LIST OF EXPERIMENTS

1. Setting up Android Platform, Android Virtual Device and create application to display Welcome
message.
2. Build a score keeper app that gives a user the ability to keep track of the score of two different teams
playing a game of choice. Include different Buttons which can be clicked for different events in the
game to add points.
3. Create a Musical Structure App to store and present the user with the library of songs available in
different categories of classical and Melodies. Write code to play the song chosen by the user from the
library of music.
4. Create an application to calculate the electricity bill and create an appropriate alert message as well as
send the value to the given mobile number using SMS.
5. Write an android program to demonstrate a Menu 'File' with New and Open as menu items. Give toast
messages on click of each menu item.
6. Create an application to fetch the current Location information (Latitude and longitude) and display it
in the alert message.
7. Write an android program to implement the following operations using SQLite Database.
Create the SQLite Database Object.
Execute the CRUD Operations required for the application
Close the database.

8. Develop an application to implement phone number Verification by OTP using Firebase in Android
9. Create an application to extract employee information from the JSON message and load it in the UI.
10. Develop the following mobile application using android
Education Quiz App
Tour Guide App
News Feed App

Ex No: 1
Date:

SETTING UP ANDROID PLATFORM, ANDROID VIRTUAL DEVICE AND CREATE APPLICATION TO DISPLAY WELCOME

AIM:

PROCEDURE:
STEP 1: Open the Android Studio
STEP 2:Click on the file menu
STEP 3:Click on the New button
STEP 4:Now, click on New project
STEP 5:Now, our first android project is ready, we can run it by clicking on the green run button in android studio
STEP 6:Once we run the android hello world app, it will be installed automatically on the Android Virtual Device (AVD).

activity_main.xml

```
<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout
xmlns:android="http://schemas.android.com/apk/res/android"
```

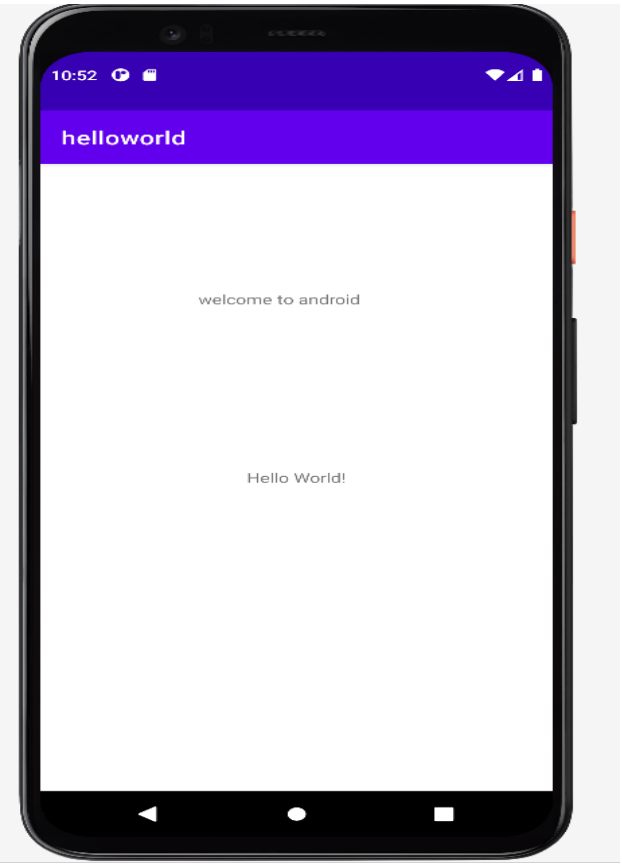
```
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:context=".MainActivity">

    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Welcome"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintLeft_toLeftOf="parent"
        app:layout_constraintRight_toRightOf="parent"
        app:layout_constraintTop_toTopOf="parent" />

<TextView
    android:id="@+id/textView"
    android:layout_width="151dp"
    android:layout_height="55dp"
    android:text="welcome to android"
    app:layout_constraintBottom_toTopOf="@+id/textView2"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent" />


</androidx.constraintlayout.widget.ConstraintLayout>
```

MainActivity.java

```
package com.example.myapplication;

import androidx.appcompat.app.AppCompatActivity;

import android.os.Bundle;

public class MainActivity extends AppCompatActivity {

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

}

OUTPUT:



Ex No: 2
Date:

2. Build a score keeper app that gives a user the ability to keep track of the score of two different teams playing a game of choice. Include different Buttons which can be clicked for different events in the game to add points.

AIM:

To develop a score keeper app that gives the score of two different teams playing a games.

PROCEDURE:

STEP 1:- Open eclipse or android studio and select new android project .
STEP 2:-Give application name,select blank activity and design application icon.
SETP 3:-Create view layout for user interface.
SETP 4:-Write a java function for view layout widgets.

SETP 5:-Execute the android application.

SETP 6:-Use android emulator to show the created application.

Activity_main.xml

```
<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout
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">


<TextView
android:id="@+id/result_TeamA"
android:layout_width="182dp"
android:layout_height="70dp"
android:layout_marginStart="16dp"
android:layout_marginTop="28dp"
android:text="Team A"
android:textSize="20sp"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent" />

   <TextView
       android:id="@+id/result_TeamB"
       android:layout_width="182dp"
       android:layout_height="70dp"
       android:layout_marginStart="16dp"
       android:layout_marginTop="68dp"
       android:text="Team B"
       android:textSize="20sp"
       app:layout_constraintStart_toStartOf="parent"
       app:layout_constraintTop_toBottomOf="@+id/result_TeamA" />

<TextView
android:id="@+id/result_TeamAscore"
android:layout_width="151dp"
android:layout_height="61dp"
android:layout_marginStart="40dp"
android:layout_marginTop="28dp"
android:text="Score A"
android:textAlignment="center"
android:textSize="20sp"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.0"
app:layout_constraintStart_toEndOf="@+id/result_TeamA"
app:layout_constraintTop_toTopOf="parent"
tools:ignore="MissingConstraints" />

   <TextView
       android:id="@+id/result_TeamBscore"
```

```
        android:layout_width="150dp"
        android:layout_height="72dp"
        android:layout_marginStart="32dp"
        android:layout_marginTop="72dp"
        android:text="Score B"
        android:textAlignment="center"
        android:textSize="20sp"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.258"
        app:layout_constraintStart_toEndOf="@+id/result_TeamB"
        app:layout_constraintTop_toBottomOf="@+id/result_TeamAscore" />

    <Button
        android:id="@+id/button"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginBottom="24dp"
        android:text="Add"
        app:layout_constraintBottom_toTopOf="@+id/result_TeamBscore"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.873"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toBottomOf="@+id/result_TeamAscore"
        app:layout_constraintVertical_bias="0.0" />

    <Button
        android:id="@+id/button2"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Add"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.873"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toBottomOf="@+id/result_TeamBscore" />

    <Button
        android:id="@+id/button3"
        android:layout_width="212dp"
        android:layout_height="70dp"
        android:layout_marginBottom="10dp"
        android:text="Reset"
        app:layout_constraintBottom_toTopOf="@+id/button4"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.542"
        app:layout_constraintStart_toStartOf="parent" />

    <Button
        android:id="@+id/button4"
        android:layout_width="212dp"
        android:layout_height="70dp"
        android:layout_marginBottom="28dp"
        android:text="Result"
        app:layout_constraintBottom_toTopOf="@+id/result"
```

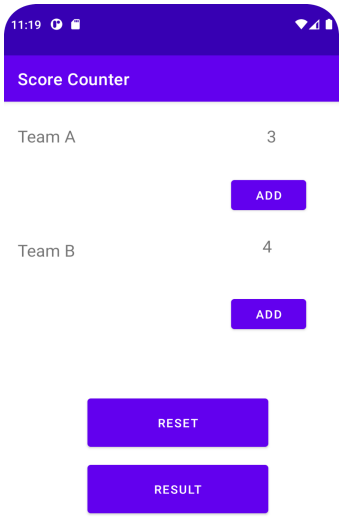
```
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.542"
        app:layout_constraintStart_toStartOf="parent" />

    <TextView
        android:id="@+id/result"
        android:layout_width="293dp"
        android:layout_height="75dp"
        android:layout_marginBottom="56dp"
        android:gravity="center"
        android:text=""
        android:textSize="20dp"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent" />
</androidx.constraintlayout.widget.ConstraintLayout>
```

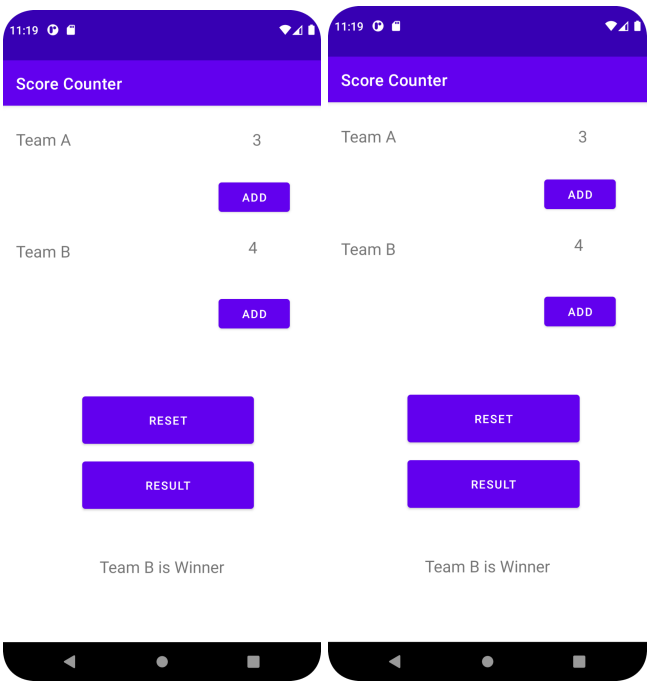
Main Activity.java

```
package com.example.helloworld;

import android.content.Intent;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.TextView;
import androidx.appcompat.app.AppCompatActivity;
public class MainActivity extends AppCompatActivity {
    private TextView score1;
    private TextView score2;
    private TextView result;
    private int s1=0,s2=0;
    Button scoreAbtn,scoreBbtn,resetBtn,resultBtn;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        scoreAbtn = findViewById(R.id.button);
        scoreBbtn = findViewById(R.id.button2);
        resetBtn = findViewById(R.id.button3);
        resultBtn = findViewById(R.id.button4);
        result = findViewById(R.id.result);
        score1 = findViewById(R.id.result_TeamAscore);
        score2 = findViewById(R.id.result_TeamBscore);
        score1.setText(String.valueOf(s1));
        score2.setText(String.valueOf(s2));
        scoreAbtn.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                s1++;
                score1.setText(String.valueOf(s1));
            }
        });
```

