1. DataBase Connectivity

Activity_main.xml

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

    <EditText
        android:layout_width="match_parent"
        android:layout_height="match_parent"
        android:id="@+id/e"/>
</LinearLayout>
```

MainActivity.java

```java
package com.example.database;

import ...

public class MainActivity extends AppCompatActivity {
EditText text;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        DemoDatabase db=new DemoDatabase( ct: this);
        SQLiteDatabase sqldb=db.getReadableDatabase();
        ContentValues values=new ContentValues();
        values.put("price",80);
        sqldb.update( table: "products",values, whereClause: "id=?",new String[]{"1"});
        Cursor c=sqldb.rawQuery( sql: "select * from products",new String[]{});
        if (c!=null){
            c.moveToFirst();
        }
        StringBuilder builder=new StringBuilder();

        do {
            int id=c.getInt( columnIndex: 0);
            String name=c.getString( columnIndex: 1);
            String desc=c.getString( columnIndex: 2);
            Double price=c.getDouble( columnIndex: 3);
            builder.append("ID:"+id+"\n NAME:"+name+"\n DESCRIPTION:"+desc+"\n PRICE:"+price+"\n");
        }while (c.moveToNext());
        text=findViewById(R.id.e);
        text.setText(builder.toString());



    }
}
```

DemoJob.java

```java
package com.example.database;

import ...

public class DemoDatabase extends SQLiteOpenHelper {
    static String dbname="mydb";
    static int version=1;
    public DemoDatabase(Context ct) { super(ct,dbname, factory: null,version); }
    @Override
    public void onCreate(SQLiteDatabase db) {
        String sql="Create table products(id integer Primary key autoincrement,name text,description text,price real)";
        db.execSQL(sql);
        insertData( name: "bread", description: "Brown bread", price: 40.0,db);
        insertData( name: "jam", description: "mixed fruit", price: 65.0,db);

    }

    public void insertData(String name,String description,double price,SQLiteDatabase db){
        ContentValues values=new ContentValues();
        values.put("name",name);
        values.put("description",description);
        values.put("price",price);
        db.insert( table: "products", nullColumnHack: null,values);
    }
    @Override
    public void onUpgrade(SQLiteDatabase db, int oldVersion, int newVersion) {

    }
}
```

OUTPUT:-

2. Animation

Main_activity.xml

```xml
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout android:orientation="vertical" 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">
<Button android:onClick="show"
    android:layout_width="match_parent"
    android:layout_height="0dp"
    android:layout_weight="1"
    android:text="Animation Start"
    android:textSize="30dp"
    android:background="@drawable/button"/>

    <ImageView android:id="@+id/i1"
        android:layout_width="match_parent"
        android:layout_height="0dp"
        android:layout_weight="3"
        />
    <TextView android:id="@+id/t1"
        android:layout_width="match_parent"
        android:layout_height="0dp"
        android:layout_weight="1"
        android:textSize="30dp"
        android:background="@drawable/shapetext"/>


</LinearLayout>
```

Mainactivity.java

```java
public class MainActivity extends AppCompatActivity {
ImageView i;
TextView t;
AnimationDrawable draw;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);

        i=findViewById(R.id.i1);
        t=findViewById(R.id.t1);
        i.setBackgroundResource(R.drawable.animator);
        draw=(AnimationDrawable)i.getBackground();


    }
    public void show(View v){
        draw.start();
        t.setText("Animation started");

    }
```

Animator.xml

```xml
<?xml version="1.0" encoding="utf-8"?>
<animation-list xmlns:android="http://schemas.android.com/apk/res/android">
<item
    android:drawable="@drawable/ic_battery_20_black_24dp"
    android:duration="400"/>
    <item
        android:drawable="@drawable/ic_battery_charging_30_black_24dp"
        android:duration="400"/>
    <item
        android:drawable="@drawable/ic_battery_charging_50_black_24dp"
        android:duration="400"/>
    <item
        android:drawable="@drawable/ic_battery_charging_60_black_24dp"
        android:duration="400"/>
    <item
        android:drawable="@drawable/ic_battery_charging_80_black_24dp"
        android:duration="400"/>
    <item
        android:drawable="@drawable/ic_battery_charging_90_black_24dp"
        android:duration="400"/>

    <item
        android:drawable="@drawable/ic_battery_charging_full_black_24dp"
        android:duration="400"/>
</animation-list>
```

Button.xml

```xml
<?xml version="1.0" encoding="utf-8"?>
<selector xmlns:android="http://schemas.android.com/apk/res/android">
<item android:state_focused="true"
    android:state_enabled="true"
    android:drawable="@drawable/shape"/>
    <item
        android:state_enabled="true"
        android:state_pressed="true"
        android:drawable="@color/colorPrimary"/>
</selector>
```

Shape.xml

```xml
<?xml version="1.0" encoding="utf-8"?>
<shape xmlns:android="http://schemas.android.com/apk/res/android"
    android:shape="rectangle">
    <corners android:radius="4dp"/>
    <stroke android:width="4dp"
        android:color="#C1E1A6"/>
    <padding android:left="20dp"
        android:right="20dp"
        android:bottom="20dp"
        android:top="20dp"/>

</shape>
```

shapeText.xml

```xml
<?xml version="1.0" encoding="utf-8"?>
<shape xmlns:android="http://schemas.android.com/apk/res/android"
    android:shape="oval" >
    <solid android:color="@color/colorAccent"/>
    <padding android:left="60dp"
        android:top="30dp"></padding>
    <stroke android:width="5dp" android:color="@color/colorPrimary" />
</shape>
```

OUTPUT:-

3. RecylclerView

Activity_Main.xml

```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="wrap_content"
    tools:context=".MainActivity">
    <android.support.v7.widget.RecyclerView
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:id="@+id/r"
        android:scrollbars="vertical">

    </android.support.v7.widget.RecyclerView>


</LinearLayout>
```

MainActivity.java

```java
package com.example.recyclerview;

import ...

public class MainActivity extends AppCompatActivity {

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        RecyclerView rv=findViewById(R.id.r);
        rv.setLayoutManager(new LinearLayoutManager( context: this));
        int[]img={R.drawable.batman,R.drawable.ironman,R.drawable.hulk,R.drawable.spiderman,R.drawable.thor};
        String t[]={"Hi i am Batman","Hi i am Ironman","Hi i am Hulk","Hi i am Spiderman","Hi i am Thor"};
        rv.setAdapter(new cardadapter(t,img, context: this));


    }
}
```

Cardadapter.java

```java
import com.example.recyclerview.R;

public class cardadapter extends RecyclerView.Adapter<cardadapter.cardholder> {
    String[]text;
    int[]imgid;
    Context context;
    public cardadapter(String[]text,int[]imgid,Context context){
        this.text=text;
        this.imgid=imgid;
    }

    public class cardholder extends RecyclerView.ViewHolder{
        ImageView img;
        TextView t;
        CardView cv;
        public cardholder(View v){
            super(v);
            img=v.findViewById(R.id.img1);
            t=v.findViewById(R.id.t1);
            cv=v.findViewById(R.id.card1);
        }
    }

    @Override
    public cardholder onCreateViewHolder(@NonNull ViewGroup viewGroup, int i) {
        View v= LayoutInflater.from(viewGroup.getContext()).inflate(R.layout.cardview,viewGroup, attachToRoot: false);
        cardholder c=new cardholder(v);
        context=viewGroup.getContext();
        return (cardholder)c;
    }

    @Override
    public void onBindViewHolder(@NonNull final cardholder cardholder, int i) {
        cardholder.t.setText(text[i]);
        cardholder.img.setImageResource(imgid[i]);
        cardholder.t.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {

                Toast.makeText(context,cardholder.t.getText(),Toast.LENGTH_LONG).show();
            }
        });
    }

    @Override
    public int getItemCount() { return text.length; }

}
```
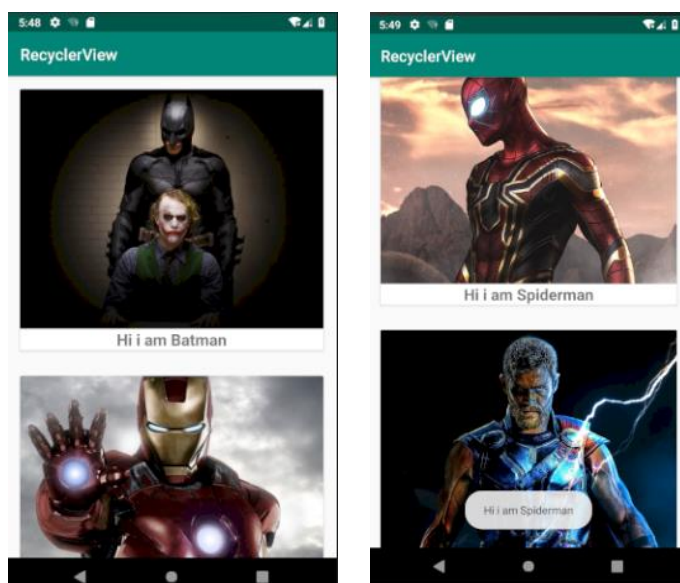
Cardview.xml

```xml
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout
    xmlns:android="http://schemas.android.com/apk/res/android" android:layout_width="match_parent"
    android:layout_height="wrap_content"
    >
    <android.support.v7.widget.CardView
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_margin="16dp"
        android:id="@+id/card1">
        <LinearLayout
            android:orientation="vertical"
            android:layout_width="match_parent"
            android:layout_height="wrap_content">
            <ImageView
                android:layout_width="match_parent"
                android:layout_height="300dp"
                android:scaleType="centerCrop"
                android:id="@+id/img1"/>
            <TextView android:id="@+id/t1"
                android:layout_width="match_parent"
                android:layout_height="wrap_content"
                android:textSize="20dp"
                android:textAlignment="center"
                android:textStyle="bold"/>
        </LinearLayout>

