WATER PLANNER

J COMPONENT REPORT

COURSE CODE: SWE2008

COURSE NAME: ANDROID PROGRAMMING

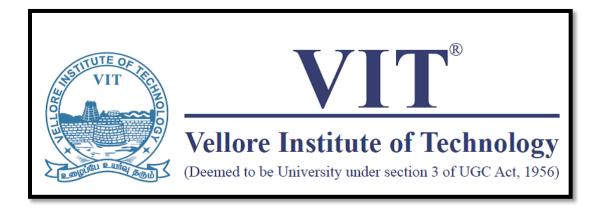
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ABSTRACT:

It is an Android application that calculates the BMI according to the user's height and weight. It is an application that works as a reminder to drink water. Now a days, people life is much busier where each second of individual counts. And sometimes it can be quite difficult to manage and remember every running task and also, they are not giving much importance for their health. If people set and save their BMI in this application which reminds the user to drink water according to the notification time, life would be easier and healthy in some aspects. With the aim to make the people's life in a planned and managed way, Water Planner application was developed. This application will give a reminder as alarm notification when the time reaches. The records will get stored as a weekly basis in this application.

Here in the application, first the user needs to login by giving the correct username and the password. If the user is the new user, the user needs to sign up through the signup activity and then need to login. After login, the application will navigate into homepage. The user needs to click on the application logo, it will navigate into the next page. Then the user wants to select the Gender accordingly. After that, they need to set up their woke up time and bed time. Then the Application navigates into the BMI Calculation page where the users need to give their height in centimeter and weight in kilograms. After calculating the BMI, the app will show the amount of water the user needs to intake daily based on their weight given for BMI Calculation. After that, Alarm page will open, there the user can set the time for notification and also, they can set the message to pop up during the notification. If we click on the pop-up Notification, the main page will open. There we can able to see the weekly intake by clicking on weekly report button. And we can able to change the settings of the Application by clicking on the list view in right top corner. In settings, we can able to change our cup size and in intake we can change our daily goal of water intake. And we can also ON/OFF the reminders. In additional Resources, the application provides the benefits of Drinking water and if the user clicks on learn more button, it will directly take into chrome to know more about the benefits of drinking water. This is how our Android Application works. The Application is written in Java Language and executed in Android Studio.

OUTPUT SCREENSHOTS:







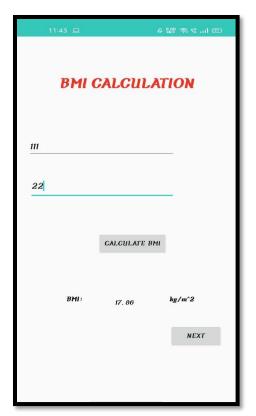


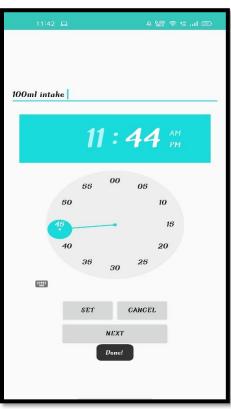








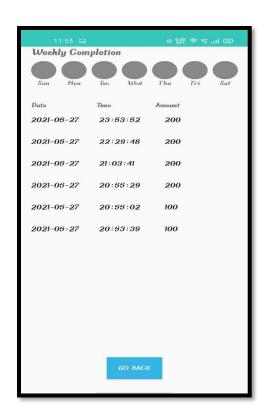


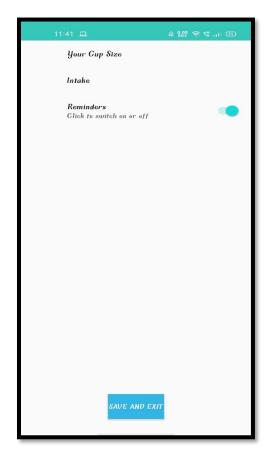


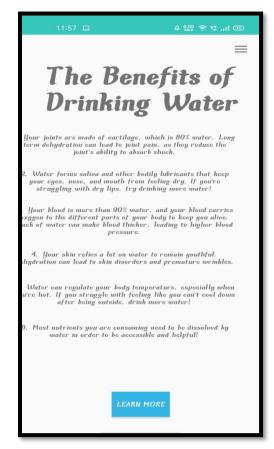












SOURCE CODES:

JAVA CODES:

BMI CALCULATION:

```
package com.example.hidr8;
import androidx.appcompat.app.AppCompatActivity;
import android.content.Intent;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import android.widget.TextView;
public class SecondActivity extends AppCompatActivity {
    TextView tv;
    Button btn;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_second);
        final EditText etnum2 = (EditText)findViewById(R.id.weight);
        Button b1=(Button)findViewById(R.id.btn nxt);
        b1.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                String s=etnum2.getText().toString();
                Intent intent = new Intent(getApplicationContext(),startpage.class);
                intent.putExtra("weight",s);
                startActivity(intent);
            }
        });
    public void bmi calc(View v){
        EditText etnum1 = (EditText)findViewById(R.id.height);
        EditText etnum2 = (EditText)findViewById(R.id.weight);
        Button btn = (Button)findViewById(R.id.bmi);
        TextView tv=(TextView)findViewById(R.id.tv bmi);
        int h=Integer.parseInt(etnum1.getText().toString());
        int w=Integer.parseInt(etnum2.getText().toString());
        double b=h*0.01;
        double c = b*b;
        double bodymassindex= w/c;
        tv.setText(String.format("%.2f",bodymassindex));
    public void next(View v)
        Intent intent = new Intent(SecondActivity.this, startpage.class);
        startActivity(intent);
}
```