```
        scoreBbtn.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                s2++;
                score2.setText(String.valueOf(s2));
            }
        });
        resetBtn.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
               s1=0;
               s2=0;
                score1.setText(String.valueOf(s1));
                score2.setText(String.valueOf(s2));
                result.setText("");
            }
        });
        resultBtn.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
              if (s1>s2){
                  result.setText("Team A is Winner");
              }else if(s1==s2){
                  result.setText("Match is Draw");
              }else{
                  result.setText("Team B is Winner");
              }
            }
        });

    }

}
```

OUTPUT:-





RESULT:-

Thus the score keeper app has been build and execute successfully.

Ex No: 3
Date:

3. Create a Musical Structure App to store and present the user with the library of songs available in
different categories of classical and Melodies. Write code to play the song chosen by the user from the
library of music.

activity_main.xml

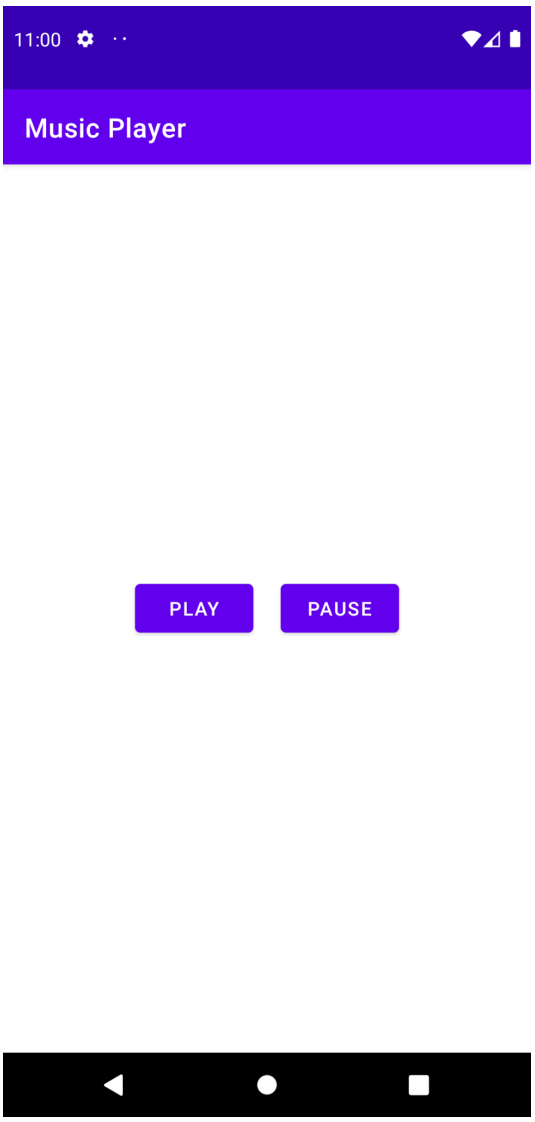
```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
   xmlns:app="http://schemas.android.com/apk/res-auto"
   xmlns:tools="http://schemas.android.com/tools"
   android:layout_width="match_parent"
   android:layout_height="match_parent"
   android:orientation="horizontal"
   android:gravity="center"
   tools:context=".MainActivity">

  <Button
     android:id="@+id/play"
     android:layout_width="wrap_content"
     android:layout_height="wrap_content"
     android:layout_margin="10dp"
     android:text="Play"/>
   <Button
      android:id="@+id/pause"
      android:layout_width="wrap_content"
      android:layout_height="wrap_content"
      android:layout_margin="10dp"
      android:text="Pause"/>
</LinearLayout>
```

MainActivity.java

```
package com.arulesh.musicplayer;

import androidx.appcompat.app.AppCompatActivity;

import android.media.MediaPlayer;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;

public class MainActivity extends AppCompatActivity {

   Button play,pause;
   MediaPlayer player;

   @Override
   protected void onCreate(Bundle savedInstanceState) {
```

```
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        play = findViewById(R.id.play);
        pause = findViewById(R.id.pause);
        player = MediaPlayer.create(this, R.raw.music);
        play.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                player.start();
            }
        });
        pause.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                player.pause();
            }
        });

    }
}
```

OUTPUT:



Ex No: 4
Date:

4. Create an application to calculate the electricity bill and create an appropriate alert message as well as
send the value to the given mobile number using SMS.

activity_main.xml

```
<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"
  tools:context=".MainActivity" >

  <TextView
    android:id="@+id/tvTitle"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_centerHorizontal="true"
    android:layout_marginTop="50dp"
    android:text="Eb Bill Calculator"
    android:textColor="@color/purple_700"
    android:textSize="20sp" />

  <TextView
    android:id="@+id/tvUnits"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_below="@+id/tvTitle"
    android:layout_marginLeft="15dp"
    android:layout_marginTop="50dp"
    android:text="Units Consumed" />

  <TextView
    android:id="@+id/tvMobNo"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_below="@+id/tvUnits"
    android:layout_marginLeft="15dp"
    android:layout_marginTop="50dp"
    android:text="MobileNumber" />

  <EditText
    android:id="@+id/etUnitsCon"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_alignBaseline="@+id/tvUnits"
    android:layout_alignLeft="@+id/btnCalculate"
    android:layout_marginLeft="20dp"
    android:ems="10"
    android:inputType="number" >
    <requestFocus />
```

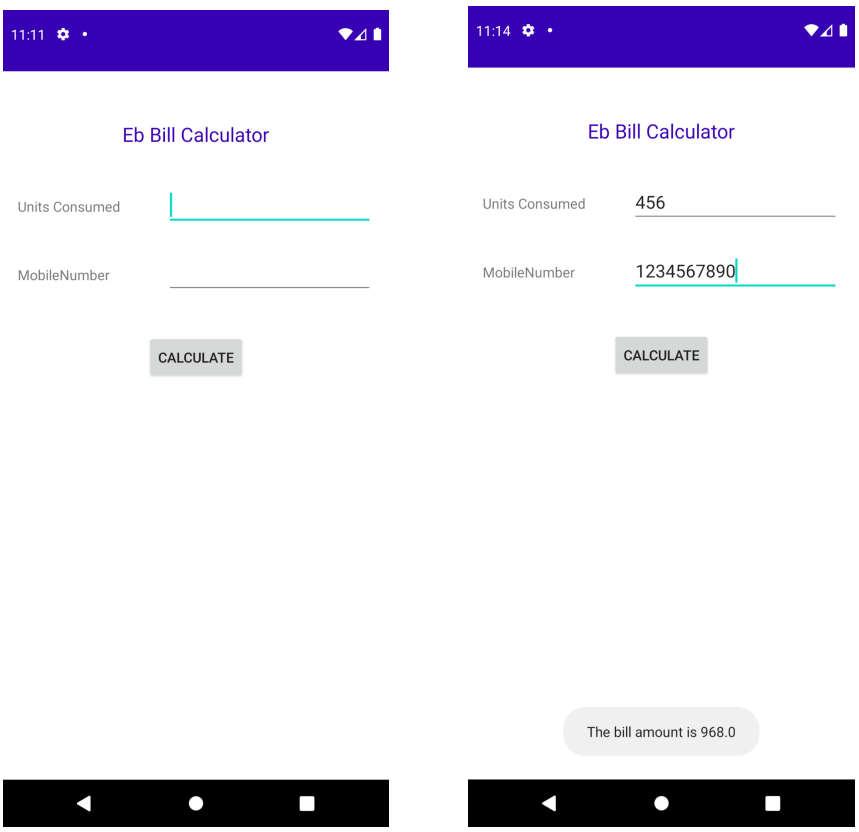
```
  </EditText>

  <EditText
     android:id="@+id/etMobNo"
     android:layout_width="wrap_content"
     android:layout_height="wrap_content"
     android:layout_alignBaseline="@+id/tvMobNo"
     android:layout_alignLeft="@+id/btnCalculate"
     android:layout_marginLeft="20dp"
     android:ems="10"
     android:inputType="number" />

  <Button
     android:id="@+id/btnCalculate"
     android:layout_width="wrap_content"
     android:layout_height="wrap_content"
     android:layout_below="@+id/tvMobNo"
     android:layout_centerHorizontal="true"
     android:layout_marginTop="50dp"
     android:text="Calculate" />

</RelativeLayout>
```

MainActivity.java

```
package com.madlab.ebbill;

import android.os.Bundle;
import android.view.View;
import android.view.View.OnClickListener;
import android.widget.Button;
import android.widget.EditText;
import android.widget.Toast;
import android.app.Activity;
public class MainActivity extends Activity {
  EditText et1, et2;
  Button b1;
  String s1, s2;
  Double units, bill_amount;
  android.telephony.SmsManager manager;
  @Override
```

```
  protected void onCreate(Bundle savedInstanceState) {
     super.onCreate(savedInstanceState);
     setContentView(R.layout.activity_main);
     et1 = (EditText)findViewById(R.id.etUnitsCon);
     et2 = (EditText)findViewById(R.id.etMobNo);
     b1=(Button)findViewById(R.id.btnCalculate);
     b1.setOnClickListener(new OnClickListener() {
        @Override
        public void onClick(View v) {
           s1 = et1.getText().toString();
           s2 = et2.getText().toString();
           units = Double.parseDouble(s1);
           if(units <= 100)
           {
              bill_amount = 0.00;
           }
           else if(units <= 200)
           {
              bill_amount = (units - 100) * 1.50;
           }
           else if(units <= 500)
           {
              bill_amount = 100 * 2.00 + (units - 200) * 3.00;
           }
           else if(units > 500)
           {
              bill_amount = 100 * 3.50 + 300 * 4.60 + (units - 500) * 6.60;
           }
           Toast.makeText(getApplicationContext(), "The bill amount is " +
                 bill_amount, Toast.LENGTH_LONG).show();