    </android.support.v7.widget.CardView>

</RelativeLayout>
```

Changes in Gradel file

```
implementation 'com.android.support:recyclerview-v7:28.0.0'
implementation 'com.android.support:cardview-v7:28.0.0'
```

OUTPUT:-

4. Example of Implicit Intent

Activity_main.xml

```xml
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout android:orientation="vertical" 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">
    <LinearLayout android:background="@drawable/shapeforlayout"
        android:layout_width="match_parent"
        android:layout_height="0dp"
        android:layout_weight="1"
        android:orientation="vertical">
<EditText
    android:layout_width="match_parent"
    android:layout_height="0dp"
    android:layout_weight="1"
    android:hint="Enter a website url"
    android:id="@+id/t1"/>

    <Button
        android:layout_width="match_parent"
        android:layout_height="0dp"
        android:layout_weight="1"
        android:text="Search"
        android:textSize="20dp"
        android:onClick="clickforwebsite"/>
</LinearLayout>
    <LinearLayout android:background="@drawable/shapeforlayout"
        android:layout_width="match_parent"
        android:layout_height="0dp"
        android:layout_weight="1"
        android:orientation="vertical">
<Button
    android:layout_width="match_parent"
    android:layout_height="0dp"
    android:layout_weight="1"
    android:onClick="click"
    android:text="Click To View Contacts"
```

```xml
                    android:textAlignment="center"
                    android:textSize="20dp"/>
                </LinearLayout>
                <LinearLayout android:background="@drawable/shapeforlayout"
                    android:layout_width="match_parent"
                    android:layout_height="0dp"
                    android:layout_weight="1"
                    android:orientation="vertical">
                <EditText
                    android:layout_width="match_parent"
                    android:layout_height="0dp"
                    android:layout_weight="1"
                    android:hint="Enter phone no"
                    android:id="@+id/e2"/>
                <Button
                    android:layout_width="match_parent"
                    android:layout_height="0dp"
                    android:layout_weight="1"
                    android:text="Click To Dial"

                    android:onClick="clickfordial"
                    android:textSize="20dp"/>
                </LinearLayout>
                <LinearLayout android:background="@drawable/shapeforlayout"
                    android:layout_width="match_parent"
                    android:layout_height="0dp"
                    android:layout_weight="1"
                    android:orientation="vertical">
                <EditText
                    android:layout_width="match_parent"
                    android:layout_height="0dp"
                    android:layout_weight="1"
                    android:hint="Enter location"
                    android:id="@+id/e3"/>
                <Button
                    android:layout_width="match_parent"
                    android:layout_height="0dp"
                    android:layout_weight="1"
                    android:text="Click To Locate"

                    android:onClick="clickforlocate"
                    android:textSize="20dp"/>
                </LinearLayout>
</LinearLayout>
```

MainActivity.java

```java
package com.example.intent;

import ...

public class MainActivity extends AppCompatActivity {
EditText e1;
EditText e2;
    EditText e3;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        e1=findViewById(R.id.t1);
        e2=findViewById(R.id.e2);
        e3=findViewById(R.id.e3);
    }
    public void clickforwebsite(View v){
        String s=e1.getText().toString();
        Intent i=new Intent(Intent.ACTION_VIEW, Uri.parse(s));
        startActivity(i);
    }

    public void click(View v){
        Intent i=new Intent(Intent.ACTION_PICK, ContactsContract.Contacts.CONTENT_URI);
        startActivity(i);
    }
    public  void clickfordial(View v){
        String s1=e2.getText().toString();
        Intent i=new Intent(Intent.ACTION_DIAL,Uri.parse("tel:"+s1));
        startActivity(i);
    }
    public void clickforlocate(View v){
        String s2=e3.getText().toString();
        Intent i=new Intent(Intent.ACTION_VIEW,Uri.parse("geo:0,0?q=("+s2+")"));
        startActivity(i);
    }
}
```
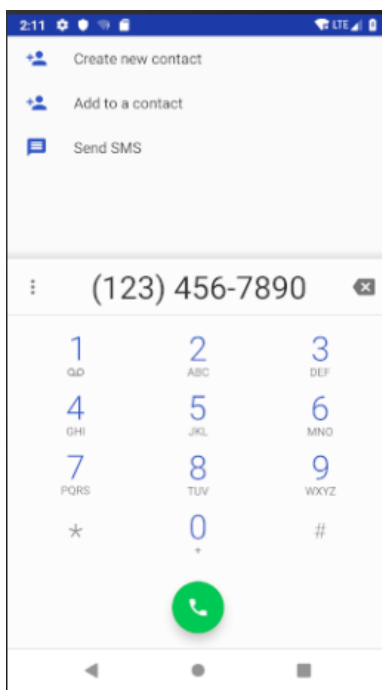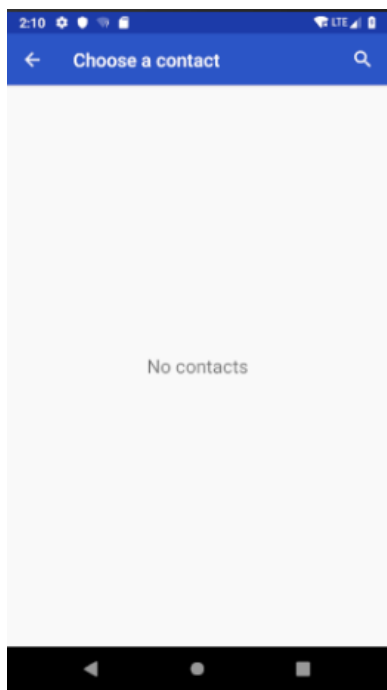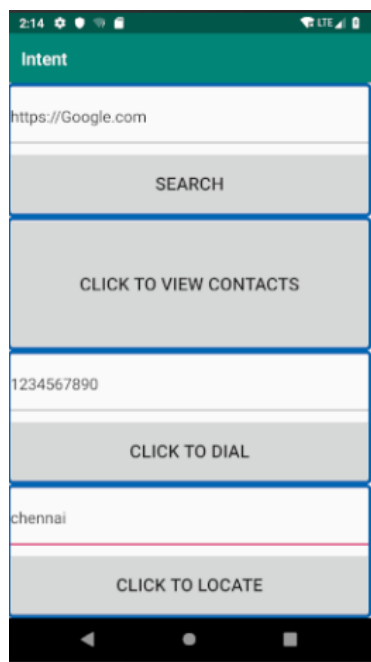
Androidmanifest.xml

```xml
<uses-permission android:name="android.permission.INTERNET"/>
```

OUTPUT:-
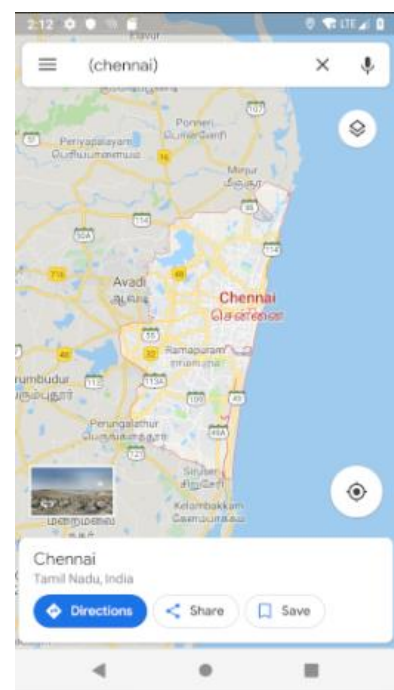
5. 2-Way Intent

Activity_main.xml

```xml
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout android:orientation="vertical" 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:id="@+id/t1"
        android:layout_width="match_parent"
        android:layout_height="0dp"
        android:layout_weight="7"
        android:text="messsage display here"
        android:textSize="24sp" />
    <EditText
        android:id="@+id/editText"
        android:layout_width="match_parent"
        android:layout_height="0dp"
        android:layout_weight="1"
        android:hint="type text here"
        android:inputType="textPersonName" />
    <LinearLayout
        android:orientation="horizontal"
        android:layout_width="match_parent"
        android:layout_height="0dp"
        android:layout_weight="1">

