_up.xml

```xml
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
  xmlns:app="http://schemas.android.com/apk/res-auto"
  android:layout_width="match_parent" android:layout_height="match_parent">

  <EditText
    android:id="@+id/nameEditText"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_marginTop="43dp"
    android:ems="10"
    android:inputType="textPersonName"
    android:layout_alignParentTop="true"
    android:layout_alignParentEnd="true" />

  <TextView
    android:id="@+id/emailTextView"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_below="@+id/nameEditText"
    android:layout_marginTop="26dp"
    android:text="Email"
    android:layout_alignStart="@+id/dateOfBirthTextView" />

  <EditText
    android:id="@+id/emailEditText"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:ems="10"
    android:inputType="textPersonName"
    android:layout_alignBaseline="@+id/emailTextView"
    android:layout_alignBottom="@+id/emailTextView"
    android:layout_alignParentEnd="true" />

<TextView
    android:id="@+id/dateOfBirthTextView"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_below="@+id/emailEditText"
    android:layout_marginTop="27dp"
    android:text="Date of Birth"
    android:layout_alignStart="@+id/heightTextView" />

<EditText
    android:id="@+id/dateOfBirthEditText"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_alignEnd="@+id/emailEditText"
    android:layout_alignStart="@+id/registerButton"
    android:layout_below="@+id/emailEditText"
    android:layout_marginTop="13dp"
    android:ems="10"
    android:inputType="textPersonName" />

<TextView
    android:id="@+id/heightTextView"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_below="@+id/dateOfBirthEditText"
    android:layout_marginTop="26dp"
    android:text="Height"
    android:layout_alignStart="@+id/WeightTextView" />

<EditText
    android:id="@+id/heightEditText"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_alignEnd="@+id/dateOfBirthEditText"
    android:layout_below="@+id/dateOfBirthEditText"
    android:layout_marginTop="11dp"
    android:ems="10"
    android:inputType="textPersonName" />

<TextView
    android:id="@+id/WeightTextView"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_below="@+id/heightEditText"
    android:layout_marginTop="28dp"
    android:text="Weight"
    android:layout_alignStart="@+id/passwordTextView" />

<EditText
    android:id="@+id/weightEditText"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_alignStart="@+id/heightEditText"
    android:layout_below="@+id/heightEditText"
    android:layout_marginTop="14dp"
    android:ems="10"
    android:inputType="textPersonName" />

<TextView
    android:id="@+id/passwordTextView"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_marginTop="26dp"
    android:text="Password"
    android:layout_marginStart="23dp"
    android:layout_below="@+id/weightEditText"
    android:layout_alignParentStart="true" />

<EditText
    android:id="@+id/passwordEditText"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_alignBaseline="@+id/passwordTextView"
    android:layout_alignBottom="@+id/passwordTextView"
    android:layout_alignStart="@+id/weightEditText"
    android:ems="10"
    android:inputType="textPassword" />
```

```
<EditText
   android:id="@+id/confirmPasswordeditText11"
   android:layout_width="wrap_content"
   android:layout_height="wrap_content"
   android:layout_alignBaseline="@+id/confirmPasswordtextView11"
   android:layout_alignBottom="@+id/confirmPasswordtextView11"
   android:layout_alignParentEnd="true"
   android:ems="10"
   android:inputType="textPassword" />

<TextView
   android:id="@+id/nameUserTextView"
   android:layout_width="wrap_content"
   android:layout_height="wrap_content"
   android:layout_alignBaseline="@+id/nameEditText"
   android:layout_alignBottom="@+id/nameEditText"
   android:layout_alignStart="@+id/emailTextView"
   android:text="Name" />

<TextView
   android:id="@+id/confirmPasswordtextView11"
   android:layout_width="wrap_content"
   android:layout_height="wrap_content"
   android:layout_below="@+id/passwordEditText"
   android:layout_marginTop="24dp"
   android:text="ConfirmPassword"
   android:layout_alignStart="@+id/passwordTextView"
   android:layout_toStartOf="@+id/nameEditText" />
```

```
  <Button
    android:id="@+id/cancelButton"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_below="@+id/confirmPasswordeditText11"
    android:layout_marginTop="14dp"
    android:layout_toStartOf="@+id/confirmPasswordeditText11"
    android:text="Cancel"
    android:background="@android:color/holo_blue_bright"/>

  <Button
    android:id="@+id/registerButton3"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_alignTop="@+id/cancelButton"
    android:layout_marginStart="31dp"
    android:layout_toEndOf="@+id/cancelButton"
    android:text="Register"
    android:background="@android:color/holo_blue_bright"/>

</RelativeLayout>
```

layout.xml

```
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
  xmlns:tools="http://schemas.android.com/tools"
  android:layout_width="match_parent" android:layout_height="match_parent">
```