        }
     });
  }
}
```

Output



Ex No: 5
Date:

5. Write an android program to demonstrate a Menu ‘File’ with New and Open as menu items. Give toast
messages on click of each menu item.

DEVELOP AN APPLICATION THAT USES A MENU

AIM:

To develop a simple application that shows how to create a Menu “File” with “New” and “Open” as Menu items.

ALGORITHM:

Step 1: Start the process.

Step 2: In Eclipse, create a new Android application project by clicking the menu File -> New -> Android Application Project.

Step 3: Give the application name, project name, package name and click Next.

Step 4: Click Next in the Configure project and Configure the attributes of the icon set wizard.

Step 5: Select Blank activity and click Next.

Step 6: Specify the Activity and Layout name. Click Finish.

Step 7: Choose the version of emulator as Android 10.

Step 8: Write the coding in main.xml and save the file.

Step 9: Write the coding in MainActivity.java and save the file.

Step 10: Create an emulator using Window -> Android Virtual Device Manager -> New Android Virtual Device.

Step 11: Select the Android Virtual Device and give start and launch.

Step 12: Now run the project on emulator.

Step 13: Stop the process.

PROGRAM:

activity_main.xml:

```
<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout
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=".MainActivity"/>
```

main.xml:

```
<?xml version="1.0" encoding="utf-8"?>
<menu xmlns:android="http://schemas.android.com/apk/res/android">
    <item
        android:id="@+id/newitem"
        android:title="New"/>
    <item
        android:id="@+id/open"
        android:title="Open"/>

</menu>
```

MainActivity.java:

```
package com.example.myapplication;
```

```
import androidx.annotation.NonNull;
import androidx.appcompat.app.AppCompatActivity;

import android.os.Bundle;
import android.view.Menu;
import android.view.MenuItem;
import android.widget.Toast;

public class MainActivity extends AppCompatActivity {

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

    }

    @Override
    public boolean onCreateOptionsMenu(Menu menu) {
        getMenuInflater().inflate(R.menu.main,menu);
        return true;
    }

    @Override
    public boolean onOptionsItemSelected(@NonNull MenuItem item) {
        switch (item.getItemId()){
            case R.id.open:
                                Toast.makeText(this, "You Clicked Open Item",
Toast.LENGTH_SHORT).show();
                break;
            case R.id.newitem:
                                 Toast.makeText(this, "You Clicked New Item",
Toast.LENGTH_SHORT).show();
                break;
        }
        return true;
    }
}
```

OUTPUT:


11:41
Menu


11:41
Menu
New
Open

Result:

Ex No: 6
Date:

Add permission in manifest
AndrtiodManifest.xml

```
<manifest >
   <uses-permission android:name="android.permission.ACCESS_FINE_LOCATION" />
   <uses-permission android:name="android.permission. ACCESS_COARSE_LOCATION"
/>
  <uses-permission android:name="android.permission.INTERNET" />
</manifest>
```

Activity_main.xml

```
<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"
   tools:context=".MainActivity" >

   <TextView
      android:id="@+id/textview1"
      android:layout_width="wrap_content"
      android:layout_height="wrap_content"
      android:layout_centerHorizontal="true"
      android:layout_centerVertical="true"
      android:text="@string/hello_world" />

</RelativeLayout>
```

Main Activity.java

```
package com.javapapers.android.geolocationfinder;

import android.os.Bundle;
import android.app.Activity;
import android.content.Context;
import android.location.Location;
import android.location.LocationListener;
import android.location.LocationManager;
import android.widget.TextView;

import android.util.Log;
```

```
public class MainActivity extends Activity implements LocationListener{
protected LocationManager locationManager;
protected LocationListener locationListener;
protected Context context;
TextView txtLat;
String lat;
String provider;
protected String latitude,longitude;
protected boolean gps_enabled,network_enabled;

@Override
protected void onCreate(Bundle savedInstanceState) {
super.onCreate(savedInstanceState);
setContentView(R.layout.activity_main);
txtLat = (TextView) findViewById(R.id.textview1);

locationManager = (LocationManager) getSystemService(Context.LOCATION_SERVICE);
locationManager.requestLocationUpdates(LocationManager.GPS_PROVIDER, 0, 0, this);
}
@Override
public void onLocationChanged(Location location) {
txtLat = (TextView) findViewById(R.id.textview1);
txtLat.setText("Latitude:" + location.getLatitude() + ", Longitude:" +
location.getLongitude());
}

@Override
public void onProviderDisabled(String provider) {
Log.d("Latitude","disable");
}

@Override
public void onProviderEnabled(String provider) {
Log.d("Latitude","enable");
}

@Override
public void onStatusChanged(String provider, int status, Bundle extras) {
Log.d("Latitude","status");
}
}
```

OUTPUT:

RESULT:

Ex No: 7
Date:

DEVELOP AN APPLICATION TO IMPLEMENT CRUD OPERATIONS USING SQLITE DATABASE

AIM:

To develop a simple application for demonstrating the CRUD operations using SQLite database.

ALGORITHM:

Step 1: Start the process.
Step 2: In Eclipse, create a new Android application project by clicking the menu File -> New -> Android Application Project.
Step 3: Give the application name, project name, package name and click Next.
Step 4: Click Next in the Configure project and Configure the attributes of the icon set wizard.
Step 5: Select Blank activity and click Next.
Step 6: Specify the Activity and Layout name. Click Finish.
Step 7: Choose the version of emulator as Android 10.
Step 8: Write the coding in corresponding layout files and save them.
Step 9: Write the coding in corresponding Activity files and save them.
Step 10: Create an emulator using Window -> Android Virtual Device Manager -> New Android Virtual Device.

Step 11: Select the Android Virtual Device and give start and launch.
Step 12: Now run the project on emulator.
Step 13: Stop the process.
PROGRAM:
activity_main.xml:

```
<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"
        android:paddingBottom="@dimen/activity_vertical_margin"
   android:paddingLeft="@dimen/activity_horizontal_margin"
   android:paddingRight="@dimen/activity_horizontal_margin"
   android:paddingTop="@dimen/activity_vertical_margin"
        tools:context=".MainActivity" >

        <Button
      android:id="@+id/button1"
      android:layout_width="wrap_content"
      android:layout_height="wrap_content"
      android:layout_alignParentTop="true"
      android:layout_centerHorizontal="true"
      android:layout_marginTop="29dp"
      android:text="Login" />

        <Button
      android:id="@+id/button2"
      android:layout_width="wrap_content"
      android:layout_height="wrap_content"
      android:layout_alignLeft="@+id/button1"
      android:layout_below="@+id/button1"
      android:layout_marginTop="69dp"
      android:text="Register" />

</RelativeLayout>
```

activity_login.xml:

```
<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"
   android:paddingBottom="@dimen/activity_vertical_margin"
   android:paddingLeft="@dimen/activity_horizontal_margin"
   android:paddingRight="@dimen/activity_horizontal_margin"
   android:paddingTop="@dimen/activity_vertical_margin"
```

```
    tools:context=".LoginActivity" >

<TextView
    android:id="@+id/tvName1"
    android:layout_width="wrap_content"
        android:layout_height="wrap_content"
    android:layout_marginTop="25dp"
    android:text="@string/name" />

        <EditText
      android:id="@+id/etName1"
      android:layout_width="wrap_content"
      android:layout_height="wrap_content"
        android:layout_alignBaseline="@+id/tvName1"
      android:layout_alignBottom="@+id/tvName1"
      android:layout_alignParentRight="true"
      android:layout_marginRight="10dp"
        android:ems="7"
      android:inputType="text" >

        <requestFocus />
        </EditText>

        <TextView
      android:id="@+id/tvPassword1"
      android:layout_width="wrap_content"
      android:layout_height="wrap_content"
      android:layout_alignLeft="@+id/tvName1"
      android:layout_below="@+id/etName1"
      android:layout_marginTop="50dp"
      android:text="@string/pass" />

        <EditText
      android:id="@+id/etPassword1"
      android:layout_width="wrap_content"
      android:layout_height="wrap_content"
        android:layout_alignBaseline="@+id/tvPassword1"
      android:layout_alignBottom="@+id/tvPassword1"
      android:layout_alignLeft="@+id/etName1"
        android:ems="7"
      android:inputType="textPassword" />

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

```
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_alignRight="@+id/etPassword1"
        android:layout_below="@+id/etPassword1"
        android:layout_marginRight="24dp"
        android:layout_marginTop="40dp"
        android:text="@string/login" />

        <Button
        android:id="@+id/btnClear"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_alignBaseline="@+id/btnAdd"
        android:layout_alignBottom="@+id/btnAdd"
        android:layout_alignRight="@+id/tvName1"
        android:text="@string/clear" />

</RelativeLayout>
```

activity_user_registration.xml:

```
<RelativeLayout xmlns:tools="http://schemas.android.com/tools"
    xmlns:android="http://schemas.android.com/apk/res/android"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:paddingBottom="@dimen/activity_vertical_margin"
    android:paddingLeft="@dimen/activity_horizontal_margin"
    android:paddingRight="@dimen/activity_horizontal_margin"
    android:paddingTop="@dimen/activity_vertical_margin"
    tools:context=".UserRegistrationActivity" >

        <TextView
        android:id="@+id/tvName1"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginTop="25dp"
        android:text="@string/name" />

        <EditText
        android:id="@+id/etName1"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_alignBaseline="@+id/tvName1"
        android:layout_alignBottom="@+id/tvName1"
        android:layout_alignParentRight="true"
        android:layout_marginRight="10dp"
```

```
    android:ems="7"
android:inputType="text">

    <requestFocus />
    </EditText>

    <TextView
android:id="@+id/tvPassword1"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:layout_alignLeft="@+id/tvName1"
android:layout_below="@+id/etName1"
android:layout_marginTop="50dp"
android:text="@string/pass" />

    <EditText
android:id="@+id/etPassword1"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:layout_alignBaseline="@+id/tvPassword1"
android:layout_alignBottom="@+id/tvPassword1"
android:layout_alignLeft="@+id/etName1"
    android:ems="7"
android:inputType="textPassword"/>

    <TextView
android:id="@+id/textView1"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:layout_below="@+id/tvPassword1"
    android:layout_alignLeft="@+id/tvPassword1"
android:layout_marginTop="60dp"
android:text="@string/gender" />

    <RadioGroup
android:id="@+id/tv1"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
    android:layout_alignLeft="@+id/etPassword1"
android:layout_below="@+id/etPassword1"
android:layout_marginTop="28dp" >

    <RadioButton
    android:id="@+id/radio0"
```

```
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:checked="true"
    android:text="@string/male" />

    <RadioButton
    android:id="@+id/radio1"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="@string/female" />
    </RadioGroup>

    <TextView
android:id="@+id/tvCity"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
     android:layout_alignLeft="@+id/tvPassword1"
android:layout_below="@+id/tv1"
android:layout_marginTop="20dp"
android:text="@string/city" />

    <Spinner
android:id="@+id/spinner1"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:layout_alignLeft="@+id/tv1"
android:layout_alignParentRight="true"
android:layout_below="@+id/tv1"
android:entries="@array/city"/>

    <TextView
android:id="@+id/textView2"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:layout_alignLeft="@+id/tvCity"
android:layout_below="@+id/spinner1"
android:layout_marginTop="22dp"
android:text="@string/hobbies" />

    <CheckBox
android:id="@+id/checkBox1"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:layout_alignBaseline="@+id/textView2"
```

```
        android:layout_alignBottom="@+id/textView2"
        android:layout_alignLeft="@+id/spinner1"
        android:text="@string/reading" />


        <CheckBox
        android:id="@+id/checkBox2"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_alignLeft="@+id/checkBox1"
        android:layout_below="@+id/checkBox1"
        android:text="@string/play" />

        <Button
        android:id="@+id/btnAdd"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_alignParentBottom="true"
        android:layout_centerHorizontal="true"
        android:text="@string/adduser" />

</RelativeLayout>
```

activity_welcome.xml:

```
<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"
    android:paddingBottom="@dimen/activity_vertical_margin"
        android:paddingLeft="@dimen/activity_horizontal_margin"
    android:paddingRight="@dimen/activity_horizontal_margin"
    android:paddingTop="@dimen/activity_vertical_margin"
    tools:context=".WelcomeActivity" >

        <TextView
        android:id="@id/tv1"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="@string/wel" />

</RelativeLayout>
```