HOMEPAGE:

```
package com.example.hidr8;
        import androidx.appcompat.app.ActionBarDrawerToggle;
        import androidx.appcompat.app.AppCompatActivity;
        import androidx.appcompat.content.res.AppCompatResources;
        import androidx.appcompat.widget.Toolbar;
        import androidx.core.graphics.drawable.DrawableCompat;
        import androidx.drawerlayout.widget.DrawerLayout;
        import androidx.preference.PreferenceManager;
        import android.app.PendingIntent;
        import android.content.Context;
        import android.content.Intent;
        import android.content.SharedPreferences;
        import android.graphics.Color;
        import android.graphics.drawable.Drawable;
        import android.os.AsyncTask;
        import android.os.Bundle;
        import android.view.View;
        import android.widget.AdapterView;
        import android.widget.ArrayAdapter;
        import android.widget.Button;
        import android.widget.ImageButton;
        import android.widget.ListView;
        import android.widget.ProgressBar;
        import android.widget.TextView;
        import android.app.AlarmManager;
        import org.json.JSONObject;
        import java.io.BufferedReader;
        import java.io.InputStreamReader;
        import java.net.HttpURLConnection;
        import java.net.URL;
        import java.sql.Time;
        import java.util.Date;
        import java.util.Calendar;
        import javax.net.ssl.HttpsURLConnection;
public class homepage extends AppCompatActivity {
    //variable used to hold the text field that displays the water amount
    TextView waterAmountText;
    //variable used to connect to the progress bar
    ProgressBar waterProgressBar;
    //variable used to connect to the water bottle image that is used as a button
    ImageButton waterBottle;
    //variable used to connect to the weekly report button
    Button weeklyReportButton;
    //variable used to hold the current containerSize
    float containerSize:
    //variable used to hold the goal amount
```

```
float goal;
    //variable used to define the amount that the progress bar should advance based
on the container size
    float incrementCount;
    //variable used to hold the currentAmount of water that has been drank for the
day
    float currentAmount;
    //For recurring notifications
    private AlarmManager alarmMgr;
    private PendingIntent alarmIntent;
    //string array that contains the titles of buttons in the navigation drawer
    private String[] navigationDrawerItemTitles;
    //variable that connects to the DrawerLayout in the xml file
    private DrawerLayout drawerLayout;
    //ListView that is contained inside of the navigation drawer
    private ListView drawerList;
    //variable that holds the hamburger button ActionBarDrawerTogqle
    ActionBarDrawerToggle drawerToggle;
    SharedPreferences pref;
    TextView recommendedGoal;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_home);
        //stores the default shared preferences into pref
        pref = PreferenceManager.getDefaultSharedPreferences(this);
        SharedPreferences.Editor edit = pref.edit();
        ManageDrawables.setDefaultDayOfWeekColors(this, Color.GRAY);
        Date date = new Date();
        if(pref.getString("date", "empty").equals("empty")) {
            edit.putString("date", date.toString());
        if(pref.getString("date", "empty").compareTo(date.toString()) < 0) {</pre>
            edit.putString("date", date.toString());
            edit.putFloat("current_amount", 0);
        }
        //this flips all of the layout elements and is a quick and dirty solution to
open the navigation drawer from right to left
        getWindow().getDecorView().setLayoutDirection(View.LAYOUT_DIRECTION_RTL);
```

```
navigationDrawerItemTitles =
getResources().getStringArray(R.array.navigation drawer items main array);
        drawerLayout = findViewById(R.id.drawer main Layout);
        drawerList = findViewById(R.id.left_drawer);
        Toolbar toolbar = findViewById(R.id.toolbar);
        setSupportActionBar(toolbar);
        //removes the title of the app from the toolbar
        getSupportActionBar().setDisplayShowTitleEnabled(false);
        recommendedGoal = findViewById(R.id.recommended goal);
       // String weight = pref.getString("weight", "140");
        //new GetWebServiceData().execute(weight);
        //calls addNotification() method to create a new notification if the user has
reminders on
        if(pref.getBoolean("switch", false)) {
            addNotification();
        }
        //array adapter created for the titles in the navigation drawer
        ArrayAdapter<String> adapter = new ArrayAdapter<>(this,
android.R.layout.simple_list_item_1, navigationDrawerItemTitles);
        drawerList.setAdapter(adapter);
       //listener that switches activities when the user presses a button in the
navigation drawer
        drawerList.setOnItemClickListener(new AdapterView.OnItemClickListener() {
            @Override
            public void onItemClick(AdapterView<?> parent, View view, int position,
long id) {
                switch (position) {
                    case 0:
                        //when first item is selected
                        startActivity(new Intent(homepage.this, Settings.class));
                        break;
                    case 1:
                        //when second item is selected
                        startActivity(new Intent(homepage.this,
MoreInformation.class));
                        break;
            }
        });
        //set drawerLayout to the DrawerLayout that is the top level layout in
activity main.xml
        drawerLayout = findViewById(R.id.drawer main Layout);
        //add a drawer listener that allows the navigation drawer to open when the
hamburger button is pressed
        drawerLayout.addDrawerListener(drawerToggle);