        <Button
            android:id="@+id/button"
            android:layout_width="0dp"
            android:layout_height="wrap_content"
            android:onClick="forStartConversion"
            android:layout_weight="1"
            android:text="Start (One Way)" />

        <Button
            android:id="@+id/button3"
            android:layout_width="0dp"
            android:layout_height="wrap_content"
            android:layout_weight="1"
            android:onClick="forreply"
            android:text="Start (Two Way)"/>

    </LinearLayout>

</LinearLayout>
```

MainActivity.java

```java
package com.example.mgm.myapplication05;

import ...

public class MainActivity extends AppCompatActivity {
    EditText e;
    TextView t;

    public static String message ="";
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        e = findViewById(R.id.editText);
        t = findViewById(R.id.t1);
    }
    public void forStartConversion(View v) {
        Intent i = new Intent( packageContext: this, Activity2.class);
        i.putExtra(message, e.getText().toString());
        startActivity(i);


    }
    public void forreply(View v) {

        Intent i = new Intent( packageContext: this, Activity2.class);
        i.putExtra(message, e.getText().toString());
        startActivityForResult(i,  requestCode: 1);


    }

        public void onActivityResult ( int requestCode, int responseCode, Intent data){
            super.onActivityResult(requestCode, responseCode, data);
            Intent i2=getIntent();
            if (requestCode == 1) {

                if (responseCode == RESULT_OK) {
                    String reply = data.getStringExtra(Activity2.Reply);
                    t.setVisibility(View.VISIBLE);
                    t.setText(reply);
                }
            }
        }
    }
```

Activity_2.xml

```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"
    tools:context=".Activity2"
    android:orientation="vertical">
<TextView
    android:layout_width="match_parent"
    android:layout_height="0dp"
    android:layout_weight="7"
    android:textSize="24dp"
    android:text="Message Displays here"
    android:id="@+id/t2"/>
    <EditText
        android:layout_width="match_parent"
        android:layout_height="0dp"
        android:layout_weight="1"
        android:inputType="textPersonName"
        android:hint="type to reply"
        android:id="@+id/editText"/>
    <Button
        android:layout_width="match_parent"
        android:layout_height="0dp"
        android:layout_weight="1"
        android:onClick="forreply"
        android:text="Reply"
        android:id="@+id/button"/>
</LinearLayout>
```

Activity2.java

```java
package com.example.mgm.myapplication05;

import ...

public class Activity2 extends AppCompatActivity {
EditText e;
TextView tt;
public static String Reply="reply";
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_2);
        e=findViewById(R.id.editText);
        tt=findViewById(R.id.t2);
        Intent irr=getIntent();
        String message= irr.getStringExtra(MainActivity.message);
        tt.setText(message);
    }
    public void forreply(View v){
        Intent i=new Intent( packageContext: this,MainActivity.class);
        String r=e.getText().toString();

        i.putExtra(Reply,r);
      setResult(RESULT_OK,i);
       finish();

    }
}
```

OUTPUT:-
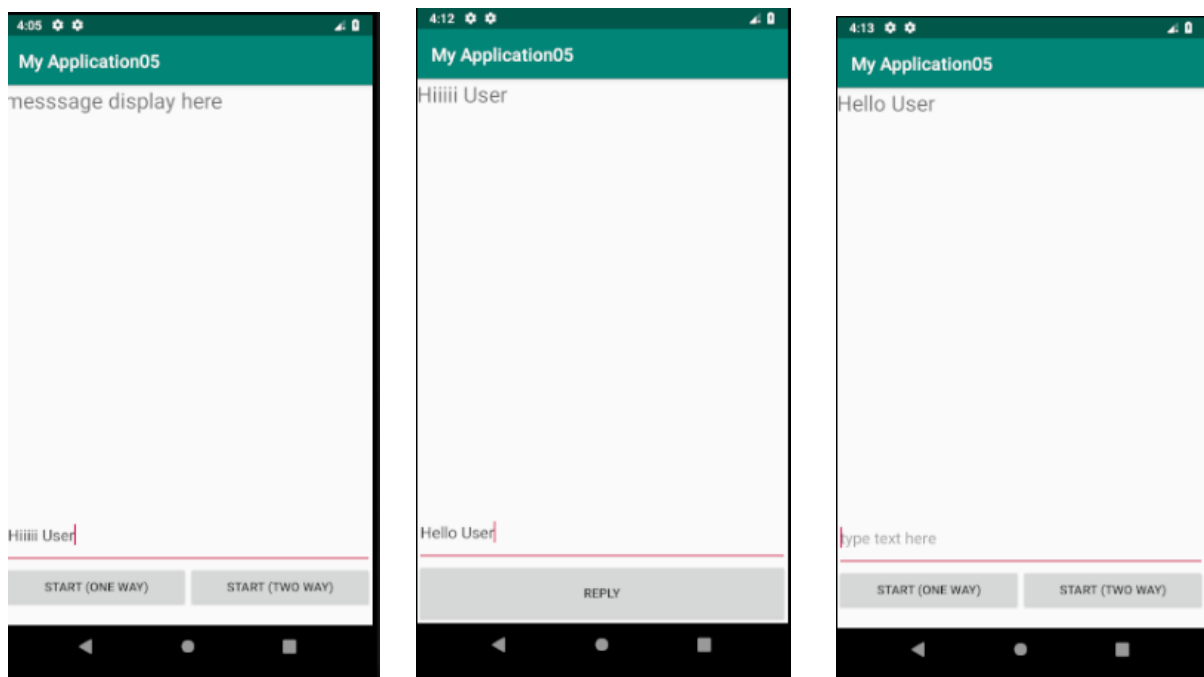
- Click on start (Two Way) to start conversion

6. Broadcast Receiver

Activity_main.xml

```xml
<?xml version="1.0" encoding="utf-8"?>
<android.support.constraint.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="Hello World!"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintLeft_toLeftOf="parent"
        app:layout_constraintRight_toRightOf="parent"
        app:layout_constraintTop_toTopOf="parent" />

</android.support.constraint.ConstraintLayout>
```

MainActivity.java

```java
package com.example.mgm.broadcastreceiver;

import ...

public class MainActivity extends AppCompatActivity {

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

    @Override
    protected void onStart() {
        IntentFilter intentFilter=new IntentFilter(Intent.ACTION_AIRPLANE_MODE_CHANGED);
        d=new demoBroadcst();
        super.onStart();
        registerReceiver(d,intentFilter);
    }

    @Override
    protected void onStop() {

        super.onStop();
        unregisterReceiver(d);

    }
}
```

AndroidManifest.xml

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

    <application
        android:allowBackup="true"
        android:icon="@mipmap/ic_launcher"
        android:label="BroadcastReceiver"
        android:roundIcon="@mipmap/ic_launcher_round"
        android:supportsRtl="true"
        android:theme="@style/AppTheme">
        <receiver android:name=".demoBroadcst"></receiver>
        <activity android:name=".MainActivity">

            <intent-filter>
                <action android:name="android.intent.action.AIROPLANE_MODE"></action>
                <action android:name="android.intent.action.MAIN" />
                <action android:name="android.intent.action.BOOT_COMPLETED" />
                <action android:name="android.net.conn.CONNECTIVITY_CHANGE" />
                <category android:name="android.intent.category.LAUNCHER" />
            </intent-filter>
        </activity>
    </application>
    <uses-permission android:name="android.permission.RECEIVE_BOOT_COMPLETED"></uses-permission>
</manifest>
```

demoBroadcast.java

```java
package com.example.mgm.broadcastreceiver;

import android.content.BroadcastReceiver;
import android.content.Context;
import android.content.Intent;
import android.net.ConnectivityManager;
import android.widget.Toast;

public class demoBroadcst extends BroadcastReceiver {
    @Override
    public void onReceive(Context context, Intent intent) {
        if(Intent.ACTION_BOOT_COMPLETED.equals(intent.getAction())){
            Toast.makeText(context, text: "BOOT COMPLETED",Toast.LENGTH_SHORT).show();
        }
        if(ConnectivityManager.CONNECTIVITY_ACTION.equals(intent.getAction())){
            Toast.makeText(context, text: " BOOT CONNETED",Toast.LENGTH_SHORT).show();
        }

        if(Intent.ACTION_AIRPLANE_MODE_CHANGED.equals(intent.getAction())){
            Toast.makeText(context, text: "AIROPLANE MODE RECEIVED",Toast.LENGTH_SHORT).show();
        }

    }
}
```