MainActivity.java:

```
package com.madlab.mysimpledb;
```

```
import android.os.Bundle;
import android.app.Activity;
import android.content.Intent;
import android.view.Menu;
import android.view.View;
import android.view.View.OnClickListener;
import android.widget.Button;

public class MainActivity extends Activity {

	@Override
	protected void onCreate(Bundle savedInstanceState) {
		super.onCreate(savedInstanceState);
		setContentView(R.layout.activity_main);
		Button b1 = (Button)findViewById(R.id.button1);
		Button b2 = (Button)findViewById(R.id.button2);
		b1.setOnClickListener(new OnClickListener() {

			@Override
			public void onClick(View v) {
				Intent in = new Intent(getApplicationContext(),
LoginActivity.class);
				startActivity(in);
			}
		});
		b2.setOnClickListener(new OnClickListener() {

			@Override
			public void onClick(View v) {
				Intent in = new Intent(getApplicationContext(),
UserRegistrationActivity.class);
				startActivity(in);
			}
		});
	}
}
```

LoginActivity.java

```
package com.madlab.mysimpledb;

import android.os.Bundle;
import android.app.Activity;
import android.content.Intent;
```

```
import android.view.Menu;
import android.view.View;
import android.view.View.OnClickListener;
import android.widget.Button;
import android.widget.EditText;
import android.widget.Toast;

public class LoginActivity extends Activity {

	DBAdapter dbAdapter;
	Button b1, b2;
	EditText et1, et2;
	String s1, s2;

	@Override
	protected void onCreate(Bundle savedInstanceState) {
		super.onCreate(savedInstanceState);
		setContentView(R.layout.activity_login);
		b1 = (Button)findViewById(R.id.btnAdd);
		b2 = (Button)findViewById(R.id.btnClear);
		et1 = (EditText)findViewById(R.id.etName1);
		et2 = (EditText)findViewById(R.id.etPassword1);
		dbAdapter = new DBAdapter(getApplicationContext());
		dbAdapter.open();

		b1.setOnClickListener(new OnClickListener() {

			@Override
			public void onClick(View v) {
				s1 = et1.getText().toString();
				s2 = et2.getText().toString();
				//if((s1!=null)&&(s2!=null)){
					String p = dbAdapter.getUserPass(s1);
					if(p.equals(s2)){
						Intent in = new Intent(getApplicationContext(),
WelcomeActivity.class);
						in.putExtra("name", s1);
						startActivity(in);
					}
				/*}*/
				else{
					Toast.makeText(LoginActivity.this, "Enter
Username/Password", Toast.LENGTH_LONG).show();
				}
```

```
                }
            });
            b2.setOnClickListener(new OnClickListener() {

                @Override
                public void onClick(View v) {
                    et1.setText("");
                    et2.setText("");
                }
            });
        }
}
```

UserRegistrationActivity.java

```
package com.madlab.mysimpledb;

import android.os.Bundle;
import android.app.Activity;
import android.view.Menu;
import android.view.View;
import android.view.View.OnClickListener;
import android.widget.Button;
import android.widget.CheckBox;
import android.widget.EditText;
import android.widget.RadioButton;
import android.widget.RadioGroup;
import android.widget.Spinner;
import android.widget.Toast;

public class UserRegistrationActivity extends Activity {

    DBAdapter loginDB;
    EditText name, pass;
    CheckBox c1, c2;
    RadioGroup rg;
    RadioButton r;
    Spinner s;
    Button btnAdd;

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

```
		loginDB = new DBAdapter(this);
		name = (EditText)findViewById(R.id.etName1);
		pass = (EditText)findViewById(R.id.etPassword1);
		btnAdd = (Button)findViewById(R.id.btnAdd);
		c1 = (CheckBox)findViewById(R.id.checkBox1);
		c2 = (CheckBox)findViewById(R.id.checkBox2);
		rg = (RadioGroup)findViewById(R.id.tv1);
		s=(Spinner)findViewById(R.id.spinner1);
		btnAdd.setOnClickListener(new OnClickListener() {

			@Override
			public void onClick(View v) {
				int rs = rg.getCheckedRadioButtonId();
				r=(RadioButton)findViewById(rs);
				StringBuffer sb = new StringBuffer();
				if(c1.isChecked())
					sb.append(c1.getText().toString());
				if(c2.isChecked())
					sb.append(", "+c2.getText().toString());
				boolean isInserted =
loginDB.addStudent(name.getText().toString(), pass.getText().toString(),
r.getText().toString(),s.getSelectedItem().toString(), sb.toString());
				if(isInserted)
					Toast.makeText(UserRegistrationActivity.this, "New
Student Added Successfully", Toast.LENGTH_LONG).show();
				else
					Toast.makeText(UserRegistrationActivity.this, "New
Student Not Added", Toast.LENGTH_LONG).show();
			}
		});
	}

}
```

WelcomeActivity.java

```
package com.madlab.mysimpledb;

import android.os.Bundle;
import android.app.Activity;
import android.content.Intent;
import android.view.Menu;
import android.widget.TextView;
```

```
public class WelcomeActivity extends Activity {

	@Override
	protected void onCreate(Bundle savedInstanceState) {
		super.onCreate(savedInstanceState);
		setContentView(R.layout.activity_welcome);
		Intent in = getIntent();
		String s = in.getStringExtra("name");
		TextView tv = (TextView)findViewById(R.id.tv1);
		tv.append(s);
	}
}
```

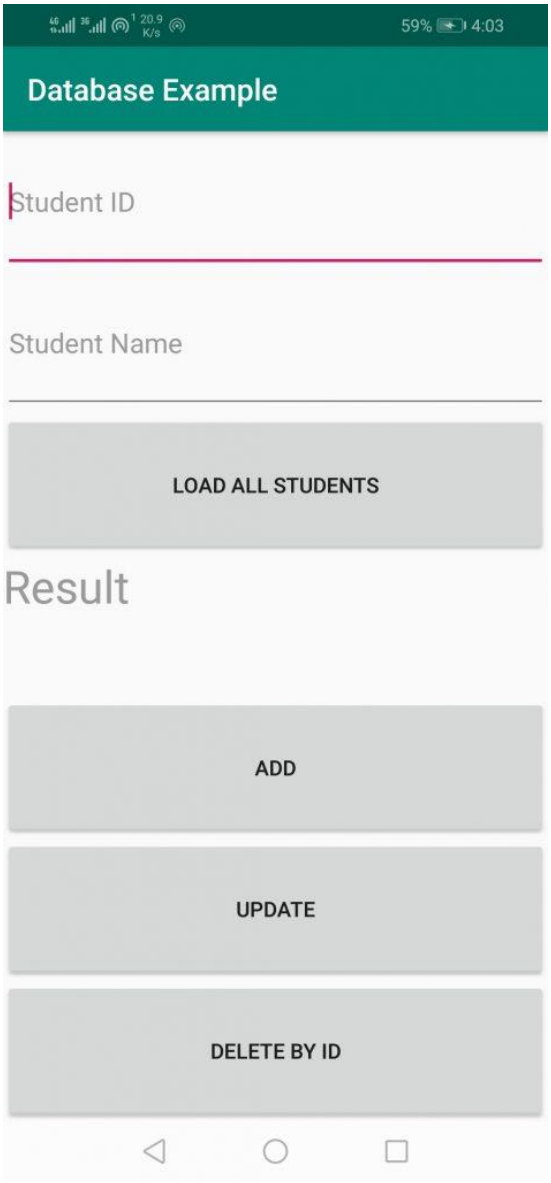
DBAdapter.java

```
package com.madlab.mysimpledb;


import android.content.ContentValues;
import android.content.Context;
import android.database.Cursor;
import android.database.sqlite.SQLiteDatabase;
import android.database.sqlite.SQLiteDatabase.CursorFactory;
import android.database.sqlite.SQLiteOpenHelper;
import android.util.Log;

public class DBAdapter {

	private static final String DB_NAME = "User_Details.db";
	private static final int DB_VERSION = 1;

	private static final String TABLE_NAME = "User_Table";
	private static final String COL_SNO = "sno";
	private static final String COL_NAME = "name";
	private static final String COL_PASS = "password";
	private static final String COL_GENDER = "gender";
	private static final String COL_CITY = "city";
	private static final String COL_HOBBIES = "hobbies";


	private static final String TABLE_CREATE = "create table " + TABLE_NAME + "("
+ COL_SNO + " integer primary key autoincrement, " + COL_NAME + " text not null, " +
COL_PASS + " text not null, " + COL_GENDER + " text not null, " + COL_CITY + " text
not null, " + COL_HOBBIES + " text not null);";
```

```
	private static final String DROP_TABLE = "drop table if exists " +TABLE_NAME
+";";


	private SQLiteDatabase userDatabase;
	private final Context context;
	private MyDBHelper helper;

	public DBAdapter(Context context){
		this.context = context;
		helper = new MyDBHelper(context, DB_NAME, null, DB_VERSION);
	}

	private class MyDBHelper extends SQLiteOpenHelper{

		public MyDBHelper(Context context, String name, CursorFactory factory,int
version) {
			super(context, name, factory, version);
			//userDatabase = this.getWritableDatabase();
			//userDatabase.execSQL(DROP_TABLE);
			onCreate(userDatabase);
		}