        //create a new ActionBarDrawerToggle that is the hamburger button that will
be pressed
```

```
drawerToggle = new
ActionBarDrawerToggle(this,drawerLayout,toolbar,R.string.app name,
R.string.app name);
        //This is necessary to change the icon of the Drawer Toggle upon state
change.
        drawerToggle.syncState();
        waterAmountText = findViewById(R.id.waterAmount);
        waterProgressBar = findViewById(R.id.progressBar);
        waterBottle = findViewById(R.id.WaterBottle);
        weeklyReportButton = findViewById(R.id.weeklyReport);
        //defines values based on the default shared preferences
        containerSize = Float.parseFloat(pref.getString("container_size", "80"));
        goal = Float.parseFloat(pref.getString("goal", "80"));
        incrementCount = (containerSize/goal) * 100;
        currentAmount = pref.getFloat("current_amount", 0);
        waterProgressBar.setProgress((int)((currentAmount / goal) * 100));
        //sets the text above the waterProgressBar to the currentAmount next to the
goal value
        waterAmountText.setText(currentAmount + " ml/ " + goal + " ml");
        //creates a OnClickListener for the weeklyReportButton that starts the
WeeklyReport activity
        //when the button is clicked
        weeklyReportButton.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                //code to update the circles to the right colors based on the
database goes here
                DatabaseHelper db = new DatabaseHelper(homepage.this);
                int[] completeDays = db.getCompleteDays();
                //resets colors before the colors are updated from the database
                ManageDrawables.setDefaultDayOfWeekColors(homepage.this, Color.GRAY);
                ManageDrawables.setDayOfWeekColors(completeDays, homepage.this);
                Intent intent = new Intent(homepage.this, WeeklyReport.class);
                startActivity(intent);
            }
        });
    }
    public void waterOnClick(View view) {
        //increments the waterProgressBar by the amount determined by the container
size
        waterProgressBar.incrementProgressBy(Math.round(incrementCount));
        //increases the currentAmount based on the current containerSize
        currentAmount += Math.round(containerSize);
        waterAmountText.setText(currentAmount + " ml / " + goal + " ml");
        SharedPreferences.Editor edit = pref.edit();
        edit.putFloat("current_amount", currentAmount);
        edit.apply();
```

```
java.util.Date utilDate = new java.util.Date();
        java.sql.Date date = new java.sql.Date(utilDate.getTime());
        Time time = new Time(utilDate.getTime());
        DatabaseHelper db = new DatabaseHelper(this);
        db.insertData(time, date, goal, currentAmount, containerSize);
    }
    //class used to get data from the custom web service and set the value of a text
view
    public class GetWebServiceData extends AsyncTask {
        //method that will run in a separate worker thread to access the web service
the weight
        //value will be passed into this method as a string to change the json that
is returned
        @Override
        protected Object doInBackground(Object[] objects) {
            StringBuffer response;
            URL url;
            String responseText;
            String returnedGoal = "";
            try {
                //connects to the web service directly
                url = new URL("http://70.32.24.170:8080/goal?weight=" + objects[0]);
                HttpURLConnection conn = (HttpURLConnection) url.openConnection();
                //set connection properties
                conn.setReadTimeout(5000);
                conn.setConnectTimeout(5000);
                conn.setRequestMethod("GET");
                //get the response from the web service
                int responseCode = conn.getResponseCode();
                response = new StringBuffer();
                if (responseCode == HttpsURLConnection.HTTP_OK) {
                    BufferedReader in = new BufferedReader(new
InputStreamReader(conn.getInputStream()));
                    String output;
                    while ((output = in.readLine()) != null) {
                        response.append(output);
                    in.close();
                }
                //store the response as a string and create a JSONObject to parse the
JSON
                responseText = response.toString();
                JSONObject jsonResponse = new JSONObject(responseText);
                //if the json has a goal field set the value of returned goal to that
value
                if (jsonResponse.has("goal")) {
```

```
returnedGoal = jsonResponse.getString("goal");
            } catch (Exception e) {
                e.printStackTrace();
            //return the goal retrieved from the webservice
            return returnedGoal;
        }
        //method that uses the goal returned from doInBackground() and set the text
of
        //the recommendedGoal text view
        @Override
        protected void onPostExecute(Object o) {
            super.onPostExecute(o);
            recommendedGoal.setText("Recommended goal: " + (String)o + " ml");
        }
    private void addNotification() {
        alarmMgr = (AlarmManager)getSystemService(Context.ALARM_SERVICE);
        Intent intent = new Intent(this, Notify.class);
        alarmIntent = PendingIntent.getBroadcast(this, 0, intent, 0);
        //Reads in the current date and time of the system
        Calendar calendar = Calendar.getInstance();
        calendar.setTimeInMillis(System.currentTimeMillis());
        //sets the time of notification to start at 8am
        calendar.set(Calendar.HOUR_OF_DAY, 8);
        calendar.set(Calendar.MINUTE, 00);
        //starts a repeating notification for every 30 minutes
        alarmMgr.setRepeating(AlarmManager.RTC WAKEUP, calendar.getTimeInMillis(),
1000*60*5, alarmIntent);
}
```