OUTPUT:-

7. Snackbar

MainActivity.java

```java
package com.example.usingsnackbar;

import ...

public class MainActivity extends AppCompatActivity {

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

        Button button = (Button) findViewById(R.id.callbackButton);

        button.setOnClickListener((v) -> {
                // Button was clicked/tapped
                View view = findViewById(R.id.main_layout_id);
                String message = "Snackbar message";
                int duration = Snackbar.LENGTH_SHORT;

                showSnackbar(view, message, duration);
        });
    }


    public void showSnackbar(View view, String message, int duration)
    {
        // Create snackbar
        final Snackbar snackbar = Snackbar.make(view, message, duration);

        // Set an action on it, and a handler

        snackbar.setAction( text: "DISMISS", (v) -> { snackbar.dismiss(); });

        snackbar.show();
    }
}
```

Activity_main.xml
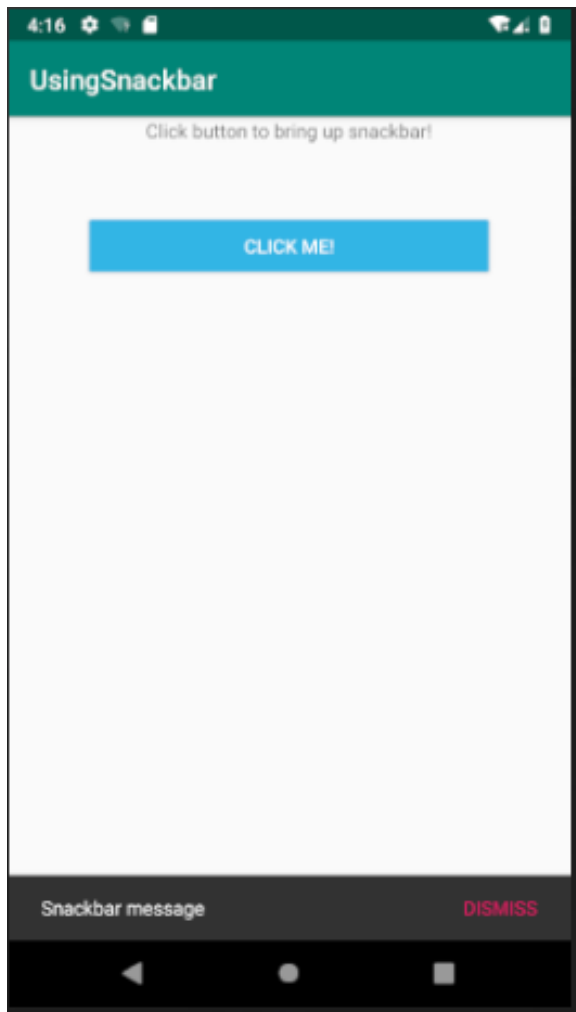
```xml
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:id="@+id/main_layout_id"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:orientation="vertical"
    tools:context=".MainActivity">

        <TextView
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:layout_gravity="center"
            android:gravity="center_horizontal"
            android:text="Click button to bring up snackbar!" />


        <Button
            android:id="@+id/callbackButton"
            android:layout_width="300dp"
            android:layout_height="50dp"
            android:layout_gravity="center_horizontal"
            android:layout_margin="50dp"
            android:backgroundTint="@android:color/holo_blue_light"
            android:text="Click Me!"
            android:textColor="@android:color/white" />



</LinearLayout>
```

OUTPUT:-

8. Tab Layout

Activity_main.xml

```xml
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:context=".MainActivity">
    <android.support.v7.widget.Toolbar
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:id="@+id/toolbar"
        android:background="?attr/colorAccent"
        android:minHeight="?android:attr/actionBarSize"
        android:theme="@style/Theme.AppCompat.Light.DarkActionBar"
        />

    <android.support.design.widget.TabLayout
        android:id="@+id/tablay"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:background="?attr/colorAccent"
        android:minHeight="?android:attr/actionBarSize"
        android:theme="@style/Theme.AppCompat.Light.DarkActionBar"
    />
    <android.support.v4.view.ViewPager
        android:id="@+id/viewPager"
        android:layout_width="wrap_content"
        android:layout_height="fill_parent"
        android:layout_below="@+id/tablay"></android.support.v4.view.ViewPager>
</RelativeLayout>
```

Styles.xml

```xml
<resources>

    <!-- Base application theme. -->
    <style name="AppTheme" parent="Theme.AppCompat.Light.DarkActionBar">
        <!-- Customize your theme here. -->
        <item name="colorPrimary">@color/colorPrimary</item>
        <item name="colorPrimaryDark">@color/colorPrimaryDark</item>
        <item name="colorAccent">@color/colorAccent</item>
        <item name="windowActionBar">false</item>
        <item name="windowNoTitle">true</item>
    </style>

</resources>
```

Fragment_java.xml

```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=".java1">

    <!-- TODO: Update blank fragment layout -->
    <TextView
        android:layout_width="match_parent"
        android:layout_height="match_parent"
        android:text="Welcome To Java"
        android:textColor="@color/colorPrimaryDark"
        android:textSize="36dp"
        android:gravity="center"
        />

</RelativeLayout>
```

Fragment_android.xml

```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=".android">

    <!-- TODO: Update blank fragment layout -->
    <TextView
        android:layout_width="match_parent"
        android:layout_height="match_parent"
        android:text="Welcome To Android"
        android:textColor="@color/colorAccent"
        android:textSize="30dp"
        android:gravity="center"/>

</RelativeLayout>
```

Android.java

```java
package com.example.mgm.tab;

import ...

/**
 * A simple {@link Fragment} subclass.
 */
public class android extends Fragment {

    public android() {
        // Required empty public constructor
    }

    @Override
    public View onCreateView(LayoutInflater inflater, ViewGroup container,
                             Bundle savedInstanceState) {
        // Inflate the layout for this fragment
        return inflater.inflate(R.layout.fragment_android, container, attachToRoot: false);
    }
}
```

Java1.java

```java
package com.example.mgm.tab;

import ...

/**
 * A simple {@link Fragment} subclass.
 */
public class java1 extends Fragment {


    public java1() {
        // Required empty public constructor
    }


    @Override
    public View onCreateView(LayoutInflater inflater, ViewGroup container,
                             Bundle savedInstanceState) {
        // Inflate the layout for this fragment
        return inflater.inflate(R.layout.fragment_java1, container,  attachToRoot: false);
    }

}
```

MainActivity.java

```java
package com.example.mgm.tab;

import android.support.design.widget.TabLayout;
import android.support.v4.view.ViewPager;
import android.support.v7.app.AppCompatActivity;
import android.os.Bundle;
import android.support.v7.widget.Toolbar;
import android.widget.TableLayout;

public class MainActivity extends AppCompatActivity {

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        Toolbar toolbar=findViewById(R.id.toolbar);
        setSupportActionBar(toolbar);
        TabLayout tl=findViewById(R.id.tablay);
        tl.addTab(tl.newTab().setText("JAVA"));
        tl.addTab(tl.newTab().setText("ANDROID"));
        tl.setTabGravity(TabLayout.GRAVITY_FILL);
        final ViewPager vp=findViewById(R.id.viewPager);
        pagerAdapter adp=new pagerAdapter(getSupportFragmentManager(),tl.getTabCount());
        vp.setAdapter(adp);
        vp.addOnPageChangeListener(new TabLayout.TabLayoutOnPageChangeListener(tl));
        tl.addOnTabSelectedListener(new TabLayout.OnTabSelectedListener() {

            @Override
            public void onTabSelected(TabLayout.Tab tab) {
                vp.setCurrentItem(tab.getPosition());

            }

            @Override
            public void onTabUnselected(TabLayout.Tab tab) {

            }

            @Override
            public void onTabReselected(TabLayout.Tab tab) {

            }
        });



    }
}
```

PageAdapter.java

```java
package com.example.mgm.tab;

import android.support.v4.app.Fragment;
import android.support.v4.app.FragmentManager;
import android.support.v4.app.FragmentStatePagerAdapter;

import com.example.mgm.tab.android;

class pagerAdapter extends FragmentStatePagerAdapter {
    int numofTabs;
    public pagerAdapter(FragmentManager fm, int nTabs){
        super(fm);
    numofTabs=nTabs;
    }


    @Override
    public Fragment getItem(int  position) {
        switch (position){
            case 0:
                return new javal();
            case 1:
                return new android();
            default:
                return null;


        }


    }

    @Override
    public int getCount() { return numofTabs; }
}
```
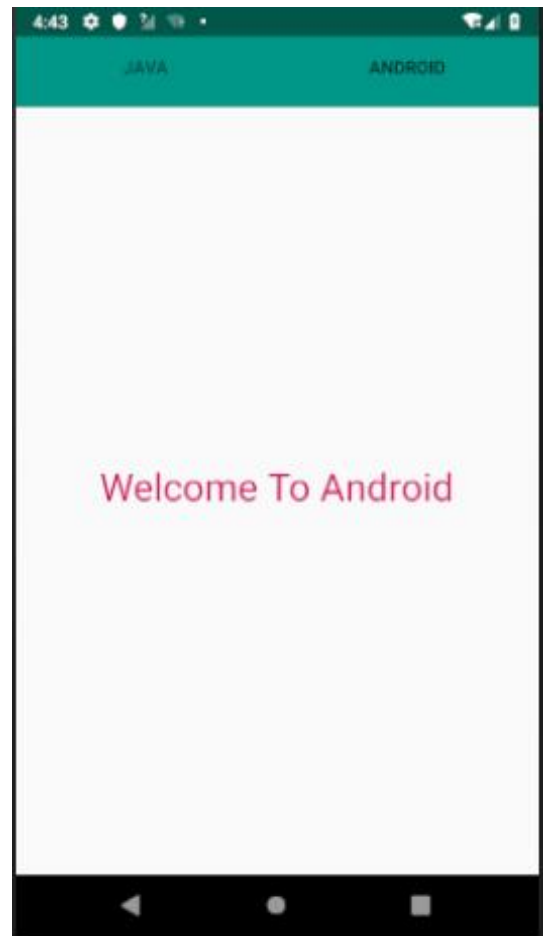
OUTPUT:-