		@Override
		public void onCreate(SQLiteDatabase db) {
			Log.i("Table Creation", "Table is being created");
			db.execSQL(TABLE_CREATE);
		}

		@Override
		public void onUpgrade(SQLiteDatabase db, int oldVersion, int newVersion) {
			Log.w("Updation", "Database version is being updated");
			db.execSQL(DROP_TABLE);
			onCreate(db);
		}
	}

	public DBAdapter open(){
		userDatabase=helper.getWritableDatabase();
		return this;
	}
	public void close() {
		userDatabase.close();
	}
```

```
	public boolean addStudent(String name, String pass, String gender, String city, String hobbies){
		ContentValues cv = new ContentValues();
		cv.put(COL_NAME, name);
		cv.put(COL_PASS, pass);
		cv.put(COL_GENDER, gender);
		cv.put(COL_CITY, city);
		cv.put(COL_HOBBIES, hobbies);
		long res = userDatabase.insert(TABLE_NAME, null, cv);
		if(res ==-1)
			return false;
		else
			return true;
	}

	public String getUserPass(String u){
		Cursor cursor = userDatabase.rawQuery("SELECT * FROM User_Table where name='" + u + "'", null);
		if(cursor !=null && cursor.moveToFirst())
			return cursor.getString(2);
		else
			return "";
	}

}
```

OUTPUT :



RESULT :

Thus the program to develop a simple application for demonstrating the CRUD operations using SQLite database has been built successfully

Ex No: 8
Date:

ANDROID APPLICATION FOR
PHONE NUMBER VERIFICATION BY OTP USING FIREBASE

AIM

Develop an application to implement phone number Verification by OTP using Firebase in Android.

ALGORITHM

CODE

MainActivity.java

```
package com.example.phonenumberotp;

import android.content.Intent;
import android.os.Bundle;
import android.text.TextUtils;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import android.widget.Toast;

import androidx.annotation.NonNull;
import androidx.appcompat.app.AppCompatActivity;

import com.google.android.gms.tasks.OnCompleteListener;
import com.google.android.gms.tasks.Task;
import com.google.android.gms.tasks.TaskExecutors;
import com.google.firebase.FirebaseException;
import com.google.firebase.auth.AuthResult;
import com.google.firebase.auth.FirebaseAuth;
import com.google.firebase.auth.PhoneAuthCredential;
import com.google.firebase.auth.PhoneAuthProvider;

import java.util.concurrent.TimeUnit;

public class MainActivity extends AppCompatActivity {
  private FirebaseAuth mAuth;
  private EditText edtPhone, edtOTP;
  private Button verifyOTPBtn, generateOTPBtn;
  private String verificationId;

  @Override
  protected void onCreate(Bundle savedInstanceState) {
    super.onCreate(savedInstanceState);
    setContentView(R.layout.activity_main);
    mAuth = FirebaseAuth.getInstance();
    edtPhone = findViewById(R.id.idEdtPhoneNumber);
    edtOTP = findViewById(R.id.idEdtOtp);
    verifyOTPBtn = findViewById(R.id.idBtnVerify);
    generateOTPBtn = findViewById(R.id.idBtnGetOtp);
    generateOTPBtn.setOnClickListener(new View.OnClickListener() {
      @Override
```

```
        public void onClick(View v) {
            if (TextUtils.isEmpty(edtPhone.getText().toString())) {
                    Toast.makeText(MainActivity.this, "Please enter a valid phone number.",
Toast.LENGTH_SHORT).show();
            } else {
                String phone = "+91" + edtPhone.getText().toString();
                sendVerificationCode(phone);
            }
        }
    });
    verifyOTPBtn.setOnClickListener(new View.OnClickListener() {
        @Override
        public void onClick(View v) {
            if (TextUtils.isEmpty(edtOTP.getText().toString())) {
                                    Toast.makeText(MainActivity.this, "Please enter OTP",
Toast.LENGTH_SHORT).show();
            } else {
                verifyCode(edtOTP.getText().toString());
            }
        }
    });
  }

  private void signInWithCredential(PhoneAuthCredential credential) {
    mAuth.signInWithCredential(credential)
            .addOnCompleteListener(new OnCompleteListener<AuthResult>() {
                @Override
                public void onComplete(@NonNull Task<AuthResult> task) {
                    if (task.isSuccessful()) {
                        Intent i = new Intent(MainActivity.this, HomeActivity.class);
                        startActivity(i);
                        finish();
                    } else {
                            Toast.makeText(MainActivity.this, task.getException().getMessage(),
Toast.LENGTH_LONG).show();
                    }
                }
            });
  }


  private void sendVerificationCode(String number) {
    PhoneAuthOptions options =
            PhoneAuthOptions.newBuilder(mAuth)
```

```
                .setPhoneNumber(number)
                .setTimeout(60L, TimeUnit.SECONDS)
                .setActivity(this)
                .setCallbacks(mCallBack)
                .build();
        PhoneAuthProvider.verifyPhoneNumber(options);
    }
    private PhoneAuthProvider.OnVerificationStateChangedCallbacks

        mCallBack = new PhoneAuthProvider.OnVerificationStateChangedCallbacks() {
        @Override
            public void onCodeSent(String s, PhoneAuthProvider.ForceResendingToken
forceResendingToken) {
            super.onCodeSent(s, forceResendingToken);
            verificationId = s;
        }
        @Override
        public void onVerificationCompleted(PhoneAuthCredential phoneAuthCredential) {
            final String code = phoneAuthCredential.getSmsCode();
            if (code != null) {
                edtOTP.setText(code);
                verifyCode(code);
            }
        }
        @Override
        public void onVerificationFailed(FirebaseException e) {
            Toast.makeText(MainActivity.this, e.getMessage(), Toast.LENGTH_LONG).show();
        }
    };
    private void verifyCode(String code) {
         PhoneAuthCredential credential = PhoneAuthProvider.getCredential(verificationId,
code);
        signInWithCredential(credential);
    }
}
```

HomeAcitivity.java

```
package com.example.phonenumberotp;

import androidx.appcompat.app.AppCompatActivity;

import android.os.Bundle;
```

```
public class HomeActivity extends AppCompatActivity {

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

Activity_main.xml

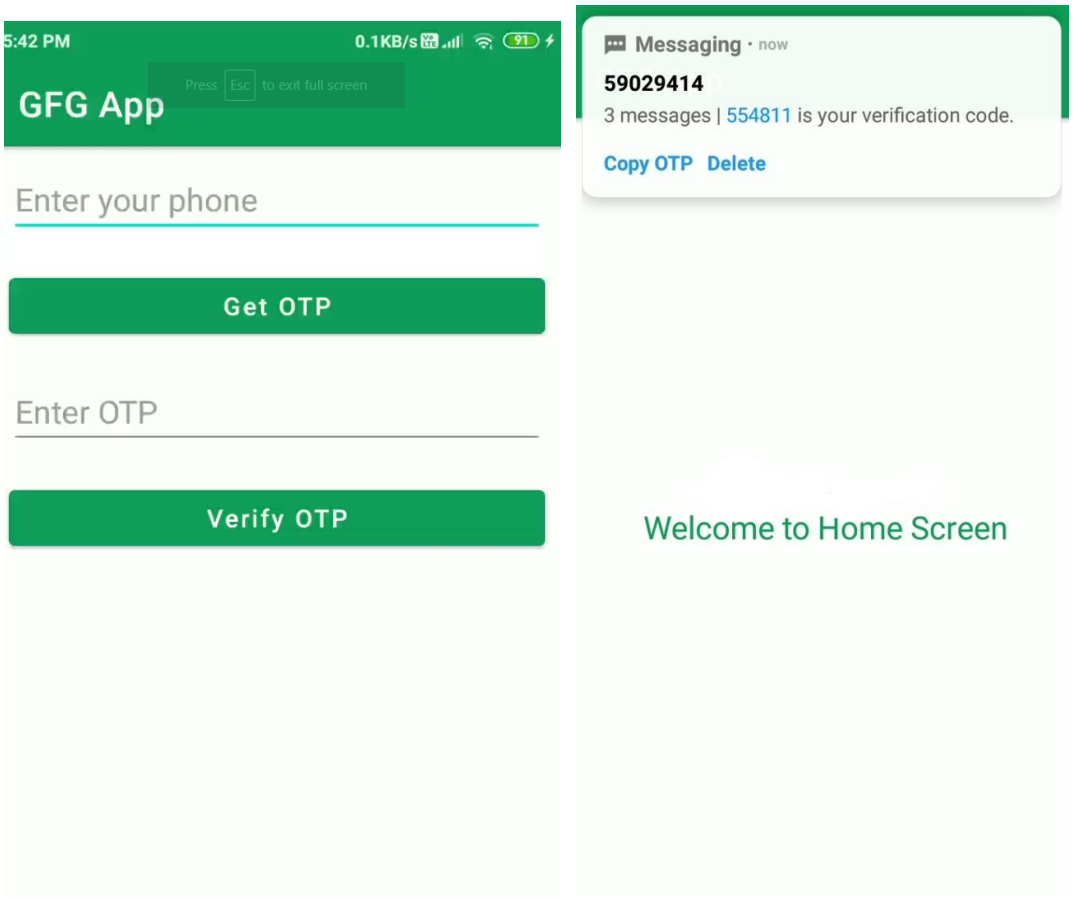
```
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout
  xmlns:android="http://schemas.android.com/apk/res/android"
  xmlns:tools="http://schemas.android.com/tools"
  android:layout_width="match_parent"
  android:layout_height="match_parent"
  tools:context=".MainActivity">

  <!--Edittext for getting users phone number-->
  <EditText
    android:id="@+id/idEdtPhoneNumber"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_centerHorizontal="true"
    android:layout_margin="10dp"
    android:hint="Enter your phone"
    android:importantForAutofill="no"
    android:inputType="phone" />

  <!--Button for getting OTP-->
  <Button
    android:id="@+id/idBtnGetOtp"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_below="@id/idEdtPhoneNumber"
    android:layout_margin="10dp"
    android:text="Get OTP"
    android:textAllCaps="false" />

  <!--Edittext for getting otp from user-->
  <EditText
    android:id="@+id/idEdtOtp"
    android:layout_width="match_parent"
```

```
        android:layout_height="wrap_content"
        android:layout_below="@id/idBtnGetOtp"
        android:layout_margin="10dp"
        android:hint="Enter OTP"
        android:importantForAutofill="no"
        android:inputType="phone" />

    <!--button for verifying user OTP-->
    <Button
        android:id="@+id/idBtnVerify"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_below="@id/idEdtOtp"
        android:layout_margin="10dp"
        android:text="Verify OTP"
        android:textAllCaps="false" />

</RelativeLayout>
```