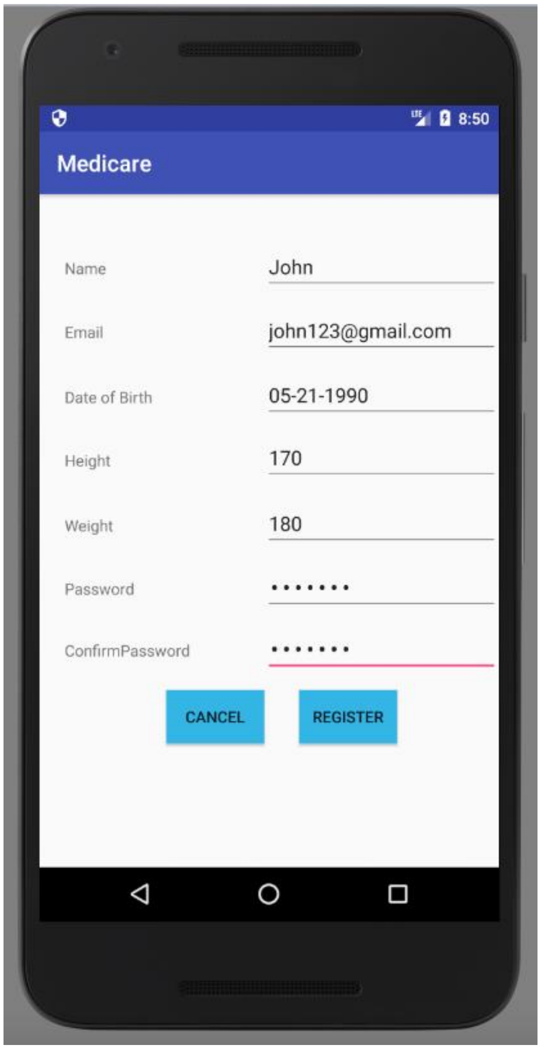
```xml
<Button
    android:id="@+id/button"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Diagnose"
    android:layout_alignBaseline="@+id/button2"
    android:layout_alignBottom="@+id/button2"
    android:layout_alignParentEnd="true"
    android:layout_marginEnd="72dp"
    android:background="@android:color/holo_blue_bright"/>

<Button
    android:id="@+id/button2"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Add"
    android:layout_marginTop="51dp"
    android:layout_below="@+id/editText"
    android:layout_alignParentStart="true"
    android:layout_marginStart="49dp"
    android:background="@android:color/holo_blue_bright"/>

<EditText
    android:id="@+id/editText"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_marginTop="57dp"
    android:ems="10"
    android:inputType="textPersonName"
    android:hint="Enter Symptom"
    android:layout_alignParentTop="true"
    android:layout_centerHorizontal="true" />

<ListView
    android:id="@+id/list"
    android:layout_width="140dp"
    android:layout_height="250dp"
    android:layout_alignParentBottom="true"
    android:layout_alignStart="@+id/textView" />

<ListView
    android:id="@+id/list2"


    android:layout_width="140dp"
    android:layout_height="250dp"


    android:layout_alignTop="@+id/list"
    android:layout_toEndOf="@+id/list"
    android:layout_alignStart="@+id/textView2" />

<TextView
    android:id="@+id/textView"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_marginBottom="21dp"
    android:layout_marginStart="25dp"
    android:text="Possible Diagnosis"
    android:textAppearance="@style/TextAppearance.AppCompat.SearchResult.Subtitle"
    android:layout_above="@+id/list"
    android:layout_alignParentStart="true" />

  <TextView
    android:id="@+id/textView2"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Entered Symptoms"
android:textAppearance="@style/TextAppearance.AppCompat.Light.SearchResult.Subtitle"
    android:layout_alignBaseline="@+id/textView"
    android:layout_alignBottom="@+id/textView"
    android:layout_alignStart="@+id/button" />

</RelativeLayout>
```

activity_result.xml

```
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
  xmlns:app="http://schemas.android.com/apk/res-auto"
  android:layout_width="match_parent" android:layout_height="match_parent">

  <TextView
    android:id="@+id/textViewResult"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_alignParentTop="true"
    android:layout_centerHorizontal="true"
    android:layout_marginTop="105dp"
    android:text="TextView"
    android:textAppearance="@style/TextAppearance.AppCompat.Headline" />

  <TextView
    android:id="@+id/textViewDescription"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_below="@+id/textViewResult"
    android:layout_centerHorizontal="true"
    android:layout_marginTop="40dp"
    android:maxHeight="400dp"
    android:maxWidth="300dp"
    android:text="TextView"
    android:textAppearance="@style/TextAppearance.AppCompat.Medium" />

  <ImageView
    android:id="@+id/imageView"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_marginBottom="14dp"
    app:srcCompat="@drawable/medicare"
    android:layout_alignParentBottom="true"
    android:layout_alignParentStart="true" />
</RelativeLayout>
```