9. DemoOnListeners

Activity_main.xml

```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"
    tools:context=".MainActivity"
    android:orientation="vertical">


    <Spinner android:layout_weight="0.8"
        android:id="@+id/spinner"
        android:layout_width="match_parent"
        android:layout_height="0dp" />

    <ListView android:layout_weight="1"

        android:id="@+id/listv1"
        android:layout_width="wrap_content"
        android:layout_height="0dp" />


    <RadioGroup

        android:layout_weight="0.5"
        android:id="@+id/rgb"
        android:layout_width="wrap_content"
        android:layout_height="0dp"
        android:orientation="horizontal"
        >
```

```xml
        <RadioButton
            android:textSize="20dp"
            android:id="@+id/rb1"
            android:onClick="rclick"
            android:layout_width="218dp"
            android:layout_height="wrap_content"
            android:text="apple" />

        <RadioButton
            android:textSize="20dp"
            android:id="@+id/rb2"
            android:onClick="rclick"
            android:layout_width="186dp"
            android:layout_height="match_parent"
            android:text="banana" />
    </RadioGroup>
<LinearLayout android:orientation="horizontal"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_weight="0.1">
    <Switch
        android:layout_weight="1"
        android:id="@+id/switch1"
        android:layout_width="0dp"
        android:layout_height="wrap_content"
        android:text="Switch"
        android:textSize="20dp"/>

    <ProgressBar
        android:id="@+id/progressBar1"
        android:layout_weight="1"
        style="?android:attr/progressBarStyle"
        android:layout_width="0dp"
        android:layout_height="wrap_content" />
</LinearLayout>
    <LinearLayout
        android:layout_width="match_parent"
        android:layout_height="0dp"
        android:layout_weight="0.7"
        android:orientation="horizontal">
        <ToggleButton
            android:onClick="ontoggleclick"
            android:id="@+id/toggleButton"
            android:layout_width="0dp"
            android:layout_height="wrap_content"
            android:layout_weight="1"
            android:text="ToggleButton" />

        <TextView
            android:id="@+id/tx"
            android:layout_width="0dp"
            android:layout_height="wrap_content"
            android:layout_weight="1"
            android:textAlignment="center"
            android:textSize="30dp"
            />
    </LinearLayout>
</LinearLayout>
```

MainActivity.java

```java
import ...

public class MainActivity extends AppCompatActivity
        implements AdapterView.OnItemSelectedListener,
        CompoundButton.OnCheckedChangeListener {
Spinner spinner1;
ListView listView1;
RadioGroup rgb11;
Switch switch1;
ProgressBar pb1;
ToggleButton toggleButton11;
TextView t1;
    RadioButton rb;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        spinner1 = findViewById(R.id.spinner);
        listView1 = findViewById(R.id.Listv1);
        rgb11 = findViewById(R.id.rgb);
        switch1 = findViewById(R.id.switch1);

        pb1 = findViewById(R.id.progressBar1);
        pb1.setVisibility(View.INVISIBLE);
        toggleButton11 = findViewById(R.id.toggleButton);
        t1 = findViewById(R.id.tx);
        final List<String> l=new ArrayList<~>();
        l.add("orange");
        l.add("apple");
        l.add("mango");
        l.add("litchi");
```

```java
ArrayAdapter <String> adp=
        new ArrayAdapter( context: this,android.R.layout.simple_spinner_item,1);
adp.setDropDownViewResource(android.R.layout.simple_spinner_dropdown_item);
spinner1.setAdapter(adp);
spinner1.setOnItemSelectedListener(this);
String st[]={"oranges","apple","kiwi","litchi"};
final ArrayAdapter <String> adpl=
        new ArrayAdapter( context: this,android.R.layout.simple_list_item_1,st);
listView1.setAdapter(adpl);
switch1.setOnCheckedChangeListener(this);

listView1.setOnItemClickListener(new AdapterView.OnItemClickListener() {
    @Override
    public void onItemClick(AdapterView<?> parent, View view, int position, long id) {
        String fruit="s";
        if(position==0){
            fruit="orange";
        }
        else if(position==1){
            fruit ="apple";
        }
        else if(position==2){
            fruit="kiwi";
        }else if(position==3){
            fruit="litchi";
        }
        Toast.makeText(getApplication(), text: "you clicked  "+fruit,Toast.LENGTH_SHORT).show();
    }
});

    }
    public void rclick(View v){
        int rbid=rgb11.getCheckedRadioButtonId();
        rb=findViewById(rbid);
        Toast.makeText(getBaseContext(), text: "you clicked  "+rb.getText(),Toast.LENGTH_LONG).show();

    }
    @Override
    public void onItemSelected(AdapterView<?> parent, View view, int position, long id) {
        String item=parent.getItemAtPosition(position).toString();
        Toast.makeText(parent.getContext(), text: "YOU SELECTED  "+item,Toast.LENGTH_LONG).show();
    }

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

    }
public void  ontoggleclick(View view){
        if (toggleButton11.isChecked()){
            t1.setText("ON");

        }
        else{
            t1.setText("OFF");
        }
}
```
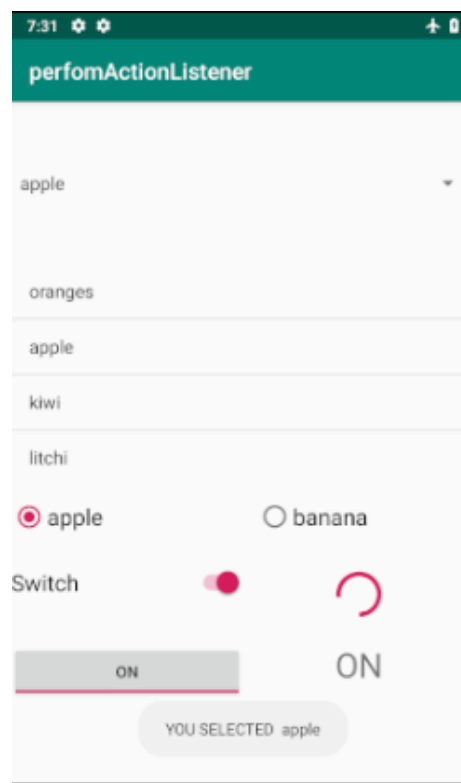
```
    @Override
    public void onCheckedChanged(CompoundButton buttonView, boolean isChecked) {
        if(isChecked){
    pb1.setVisibility(View.VISIBLE);
        }
        else {
            pb1.setVisibility(View.INVISIBLE);
        }
    }
}
```

OUTPUT:-

10. AsyncTask

Activity_main.xml

```xml
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout android:orientation="vertical" xmlns:android="http://
    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="match_parent"
        android:layout_height="wrap_content"
        android:text="Execute Async Task"
        android:textStyle="bold"
        android:textSize="40dp"
        android:textAlignment="center"
        />
    <Button
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:onClick="click"
        android:text="Execute"
        android:textSize="20dp"
        android:layout_marginLeft="130dp"
        android:layout_marginTop="45dp"/>

</LinearLayout>
```