Activity_home.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"
    tools:context=".HomeActivity">

    <TextView
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_centerInParent="true"
        android:padding="10dp"
        android:text="Geeks for Geeks \n Welcome to Home Screen"
        android:textAlignment="center"
        android:textColor="@color/purple_500"
        android:textSize="20sp" />

</RelativeLayout>
```

Output :



RESULT

Thus the android app for phone number verification by OTP using firebase has been created and executed successfully.

Ex No: 9
Date:

ANDROID APPLICATION FOR EXTRACTING INFORMATION FOR JSON

AIM:

To create an android application to extract employee information using JSON messages and load it in UI.

ALGORITHM:

CODE:

Activity_main.xml

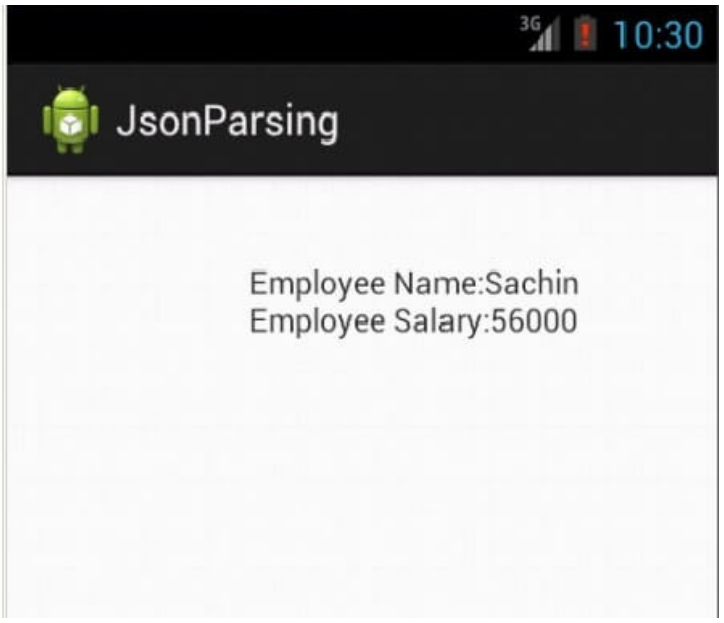
```
<RelativeLayout xmlns:androclass="http://schemas.android.com/apk/res/android"
   xmlns:tools="http://schemas.android.com/tools"
   android:layout_width="match_parent"
   android:layout_height="match_parent"
        tools:context=".MainActivity" >

        <TextView
      android:id="@+id/textView1"
      android:layout_width="wrap_content"
      android:layout_height="wrap_content"
      android:layout_alignParentLeft="true"
        android:layout_alignParentTop="true"
      android:layout_marginLeft="75dp"
      android:layout_marginTop="46dp"
        android:text="TextView" />

</RelativeLayout>
```

MainActivity.java

```
import org.json.JSONException;
import org.json.JSONObject;
import android.app.Activity;
import android.os.Bundle;
```

```
import android.widget.TextView;

public class MainActivity extends Activity {
public static final String JSON_STRING="{\"employee\":{\"name\":\"Sachin\",\"salary\":56000}}";

@Override
public void onCreate(Bundle savedInstanceState) {
super.onCreate(savedInstanceState);
setContentView(R.layout.activity_main);

TextView textView1=(TextView)findViewById(R.id.textView1);

try{
JSONObject emp=(new JSONObject(JSON_STRING)).getJSONObject("employee");
String empname=emp.getString("name");
int empsalary=emp.getInt("salary");

String str="Employee Name:"+empname+"\n"+"Employee Salary:"+empsalary;
textView1.setText(str);

}catch (Exception e) {e.printStackTrace();}

}

}
```

OUTPUT:



RESULT:

Thus the android application for extracting information from JSON messages has been created and executed successfully.

Ex No: 10
Date:

MOBILE APPLICATION USING ANDROID

a) Educational Quiz App

AIM :

To create an educational quiz application using android.

ALGORITHM:

CODE:

Activity_main.xml

```
<?xml version="1.0" encoding="utf-8"?>
<!--Using linear layout with vertical orientation and center gravity -->
<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="match_parent"
    android:background="#FFFFFF"
    android:layout_height="match_parent"
    android:orientation="vertical"
    android:gravity="center"
    tools:context=".MainActivity">

    <!--ImageView used for showing pictures along with questions-->
    <ImageView
        android:id="@+id/myimage"
        android:layout_width="wrap_content"
        android:src="@drawable/f1"
        android:layout_height="wrap_content"/>

    <!--TextView used for showing questions on screen-->
    <TextView
        android:id="@+id/answer_text_view"
        android:text="@string/a"
        android:textColor="@android:color/black"
        android:textSize="30sp"
        android:padding="10dp"
```

```
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"/>

        <!--Using another LinearLayout for showing buttons
            in horizontal orientation-->
        <LinearLayout
            android:layout_width="wrap_content"
            android:layout_height="wrap_content">

            <!--TrueButton-->
            <Button
                android:id="@+id/true_button"
                android:layout_marginRight="20dp"
                android:backgroundTint="#5BD91B"
                android:layout_width="wrap_content"
                android:layout_height="wrap_content"
                android:textSize="20sp"
                android:text="@string/true_text" />

            <!--FalseButton-->
            <Button
                android:id="@+id/false_button"
                android:layout_marginLeft="20dp"
                android:layout_width="wrap_content"
                android:backgroundTint="#E33328"
                android:layout_height="wrap_content"
                android:textSize="20sp"
                android:text="@string/false_text" />

        </LinearLayout>

        <LinearLayout
            android:layout_width="wrap_content"
            android:layout_height="wrap_content">

            <!--PreviousButton-->
            <ImageButton
                android:id="@+id/prev_button"
                android:layout_width="wrap_content"
                android:layout_height="wrap_content"

android:src="@drawable/baseline_keyboard_arrow_left_black_18dp"
                android:backgroundTint="#DFD2D1"
                android:text="@string/prev_text" />
```

```
                <!--NextButton-->
                <ImageButton
                        android:id="@+id/next_button"
                        android:layout_width="wrap_content"
                        android:layout_height="wrap_content"
                        android:backgroundTint="#DFD2D1"

android:src="@drawable/baseline_keyboard_arrow_right_black_18dp"
                        android:text="@string/next_text" />

        </LinearLayout>
</LinearLayout>
```

Questions.java

```
package org.geeksforgeeks.quizapp;

public class Question
{
        // answerResId will store question
        private int answerResId;

        // answerTrue will store correct answer
        // of the question provided
        private boolean answerTrue;

        public Question(int answerResId, boolean answerTrue)
        {
        // setting the values through
        // arguments passed in constructor
        this.answerResId = answerResId;
        this.answerTrue = answerTrue;
        }

        // returning the question passed
        public int getAnswerResId()
        {
        return answerResId;
        }

        // setting the question passed
        public void setAnswerResId(int answerResId)
        {
        this.answerResId = answerResId;
        }
```

```
        // returning the correct answer
        // of question
        public boolean isAnswerTrue()
        {
        return answerTrue;
        }

        // setting the correct
        // ans of question
        public void setAnswerTrue(boolean answerTrue)
        {
        this.answerTrue = answerTrue;
        }
}
```

Strings.xml

```
<resources>
        <!--All the string resources come here including Questions and title -->
        <string name="app_name">GFG | HOW WELL DO YOU KNOW SIMRAN?</string>
        <string name="correct"><b>CORRECTNESS IS</b> \n
                                        <b>%1$d</b> OUT OF 6</string>
        <string name="true_text">true</string>
        <string name="false_text">false</string>
        <string name="correct_answer">That\'s correct</string>
        <string name="wrong_answer">That\'s incorrect</string>
        <string name="a">Simran loves Chocolates.</string>
        <string name="b">Simran Knows Following Skills:\n \t
                                <b>Ballet</b>\n \t
                                <b>HipHop</b></string>
        <string name="c">Do You Think Simran Believes In:\n \t
                                <b>Luck!!!</b></string>
        <string name="d">Do You Think Simran Wants To Visit <b>Italy</b></string>
        <string name="e">Simran Loves Loyalty.</string>
        <string name="f">Simran Sleeps Less</string>
        <string name="next_text">next</string>
        <string name="prev_text">previous</string>

</resources>
```

Main_Activity.java

```
import android.annotation.SuppressLint;
```

```
import android.os.Build;
import android.os.Bundle;
import android.util.Log;
import android.view.View;
import android.widget.Button;
import android.widget.ImageButton;
import android.widget.ImageView;
import android.widget.TextView;
import android.widget.Toast;
import androidx.annotation.RequiresApi;
import androidx.appcompat.app.AppCompatActivity;

public class MainActivity extends AppCompatActivity
        implements View.OnClickListener {
        // setting up things
        private Button falseButton;
        private Button trueButton;
        private ImageButton nextButton;
        private ImageButton prevButton;
        private ImageView Image;
        private TextView questionTextView;
        private int correct = 0;
        // to keep current question track
        private int currentQuestionIndex = 0;

        private Question[] questionBank = new Question[] {
                // array of objects of class Question
                // providing questions from string
                // resource and the correct ans
                new Question(R.string.a, true),
                new Question(R.string.b, false),
                new Question(R.string.c, true),
                new Question(R.string.d, true),
                new Question(R.string.e, true),
                new Question(R.string.f, false),

        };