XML CODE:

BMI CALCULATION:

```
<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout</pre>
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="match parent"
    android:layout height="match parent"
    tools:context=".SecondActivity">
    <Button
        android:id="@+id/bmi"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginStart="132dp"
        android:layout marginTop="68dp"
        android:onClick="bmi_calc"
        android:text="Calculate BMI"
        android:textColor="@color/black"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toBottomOf="@+id/weight" />
    <TextView
        android:id="@+id/tv_bmi"
        android:layout_width="67dp"
        android:layout height="23dp"
        android:layout_marginStart="25dp"
        android:layout_marginTop="520dp"
        android:layout_marginBottom="168dp"
        android:textColor="@color/black"
        app:layout constraintBottom toBottomOf="parent"
        app:layout constraintStart toEndOf="@+id/tv b"
        app:layout constraintTop toTopOf="parent" />
    <EditText
        android:id="@+id/height"
        android:layout_width="242dp"
        android:layout_height="45dp"
        android:layout marginTop="92dp"
        android:layout_marginEnd="100dp"
        android:ems="10"
        android:hint="Enter Your Height(in cms)"
        android:inputType="number"
        app:layout constraintEnd toEndOf="parent"
        app:layout_constraintTop_toBottomOf="@+id/tv_activity" />
    <EditText
        android:id="@+id/weight"
        android:layout_width="240dp"
        android:layout height="55dp"
        android:layout_marginTop="32dp"
        android:layout marginEnd="100dp"
        android:ems="10"
```

```
android:hint="Enter Your Weight(in kgs)"
    android:inputType="number"
    app:layout constraintEnd toEndOf="parent"
    app:layout_constraintTop_toBottomOf="@+id/height" />
<TextView
    android:id="@+id/tv activity"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout marginStart="86dp"
    android:layout marginTop="80dp"
    android:layout marginEnd="69dp"
    android:text="BMI CALCULATION"
    android:textColor="@color/red"
    android:textSize="30sp"
    android:textStyle="bold"
    app:layout constraintEnd toEndOf="parent"
    app:layout constraintHorizontal bias="1.0"
    app:layout constraintStart toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent" />
<Button
    android:id="@+id/btn nxt"
    android:layout width="wrap content"
    android:layout_height="wrap_content"
    android:layout marginStart="250dp"
    android:layout marginTop="44dp"
    android:layout_marginEnd="45dp"
    android:onClick="next"
    android:text="NEXT"
    android:textColor="@color/black"
    app:layout constraintEnd toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.0"
    app:layout constraintStart toStartOf="parent"
    app:layout_constraintTop_toBottomOf="@+id/textView4" />
<TextView
    android:id="@+id/tv_b"
    android:layout_width="56dp"
    android:layout_height="20dp"
    android:layout marginStart="81dp"
    android:layout marginTop="84dp"
    android:layout marginEnd="12dp"
    android:text="BMI:'
    android:textColor="@color/black"
    android:textStyle="bold"
    app:layout constraintEnd toStartOf="@+id/tv bmi"
    app:layout constraintHorizontal bias="0.0"
    app:layout constraintStart toStartOf="parent"
    app:layout constraintTop toBottomOf="@+id/bmi" />
<TextView
    android:id="@+id/textView4"
    android:layout_width="wrap_content"
    android:layout height="wrap content"
```

```
android:layout_marginStart="40dp"
android:layout_marginTop="200dp"
android:layout_marginEnd="88dp"
android:layout_marginBottom="45dp"
android:text="kg/m^2"
android:textColor="@color/black"
android:textStyle="bold"
app:layout_constraintBottom_toTopOf="@+id/btn_nxt"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintStart_toEndOf="@+id/tv_bmi"
app:layout_constraintTop_toBottomOf="@+id/weight" />
</androidx.constraintlayout.widget.ConstraintLayout>
```