MainActivity.java

```java
import ...

public class MainActivity extends AppCompatActivity {

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
    }
    class usingAsync extends AsyncTask<Void,Integer,String>{
        ProgressDialog pd;

        @Override
        protected String doInBackground(Void... voids) {
            try{
                for(int i=1; i<=11; i++) {
                    Thread.sleep( millis: 1000);
                    publishProgress(i);
                }
                return "Sucessfully executed";
            }catch (Exception e){
            return null;
        }
    }

}
```

```java
    @Override
    protected void onPreExecute() {
        pd=new ProgressDialog( context: MainActivity.this);
        pd.setTitle("New Loading");
        pd.setMessage("Please Wait...");
        pd.setMax(10);
        pd.setProgressStyle(ProgressDialog.STYLE_HORIZONTAL);
        pd.show();
    }

    @Override
    protected void onProgressUpdate(Integer... values) {
        int val= values[0];
        pd.setProgress(val);
    }

    @Override
    protected void onPostExecute(String s) {
        Toast.makeText( context: MainActivity.this,s,Toast.LENGTH_SHORT).show();
        pd.dismiss();
    }
}
public void click(View v){
    usingAsync u=new usingAsync();
    u.execute();
}
}
```
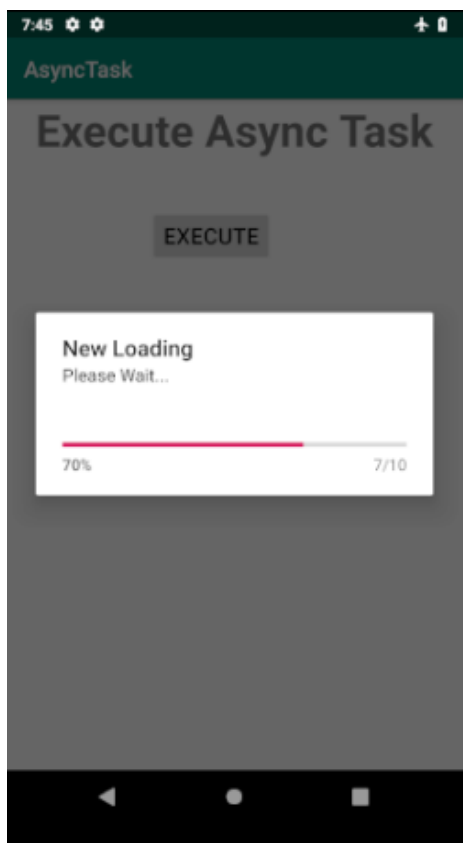
OUTPUT:-

11.MenuCode

Activity_main.xml

```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="vertical"
    tools:context=".MainActivity"
    android:layout_weight="2">

    <TextView
        android:layout_weight="1"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:text="Hold For Context" android:textAlignment="center"
        android:paddingTop="70dp"
        android:textSize="60dp"
        android:id="@+id/tv1"
        android:onClick="onclick"
        android:background="@color/colorAccent"></TextView>

    <TextView
        android:layout_weight="1"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:text="Click Me For Popup"
        android:textAlignment="center"
        android:paddingTop="70dp"
        android:textSize="60dp"
        android:id="@+id/tv2"
        android:onClick="pop"
        android:background="@color/colorPrimary"/>
</LinearLayout>
```

contextmenu.xml

```xml
<?xml version="1.0" encoding="utf-8"?>
<menu xmlns:android="http://schemas.android.com/apk/res/android">
<item android:title="lion" android:id="@+id/cm1"></item>
<item android:title="tiger" android:id="@+id/cm2"></item>
</menu>
```

Popupmenu.xml

```xml
<?xml version="1.0" encoding="utf-8"?>
<menu xmlns:android="http://schemas.android.com/apk/res/android">
<item android:title="apple" android:id="@+id/pm1"></item>
    <item android:title="mango" android:id="@+id/pm2"></item>
    <item android:title="banana" android:id="@+id/pm3"></item>

</menu>
```

optionmenu.xml

```xml
<?xml version="1.0" encoding="utf-8"?>
<menu xmlns:android="http://schemas.android.com/apk/res/android">
<item android:title="Lily"
    android:id="@+id/om1"></item>
    <item android:title="Rose" android:id="@+id/om2">

    </item>
    <item android:title="Sunflower" android:id="@+id/om3"></item>
    <item android:title="Daisy family" android:id="@+id/om4"></item>
</menu>
```

MainActivity.java

```java
public class MainActivity extends AppCompatActivity {

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

    public void onclick(View v){
        registerForContextMenu(v);
    }

    @Override
    public boolean onCreateOptionsMenu(Menu menu) {

        getMenuInflater().inflate(R.menu.optionmenu,menu);
        return true;
    }

    @Override
    public boolean onOptionsItemSelected(MenuItem item) {
        Toast.makeText( context: this, text: "You clicked"+item.getTitle(),Toast.LENGTH_SHORT).show();
 return super.onOptionsItemSelected(item);
        }

    @Override
    public void onCreateContextMenu(ContextMenu menu, View v, ContextMenu.ContextMenuInfo menuInfo) {
         getMenuInflater().inflate(R.menu.contextmenu, menu);
        super.onCreateContextMenu(menu, v, menuInfo);
    }
```

```
    @Override
    public boolean onContextItemSelected(MenuItem item) {
            Toast.makeText( context: this, text: "You clicked"+item.getTitle(),Toast.LENGTH_SHORT).show();
        return true;
    }

    public  void pop(View v) {
        final PopupMenu popupMenu = new PopupMenu( context: this, v);
        getMenuInflater().inflate(R.menu.popupmenu, popupMenu.getMenu());
        popupMenu.show();
        popupMenu.setOnMenuItemClickListener((item) → {
                Toast.makeText(getApplication(), text: "You clicked"+item.getTitle(),Toast.LENGTH_SHORT).show();
                return true;
        });
    }
}
```

OUTPUT:-
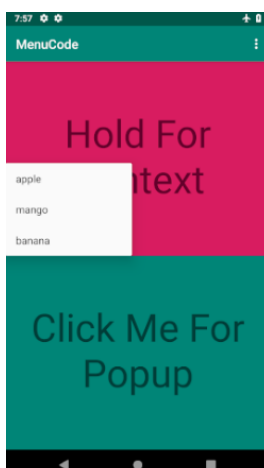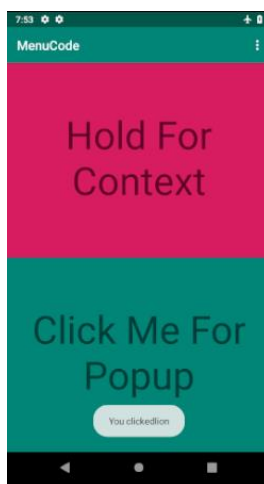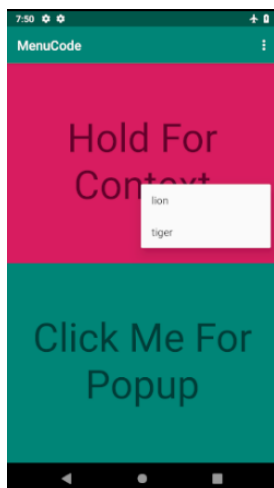
12.Job Scheduler

Activity_main.xml

```xml
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout android:orientation="vertical" 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">

    <ToggleButton
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:id="@+id/t"/>

</LinearLayout>
```

MainActivity.java

```java
package com.example.jobschedular;

import ...

public class MainActivity extends AppCompatActivity implements CompoundButton.OnCheckedChangeListener {
ToggleButton t;
JobScheduler sch;
JobInfo info;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
t=findViewById(R.id.t);
t.setOnCheckedChangeListener(this);
sch=(JobScheduler)getSystemService(JOB_SCHEDULER_SERVICE);
    }

    @Override
    public void onCheckedChanged(CompoundButton buttonView, boolean isChecked) {
        if (isChecked){
            ComponentName c=new ComponentName( pkg: this,DemoJob.class);
            info=new JobInfo.Builder( jobId: 1,c)
                    .setRequiresCharging(true)
                    .setRequiredNetworkType(JobInfo.NETWORK_TYPE_ANY)
                    .build();
            sch.schedule(info);
        }
    }
}
```

DemoJob.java

```java
package com.example.jobschedular;

import android.app.job.JobParameters;
import android.app.job.JobService;
import android.widget.Toast;

public class DemoJob extends JobService {
    @Override
    public boolean onStartJob(JobParameters params) {
        Toast.makeText( context: this, text: "currently job is running",Toast.LENGTH_SHORT).show();
        return false;
    }

    @Override
    public boolean onStopJob(JobParameters params) { return false; }
}
```