Working Example

Sign Up Page:



Medicare

Name John

Email john123@gmail.com

Date of Birth 05-21-1990

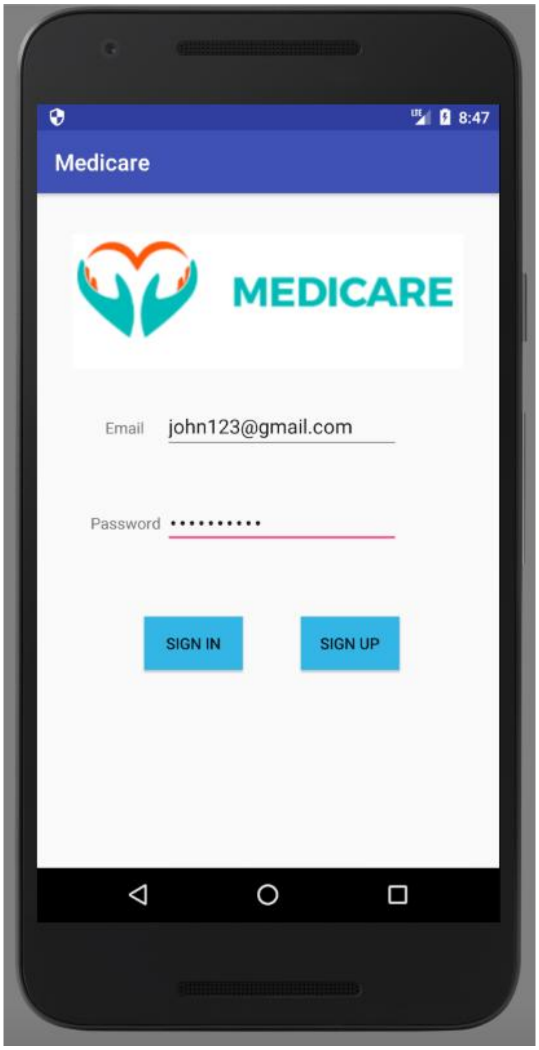
Height 170

Weight 180

Password •••••••

ConfirmPassword •••••••

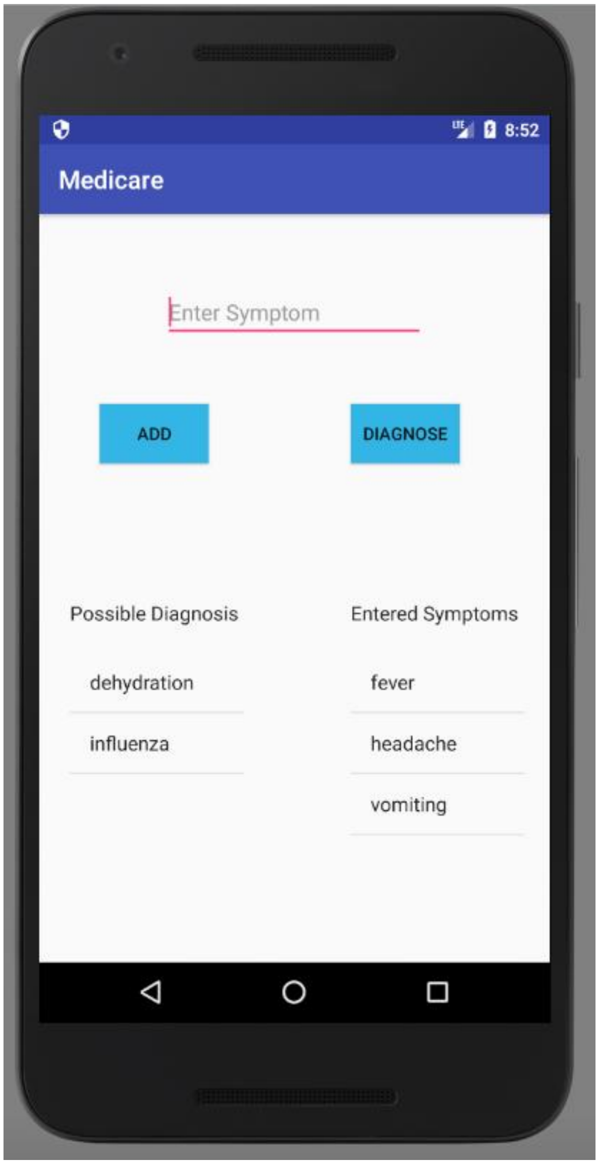
Sign In Page:



Email john123@gmail.com

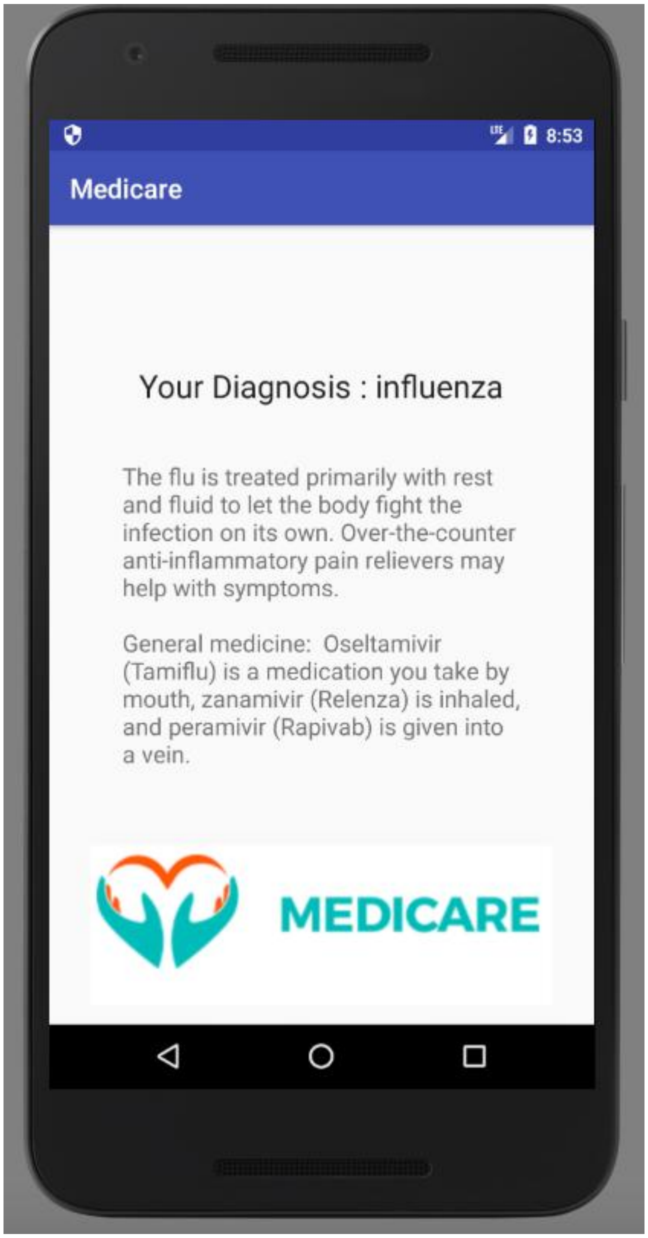
Password •••••••••••

Check Symptom Screen:



Possible Diagnosis	Entered Symptoms
dehydration	fever
influenza	headache
	vomiting

Result Screen:



Your Diagnosis : influenza

The flu is treated primarily with rest and fluid to let the body fight the infection on its own. Over-the-counter anti-inflammatory pain relievers may help with symptoms.

General medicine: Oseltamivir (Tamiflu) is a medication you take by mouth, zanamivir (Relenza) is inhaled, and peramivir (Rapivab) is given into a vein.

Conclusion

The Medicare application lets users diagnose their disease in real time system by providing their symptoms. The disease predicted is then explained in layman terms for the user to understand. The application then suggests the required steps to be taken and prescribes general medicine to cope with the illness, saving the time required for booking an appointment, waiting and pre-diagnosis.

Future Scope

- There can be many disease predicted for a given set of symptoms, therefore the precision of the illness resulted can be improved for better results.
- All the medicines prescribed or required is not always available locally, thus a doctor's approval and recommendation is necessary to obtain such doses. Application can add doctors as actors, and the users can directly communicate through the application.
- Addition of doctors as actors will also help in emergency cases saving up a lot of pre diagnosis time, and immediate measures can be taken in the right direction.

References

1. http://stackoverflow.com

2. https://www.youtube.com/

3. https://developer.android.com/develop/index.html

4. https://github.com/deshanadesai/Symptom-X-/blob/master/dataset_clean1.csv