        @Override
        protected void onCreate(Bundle savedInstanceState)
        {
                super.onCreate(savedInstanceState);
                setContentView(R.layout.activity_main);
                // setting up the buttons
```

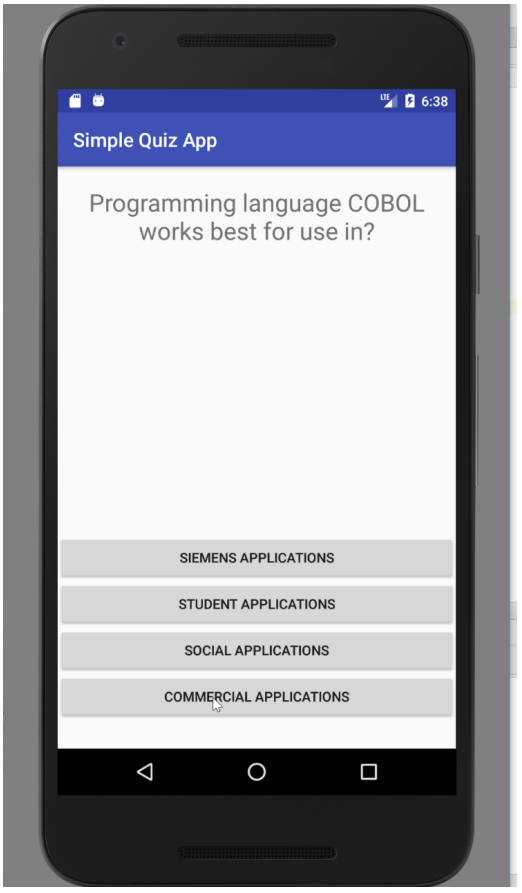
```
        // associated with id
        falseButton = findViewById(R.id.false_button);
        trueButton = findViewById(R.id.true_button);
        nextButton = findViewById(R.id.next_button);
        prevButton = findViewById(R.id.prev_button);
        // register our buttons to listen to
        // click events
        questionTextView
                = findViewById(R.id.answer_text_view);
        Image = findViewById(R.id.myimage);
        falseButton.setOnClickListener(this);
        trueButton.setOnClickListener(this);
        nextButton.setOnClickListener(this);
        prevButton.setOnClickListener(this);
}

@SuppressLint("SetTextI18n")
@RequiresApi(api = Build.VERSION_CODES.LOLLIPOP)
@Override
public void onClick(View v)
{
        // checking which button is
        // clicked by user
        // in this case user choose false
        switch (v.getId()) {
        case R.id.false_button:
                checkAnswer(false);
                break;

        case R.id.true_button:
                checkAnswer(true);
                break;

        case R.id.next_button:
                // go to next question
                // limiting question bank range
                if (currentQuestionIndex < 7) {
                currentQuestionIndex
                        = currentQuestionIndex + 1;
                // we are safe now!
                // last question reached
                // making buttons
                // invisible
                if (currentQuestionIndex == 6) {
```

```
                        questionTextView.setText(getString(
                        R.string.correct, correct));
                    nextButton.setVisibility(
                        View.INVISIBLE);
                    prevButton.setVisibility(
                        View.INVISIBLE);
                    trueButton.setVisibility(
                        View.INVISIBLE);
                    falseButton.setVisibility(
                        View.INVISIBLE);
                    if (correct > 3)

                        questionTextView.setText(
                            "CORRECTNESS IS " + correct
                            + " "
                            + "OUT OF 6");
                    // showing correctness
                    else
                        Image.setImageResource(
                            R.drawable.resu);
                        // if correctness<3 showing sad emoji
                }
                else {
                    updateQuestion();
                }
                }

                break;
        case R.id.prev_button:
                if (currentQuestionIndex > 0) {
                currentQuestionIndex
                    = (currentQuestionIndex - 1)
                    % questionBank.length;
                updateQuestion();
                }
        }
}

@RequiresApi(api = Build.VERSION_CODES.LOLLIPOP)
private void updateQuestion()
{
        Log.d("Current",
                "onClick: " + currentQuestionIndex);
```

```
        questionTextView.setText(
                questionBank[currentQuestionIndex]
                .getAnswerResId());
        // setting the textview with new question
        switch (currentQuestionIndex) {
        case 1:
                // setting up image for each
                // question
                Image.setImageResource(R.drawable.f2);
                break;
        case 2:
                Image.setImageResource(R.drawable.f3);
                break;
        case 3:
                Image.setImageResource(R.drawable.f4);
                break;
        case 4:
                Image.setImageResource(R.drawable.f5);
                break;
        case 5:
                Image.setImageResource(R.drawable.f6);
                break;
        case 6:
                Image.setImageResource(R.drawable.f7);
                break;
        case 7:
                Image.setImageResource(R.drawable.f1);
                break;
        }
}
private void checkAnswer(boolean userChooseCorrect)
{
        boolean answerIsTrue
                = questionBank[currentQuestionIndex]
                .isAnswerTrue();
        // getting correct ans of current question
        int toastMessageId;
        // if ans matches with the
        // button clicked

        if (userChooseCorrect == answerIsTrue) {
                toastMessageId = R.string.correct_answer;
                correct++;
        }
```

```
                else {
                        // showing toast
                        // message correct
                        toastMessageId = R.string.wrong_answer;
                }

                Toast
                        .makeText(MainActivity.this, toastMessageId,
                                Toast.LENGTH_SHORT)
                        .show();
        }
}
```

OUTPUT:



RESULT

Thus the android application for an educational quiz application has been created and executed successfully.

b)Tour Guide App

Activity_main.xml

```
<LinearLayout 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"
  xmlns:app="http://schemas.android.com/apk/res-auto"
  android:orientation="vertical"
  tools:context=".MainActivity">

 <androidx.cardview.widget.CardView
    android:id="@+id/history"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_margin="10dp"
    app:cardBackgroundColor="@color/purple_700">
    <TextView
       android:layout_width="wrap_content"
       android:layout_height="wrap_content"
       android:text="Erode History"
       android:padding="30dp"
       android:textSize="25dp"
       android:textColor="@color/white"
       android:layout_gravity="center"/>
 </androidx.cardview.widget.CardView>
 <androidx.cardview.widget.CardView
    android:id="@+id/shopping"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_margin="10dp"
    app:cardBackgroundColor="@color/purple_700">
    <TextView
       android:layout_width="wrap_content"
       android:layout_height="wrap_content"
       android:text="Shopping Places"
       android:padding="30dp"
       android:textSize="25dp"
       android:textColor="@color/white"
       android:layout_gravity="center"/>
 </androidx.cardview.widget.CardView>
 <androidx.cardview.widget.CardView
    android:id="@+id/restaruntes"
    android:layout_width="match_parent"
```

```
    android:layout_height="wrap_content"
    android:layout_margin="10dp"
    app:cardBackgroundColor="@color/purple_700">
    <TextView
      android:layout_width="wrap_content"
      android:layout_height="wrap_content"
      android:text="Famous Restaurants"
      android:padding="30dp"
      android:textSize="25dp"
      android:textColor="@color/white"
      android:layout_gravity="center"/>
  </androidx.cardview.widget.CardView>
  <androidx.cardview.widget.CardView
    android:id="@+id/park"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_margin="10dp"
    app:cardBackgroundColor="@color/purple_700">
    <TextView
      android:layout_width="wrap_content"
      android:layout_height="wrap_content"
      android:text="Famous Parks"
      android:padding="30dp"
      android:textSize="25dp"
      android:textColor="@color/white"
      android:layout_gravity="center"/>
  </androidx.cardview.widget.CardView>

</LinearLayout>
```

MainActivity.java

```
package com.madlab.tour;


import android.content.Intent;
import android.os.Bundle;
import android.view.View;
import android.view.View.OnClickListener;
import android.widget.Button;
import android.widget.EditText;
import android.widget.Toast;
```

```
import android.app.Activity;

import androidx.cardview.widget.CardView;

public class MainActivity extends Activity {

    CardView history,shopping,park,restaurant;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);

        history = findViewById(R.id.history);
        restaurant = findViewById(R.id.restaruants);
        park = findViewById(R.id.park);
        shopping = findViewById(R.id.shopping);

        history.setOnClickListener(new OnClickListener() {
            @Override
            public void onClick(View view) {
                Intent intent = new Intent(MainActivity.this,SecondActivity.class);
                intent.putExtra("text",getResources().getString(R.string.history));
                startActivity(intent);
            }
        });
        restaurant.setOnClickListener(new OnClickListener() {
            @Override
            public void onClick(View view) {
                Intent intent = new Intent(MainActivity.this,SecondActivity.class);
                intent.putExtra("text",getResources().getString(R.string.restaurant));
                startActivity(intent);
            }
        });
        park.setOnClickListener(new OnClickListener() {
            @Override
            public void onClick(View view) {
                Intent intent = new Intent(MainActivity.this,SecondActivity.class);
                intent.putExtra("text",getResources().getString(R.string.park));
                startActivity(intent);
            }
        });
        shopping.setOnClickListener(new OnClickListener() {
            @Override
            public void onClick(View view) {
```

```
            Intent intent = new Intent(MainActivity.this,SecondActivity.class);
            intent.putExtra("text",getResources().getString(R.string.shopping));
            startActivity(intent);
        }
    });


  }
}
```

Activtiy_second.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="match_parent"
    android:layout_height="match_parent"
    android:gravity="center"
    tools:context=".SecondActivity">

    <TextView
        android:id="@+id/text"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"/>



</LinearLayout>
```

SecondActivity.java

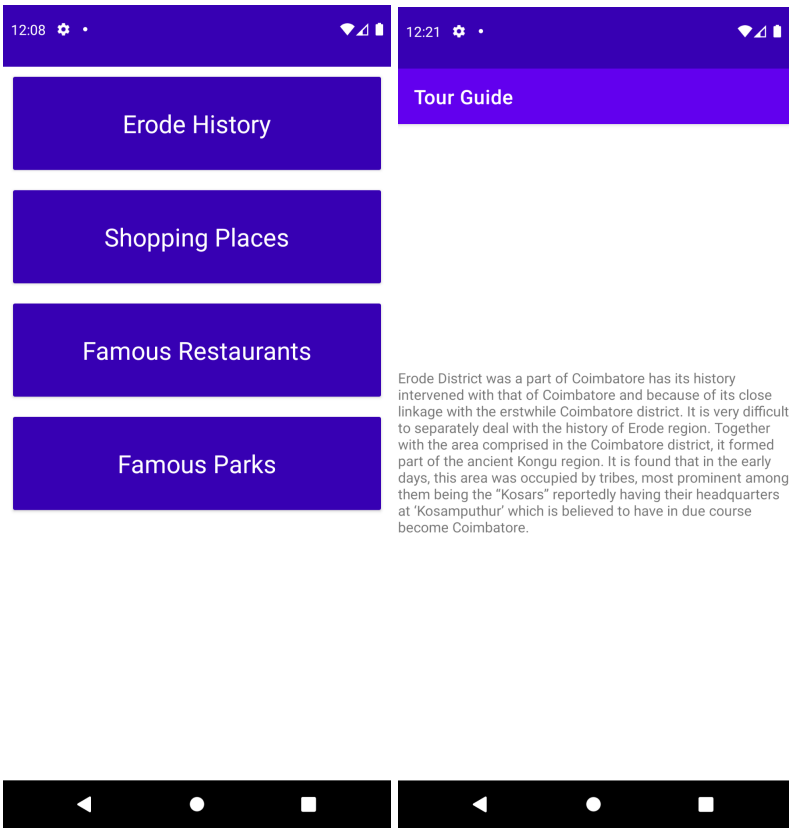
```
package com.madlab.tour;

import androidx.appcompat.app.AppCompatActivity;

import android.content.Intent;
import android.os.Bundle;
import android.widget.TextView;

import org.w3c.dom.Text;

public class SecondActivity extends AppCompatActivity {

    TextView textView;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_second);
```

```
        Intent intent = getIntent();
        textView = findViewById(R.id.text);
        textView.setText(intent.getExtras().getString("text"));
    }
}
```