HOMEPAGE:

```
<?xml version="1.0" encoding="utf-8"?>
<androidx.drawerlayout.widget.DrawerLayout</pre>
xmlns:android="http://schemas.android.com/apk/res/android"
    android:id="@+id/drawer main layout"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout gravity="end"
    android:layout_width="match_parent"
    android:layout height="match parent"
    tools:context=".MainActivity">
    <androidx.constraintlayout.widget.ConstraintLayout</pre>
        android:layout_width="match_parent"
        android:layout_height="match_parent">
        <TextView
            android:id="@+id/waterAmount"
            android:layout width="wrap content"
            android:layout height="wrap content"
            android:layout_marginTop="14dp"
            android:textSize="30sp"
            android:textStyle="bold"
            app:layout_constraintEnd_toEndOf="parent"
            app:layout_constraintHorizontal_bias="0.498"
            app:layout constraintStart toStartOf="parent"
            app:layout_constraintTop_toBottomOf="@+id/recommended_goal" />
        <ImageButton</pre>
            android:id="@+id/WaterBottle"
            android:layout width="wrap content"
            android:layout_height="wrap_content"
            android:layout marginTop="64dp"
            android:adjustViewBounds="true"
            android:background="@null"
            android:maxWidth="400dp"
            android:maxHeight="400dp"
            android:onClick="waterOnClick"
            android:scaleType="fitXY"
```

```
android:src="@drawable/water bottle"
        app:layout constraintBottom toBottomOf="parent"
        app:layout constraintEnd toEndOf="parent"
        app:layout constraintStart toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent" />
    <ProgressBar</pre>
        android:id="@+id/progressBar"
        style="?android:attr/progressBarStyleHorizontal"
        android:progressTint="#00BCD4"
        android:layout width="200dp"
        android:layout_height="50dp"
        android:layout_marginTop="50dp"
        android:progress="0"
        android:scaleY="6"
        app:layout constraintBottom toTopOf="@+id/WaterBottle"
        app:layout constraintEnd toEndOf="parent"
        app:layout constraintStart toStartOf="parent"
        app:layout constraintTop toTopOf="parent"
        android:rotation="180"
        />
    <Button
        android:id="@+id/weeklyReport"
        android:layout width="wrap content"
        android:layout height="wrap content"
        android:text="@string/weekly_report"
        android:background="@android:color/holo blue light"
        android:textColor="@android:color/white"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout constraintEnd toEndOf="parent"
        app:layout constraintStart toStartOf="parent"
        app:layout constraintTop toBottomOf="@+id/WaterBottle" />
    <androidx.appcompat.widget.Toolbar</pre>
        android:id="@+id/toolbar"
        android:layout width="wrap content"
        android:layout_height="wrap_content"
        android:theme="@style/AppTheme"
        app:layout constraintStart toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent" />
    <TextView
        android:id="@+id/recommended_goal"
        android:layout width="wrap content"
        android:layout_height="wrap_content"
        android:layout marginTop="8dp"
        android:text="Daily Intake of water"
        android:textSize="20sp"
        android:textStyle="bold"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout constraintStart toEndOf="@+id/toolbar"
        app:layout_constraintTop_toTopOf="parent" />
</androidx.constraintlayout.widget.ConstraintLayout>
```

ANDROID MANIFEST CODE:

```
<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"</pre>
    package="com.example.hidr8">
    <uses-permission android:name="android.permission.INTERNET"/>
    <application</pre>
        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"
        android:usesCleartextTraffic="true">
        <activity android:name=".MoreInformation"></activity>
        <activity android:name=".Settings" />
        <activity android:name=".WeeklyReport" />
        <activity android:name=".signupActivity" />
        <activity android:name=".Gender" />
        <activity android:name=".wokeup" />
        <activity android:name=".wokeup g" />
        <activity android:name=".bedtime boy" />
        <activity android:name=".bedtime_girl" />
        <activity android:name=".SecondActivity" />
        <activity android:name=".homepage" />
        <activity android:name=".logo" />
        <activity android:name=".startpage" />
        <activity android:name=".Alarm"/>
        <activity android:name=".MainActivity">
            <intent-filter>
                <action android:name="android.intent.action.MAIN" />
                <category android:name="android.intent.category.LAUNCHER" />
            </intent-filter>
        </activity>
        <receiver android:name=".AlarmReceiver"/>
    </application>
</manifest>
```