OUTPUT:-
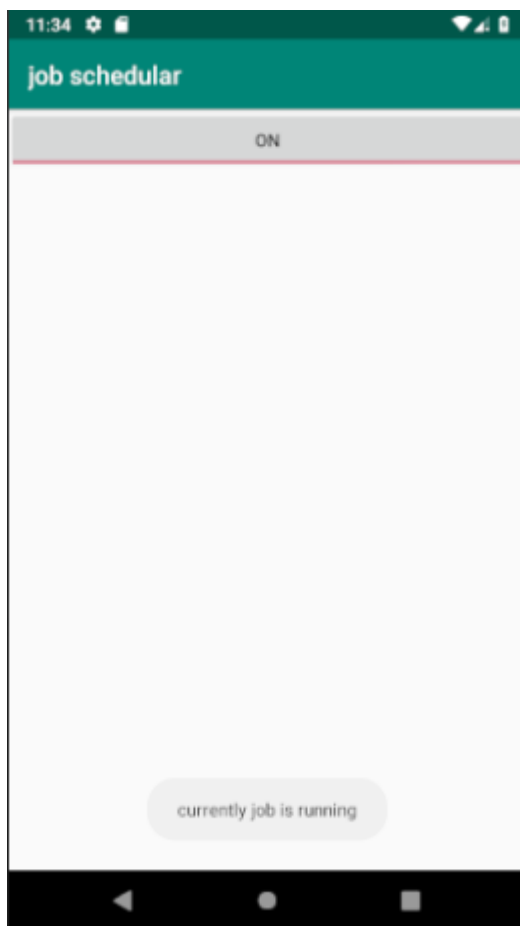
13.NotificationManager

Activity_Main.xml

```xml
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout android:orientation="vertical"
    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">

    <EditText
        android:layout_width="match_parent"
        android:layout_height="0dp"
        android:id="@+id/e1"
        android:layout_weight="1"/>
    <EditText
        android:layout_width="match_parent"
        android:layout_height="0dp"
        android:id="@+id/e2"
        android:layout_weight="1"/>

    <Button
        android:layout_width="match_parent"
        android:layout_height="0dp"
        android:id="@+id/b1"
        android:layout_weight="1"
        android:text="send1"
        android:onClick="sendOnChannel1"/>
    <Button
        android:layout_width="match_parent"
        android:layout_height="0dp"
        android:id="@+id/b2"
        android:layout_weight="1"
        android:text="send2"
        android:onClick="sendOnChannel2"
        />

</LinearLayout>
```

MainActivity.java

```java
package com.example.myapplicationnotification;

import ...

public class MainActivity extends AppCompatActivity {
NotificationManagerCompat nm;
EditText e1,e2;

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        nm=NotificationManagerCompat.from(this);
        e1=findViewById(R.id.e1);
        e2=findViewById(R.id.e2);
    }

 public  void sendOnChannel1(View v){
    String title=e1.getText().toString();
    String message=e2.getText().toString();
    Notification n=
     new NotificationCompat.Builder( context: this,channel_1_id).setSmallIcon(R.drawable.ic_launcher_background)
            .setContentTitle(title)
            .setContentText(message)
            .setPriority(NotificationCompat.PRIORITY_HIGH)
            .setCategory(NotificationCompat.CATEGORY_MESSAGE)
            .build();
    nm.notify( id: 1,n);
 }


    public  void sendOnChannel2(View v){
        String title=e1.getText().toString();
        String message=e2.getText().toString();
        Notification n=
         new NotificationCompat.Builder( context: this,channel_2_id).setSmallIcon(R.drawable.ic_launcher_background)
                .setContentTitle(title)
                .setContentText(message)
                .setPriority(NotificationCompat.PRIORITY_LOW)
                .setCategory(NotificationCompat.CATEGORY_MESSAGE)
                .build();
        nm.notify( id: 2,n);
    }
}
```

NoteApp.java

```java
package com.example.myapplicationnotification;

import ...

public class NoteApp extends Application {
    public static final String channel_1_id="channel1";
    public static final String channel_2_id="channel2";

    @Override
    public void onCreate() {
        super.onCreate();
        createNotificationsChannels();
    }

    private void createNotificationsChannels(){
        if (Build.VERSION.SDK_INT>=Build.VERSION_CODES.O){
            NotificationChannel channel1=
             new NotificationChannel(channel_1_id, name: "channel1", NotificationManager.IMPORTANCE_HIGH);
            channel1.setDescription("this is channel1");
            NotificationChannel channel2=
             new NotificationChannel(channel_2_id, name: "channel2",NotificationManager.IMPORTANCE_LOW);
            channel2.setDescription("this is channel2");
            NotificationManager manager=getSystemService(NotificationManager.class);
            manager.createNotificationChannel(channel1);
            manager.createNotificationChannel(channel2);
        }
    }
}
```
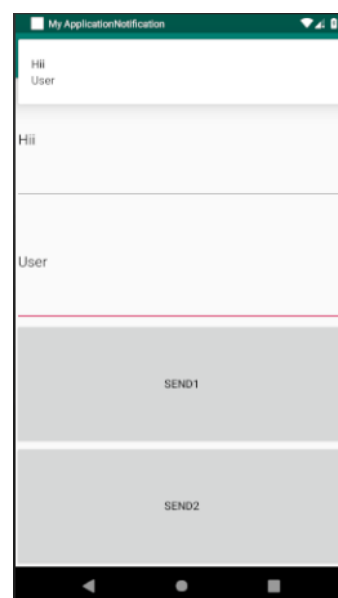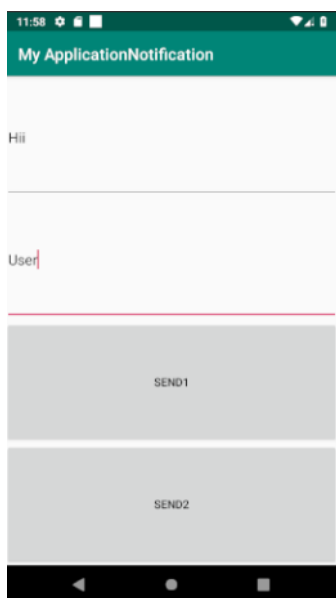
Manifest.xml

```
android:name=".NoteApp"
```

OUTPUT:-

14.Alaram Manager

Activity_Main.xml

```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="vertical"
    tools:context=".MainActivity"
    android:layout_weight="6">

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

    <Button
        android:id="@+id/button"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:text="Cancel"
        android:onClick="cancelAlarm"
        />

    <Button
        android:id="@+id/button2"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:text="setAlarm"
        android:onClick="setAlarm"
        />
</LinearLayout>
```

TimeFragment.java

```java
package com.example.myapplication;

import android.app.Dialog;
import android.app.TimePickerDialog;
import android.os.Bundle;
import android.support.annotation.NonNull;
import android.support.annotation.Nullable;
import android.support.v4.app.DialogFragment;
import android.text.format.DateFormat;

import java.util.Calendar;

public class TimeFragment extends DialogFragment {
    @NonNull
    @Override
    public Dialog onCreateDialog(@Nullable Bundle savedInstanceState) {


        Calendar c=Calendar.getInstance();
        int hour=c.get(Calendar.HOUR_OF_DAY);
        int minute=c.get(Calendar.MINUTE);

        return new TimePickerDialog(getActivity(),(TimePickerDialog.OnTimeSetListener)getActivity(),hour,minute, DateFormat.is24HourFormat(getActivity()));
    }
}
```

AlarmReceiver.java

```java
package com.example.myapplication;

import android.content.BroadcastReceiver;
import android.content.Context;
import android.content.Intent;
import android.widget.Toast;

public class AlarmaReceiver extends BroadcastReceiver {
    @Override
    public void onReceive(Context context, Intent intent) {
        Toast.makeText(context, "Alarm ringing.....",Toast.LENGTH_LONG).show();
    }
}
```

Manifest.xml

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

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

                <category android:name="android.intent.category.LAUNCHER" />
            </intent-filter>
        </activity>
        <receiver android:name=".AlarmaReceiver"></receiver>
    </application>

</manifest>
```

MainActivity.java

```java
package com.example.myapplication;

import ...

public class MainActivity extends AppCompatActivity implements TimePickerDialog.OnTimeSetListener {

    TextView t0;
    Button btn;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        t0=findViewById(R.id.textView);
    }

    public void setAlarm(View v){
        DialogFragment timePicker=new TimeFragment();
        timePicker.show(getSupportFragmentManager(), tag: "time picker");

    }

    @Override
    public void onTimeSet(TimePicker view, int hourOfDay, int minute) {

        Calendar c=Calendar.getInstance();
        c.set(Calendar.HOUR_OF_DAY,hourOfDay);
        c.set(Calendar.MINUTE,minute);
        c.set(Calendar.SECOND,0);
        updateTime(c);
        startAlarm(c);
    }

    private void updateTime(Calendar c){
        String time="Alarm set for :";
        time+= DateFormat.getTimeInstance(DateFormat.SHORT).format(c.getTime());
        t0.setText(time);
    }
    private void startAlarm(Calendar c) {