Strings.xml

```
<resources>
    <string name="app_name">Tour Guide</string>
    <string name="history">Erode District was a part of Coimbatore has its history intervened with that of Coimbatore and because of its close linkage with the erstwhile Coimbatore district. It is very difficult to separately deal with the history of Erode region. Together with the area comprised in the Coimbatore district, it formed part of the ancient Kongu region. It is found that in the early days, this area was occupied by tribes, most prominent among them being the "Kosars" reportedly having their headquarters at 'Kosamputhur' which is believed to have in due course become Coimbatore. </string>
    <string name="park">pannirSelvam park VOC Park</string>
 <string name="shopping">Reliance Mall</string>
 <string name="restaurant">Kfc , Star Briyani</string>


</resources>
```

Output



C) News Feed App

Activty_main.xml

```
<LinearLayout 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"
   xmlns:app="http://schemas.android.com/apk/res-auto"
   android:orientation="vertical"
   tools:context=".MainActivity">
```

```
<androidx.cardview.widget.CardView
    android:id="@+id/news"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_margin="10dp"
    app:cardBackgroundColor="@color/purple_700">
    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="News HeadLines"
        android:padding="30dp"
        android:textSize="25dp"
        android:textColor="@color/white"
        android:layout_gravity="center"/>
</androidx.cardview.widget.CardView>
 <androidx.cardview.widget.CardView
     android:id="@+id/sports"
     android:layout_width="match_parent"
     android:layout_height="wrap_content"
     android:layout_margin="10dp"
     app:cardBackgroundColor="@color/purple_700">
     <TextView
         android:layout_width="wrap_content"
         android:layout_height="wrap_content"
         android:text="Sports"
         android:padding="30dp"
         android:textSize="25dp"
         android:textColor="@color/white"
         android:layout_gravity="center"/>
 </androidx.cardview.widget.CardView>
 <androidx.cardview.widget.CardView
     android:id="@+id/cinema"
     android:layout_width="match_parent"
     android:layout_height="wrap_content"
     android:layout_margin="10dp"
     app:cardBackgroundColor="@color/purple_700">
     <TextView
         android:layout_width="wrap_content"
         android:layout_height="wrap_content"
         android:text="Cinema"
         android:padding="30dp"
         android:textSize="25dp"
         android:textColor="@color/white"
         android:layout_gravity="center"/>
 </androidx.cardview.widget.CardView>
 <androidx.cardview.widget.CardView
     android:id="@+id/science"
     android:layout_width="match_parent"
     android:layout_height="wrap_content"
     android:layout_margin="10dp"
     app:cardBackgroundColor="@color/purple_700">
     <TextView
```

```
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:text="Science"
            android:padding="30dp"
            android:textSize="25dp"
            android:textColor="@color/white"
            android:layout_gravity="center"/>
    </androidx.cardview.widget.CardView>

</LinearLayout>
```

MainActivtiy.java

```
package com.madlab.newsfeed;

import android.content.Intent;
import android.os.Bundle;
import android.view.View;
import android.view.View.OnClickListener;
import android.widget.Button;
import android.widget.EditText;
import android.widget.Toast;
import android.app.Activity;

import androidx.cardview.widget.CardView;

public class MainActivity extends Activity {

    CardView news,cinema,sports,science;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);

        news = findViewById(R.id.news);
        science = findViewById(R.id.science);
        sports = findViewById(R.id.sports);
        cinema = findViewById(R.id.cinema);

        news.setOnClickListener(new OnClickListener() {
            @Override
            public void onClick(View view) {
                                                    Intent   intent   =   new
Intent(MainActivity.this,SecondActivity.class);

intent.putExtra("text",getResources().getString(R.string.news));
                startActivity(intent);
            }
        });
        science.setOnClickListener(new OnClickListener() {
            @Override
            public void onClick(View view) {
                                                    Intent   intent   =   new
Intent(MainActivity.this,SecondActivity.class);
```

```
intent.putExtra("text",getResources().getString(R.string.science));
                startActivity(intent);
            }
        });
        sports.setOnClickListener(new OnClickListener() {
            @Override
            public void onClick(View view) {
                                                    Intent   intent   =   new
Intent(MainActivity.this,SecondActivity.class);

intent.putExtra("text",getResources().getString(R.string.sports));
                startActivity(intent);
            }
        });
        cinema.setOnClickListener(new OnClickListener() {
            @Override
            public void onClick(View view) {
                                                    Intent   intent   =   new
Intent(MainActivity.this,SecondActivity.class);

intent.putExtra("text",getResources().getString(R.string.cinema));
                startActivity(intent);
            }
        });


    }
}
```

Activtiy_second.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="match_parent"
    android:layout_height="match_parent"
    android:gravity="center"
    tools:context=".SecondActivity">

    <TextView
        android:id="@+id/text"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"/>



</LinearLayout>
```

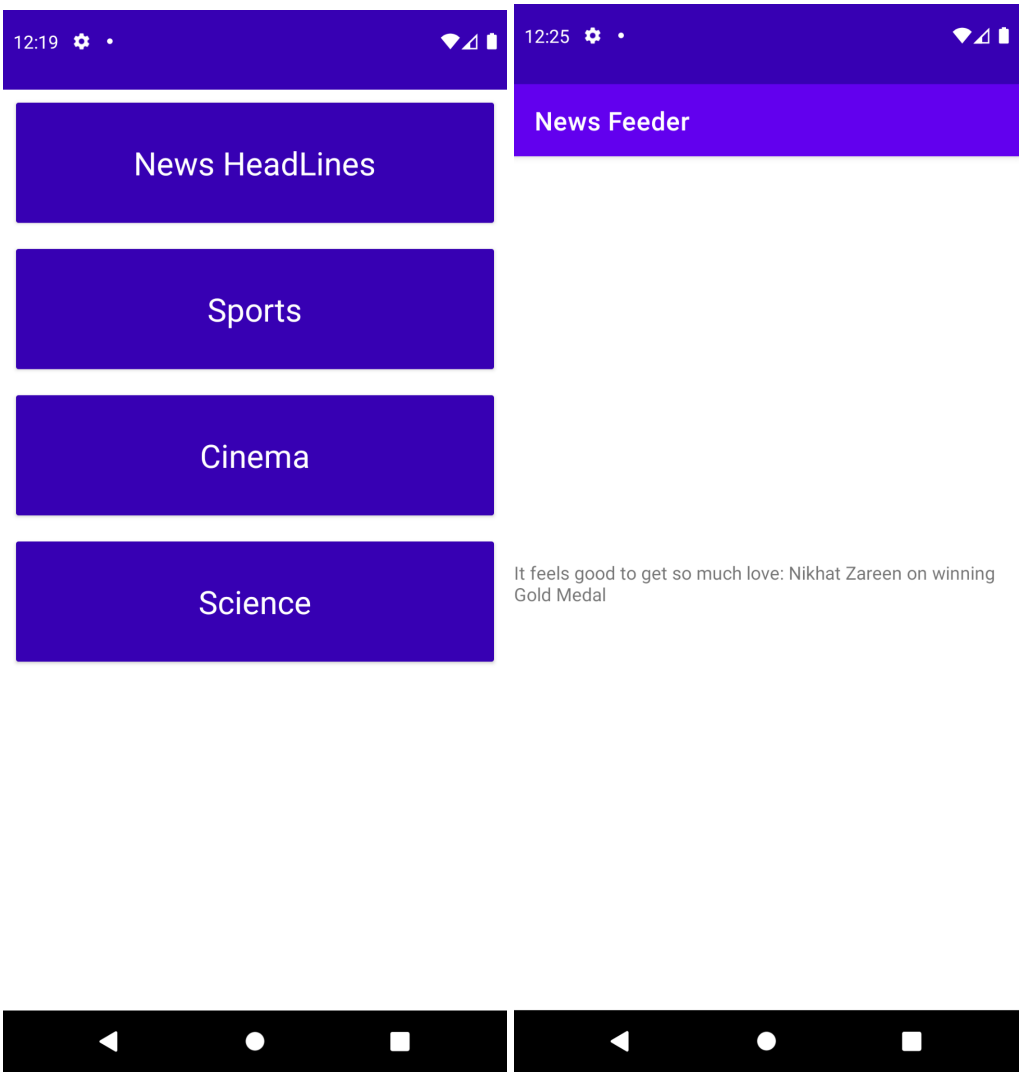
SecondActivity.java

```
package com.madlab.newsfeed;


import androidx.appcompat.app.AppCompatActivity;

import android.content.Intent;
import android.os.Bundle;
import android.widget.TextView;

import org.w3c.dom.Text;

public class SecondActivity extends AppCompatActivity {

   TextView textView;
   @Override
   protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_second);
        Intent intent = getIntent();
        textView = findViewById(R.id.text);
        textView.setText(intent.getExtras().getString("text"));
   }
}
```

Strings.xml

```
<resources>
   <string name="app_name">News Feeder</string>
    <string name="news">It feels good to get so much love: Nikhat Zareen on winning Gold Medal</string>
       <string name="cinema">Thor: Love And Thunder Trailer - Chris Hemsworth-Natalie Portman Double Whammy Vs Christian Bale</string>
    <string name="science">NASA\'s diffractive solar sailing project could take science to new heights</string>
   <string name="sports">IPL 2022, GT vs RR Live Score Updates: Jos Buttler Scores 89 To Set 189-Run Target For GT | Cricket...</string>

</resources>
```

Output


12:19
News HeadLines
Sports
Cinema
Science
12:25
News Feeder
It feels good to get so much love: Nikhat Zareen on winning Gold Medal