        AlarmManager am= (AlarmManager) getSystemService(Context.ALARM_SERVICE);
        Intent i=new Intent( packageContext: this,AlarmaReceiver.class);
        PendingIntent p=PendingIntent.getBroadcast( context: this, requestCode: 1,i, flags: 0);
        if(c.before(Calendar.getInstance())){
            c.add(Calendar.DATE, amount: 1);
        }
        if (Build.VERSION.SDK_INT >= Build.VERSION_CODES.KITKAT) {
            am.setExact(AlarmManager.RTC_WAKEUP,c.getTimeInMillis(),p);
        }
    }

    public void cancelAlarm(View v){
        AlarmManager am= (AlarmManager) getSystemService(Context.ALARM_SERVICE);
        Intent i=new Intent( packageContext: this,AlarmaReceiver.class);
        PendingIntent p=PendingIntent.getBroadcast( context: this, requestCode: 1,i, flags: 0);
        am.cancel(p);
        t0.setText("Alarm Canceled");
    }
}
```
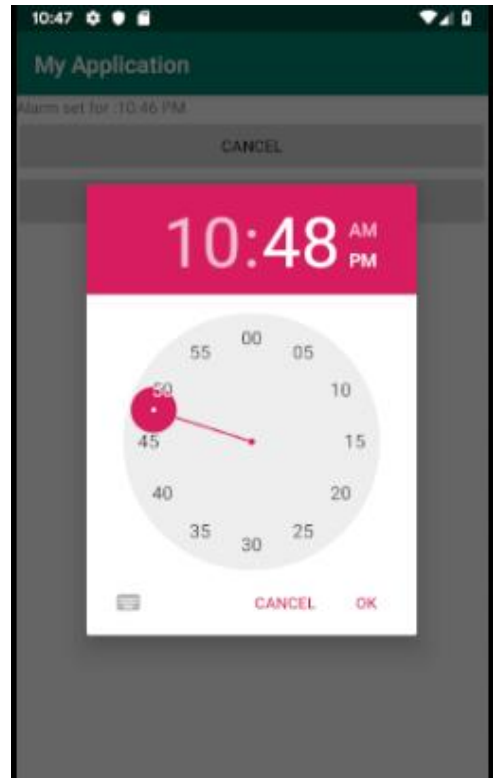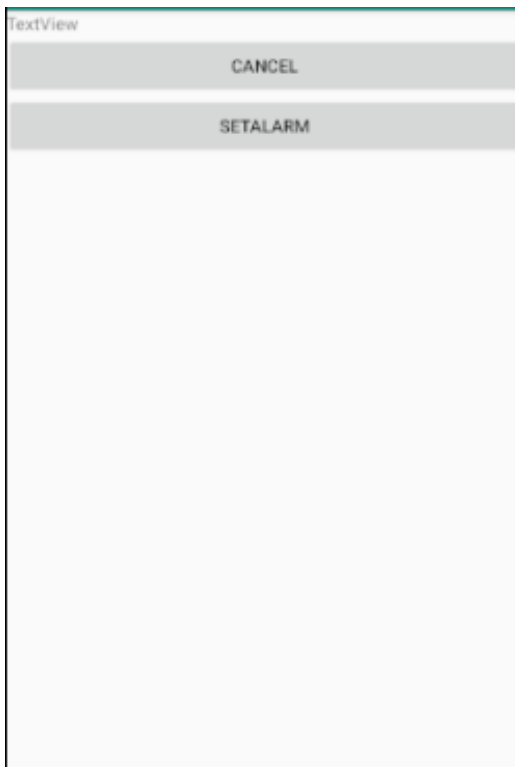
OUTPUT:-
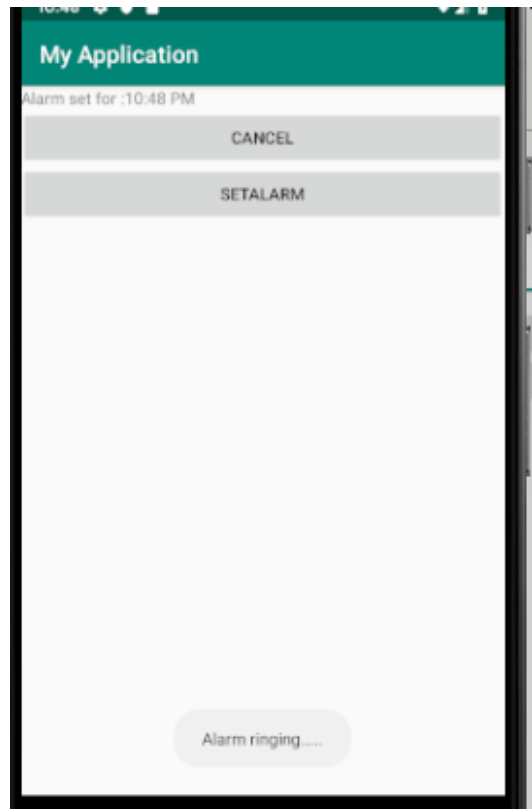
15.MultipleTypes Of Input Fields

Activity_Main.xml

```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"
    tools:context=".MainActivity"
    android:orientation="vertical"
    android:layout_weight="5">

    <LinearLayout
        android:layout_width="match_parent"
        android:layout_height="27dp"
        android:layout_weight="1"
        android:orientation="horizontal">

        <TextView
            android:id="@+id/textview0"
            android:layout_width="140dp"
            android:layout_height="58dp"
            android:text="Name"></TextView>

        <EditText
            android:id="@+id/edittext1"
            android:layout_width="333dp"
            android:layout_height="66dp"
            android:hint="EditTextField" />
    </LinearLayout>

    <LinearLayout
        android:layout_width="515dp"
        android:layout_height="67dp"
        android:layout_weight="1"
        android:orientation="horizontal">

        <TextView
            android:id="@+id/textview1"
            android:layout_width="141dp"
            android:layout_height="58dp"
            android:text="Password"></TextView>

        <EditText
            android:id="@+id/editText2"
            android:layout_width="354dp"
            android:layout_height="91dp"
            android:ems="10"
            android:hint="textPasswordField"
            android:inputType="textPassword" />
    </LinearLayout>
```

```xml
<LinearLayout
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_weight="1"
    android:orientation="horizontal">

    <TextView
        android:id="@+id/text2view"
        android:layout_width="150dp"
        android:layout_height="58dp"
        android:text="Address" />

    <EditText
        android:id="@+id/editText3"
        android:layout_width="wrap_content"
        android:layout_height="68dp"
        android:layout_weight="1"
        android:ems="10"
        android:hint="TextMultilineField"
        android:inputType="textMultiLine" />
</LinearLayout>
<LinearLayout
    android:layout_width="match_parent"
    android:layout_height="72dp"
    android:layout_weight="1"
    android:orientation="horizontal">
    <TextView
        android:layout_width="142dp"
        android:layout_height="58dp"
        android:text="Email"
        android:id="@+id/textview3"/>
    <EditText
        android:id="@+id/editText4"
        android:layout_width="424dp"
        android:layout_height="77dp"
        android:layout_weight="1"
        android:ems="10"
        android:inputType="textEmailAddress"
        android:hint="textEmailAddressField"/>
    <LinearLayout
        android:layout_width="match_parent"
        android:layout_height="72dp"
        android:layout_weight="1"
        android:orientation="horizontal">
        <TextView
            android:layout_width="150dp"
            android:layout_height="58dp"
            android:text="Contact"
            android:id="@+id/text5"/>
        <EditText
            android:id="@+id/editText5"
            android:layout_width="wrap_content"
            android:layout_height="78dp"
            android:layout_weight="1"
            android:ems="10"
            android:maxLength="10"
            android:inputType="number"
            android:hint="NumberField"/>
    </LinearLayout>
</LinearLayout>
```

OUTPUT:-

16.Shape demo

Activity_main.xml

```xml
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout android:orientation="vertical" 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"
    android:layout_weight="4">

    <LinearLayout
        android:layout_width="match_parent"
        android:layout_height="match_parent"

        android:layout_weight="2"
        android:background="@drawable/buttonshape"
        android:orientation="horizontal">

        <LinearLayout
            android:layout_width="match_parent"
            android:layout_height="match_parent"

            android:layout_weight="2"
            android:background="@drawable/buttonshape"
            android:orientation="horizontal">

        <TextView
            android:id="@+id/textView2"
            style="@style/textcolor.textback1"
            android:layout_width="0dp"
            android:layout_height="wrap_content"
            android:layout_marginLeft="20dp"
            android:layout_marginRight="25dp"
            android:layout_marginTop="140dp"
            android:layout_weight="1"
            android:gravity="center"
            android:text="Shinchan"
            android:textStyle="bold"
            android:textSize="25dp"

            />
</LinearLayout>
<LinearLayout
    android:layout_width="match_parent"
    android:layout_height="match_parent"

    android:layout_weight="2"
    android:background="@drawable/buttonshape"
    android:orientation="horizontal">
```

```xml
        <TextView
            android:id="@+id/textView"
            style="@style/textcolor.textback2"
            android:layout_width="0dp"
            android:layout_height="wrap_content"
            android:layout_marginLeft="20dp"
            android:layout_marginTop="140dp"
            android:layout_marginRight="20dp"
            android:layout_weight="1"
            android:gravity="center"
            android:text="Doremon"
            android:textStyle="bold"
            android:textSize="25dp"


            />
    </LinearLayout>
</LinearLayout>


<LinearLayout
    android:background="@drawable/buttonshape"
    android:layout_width="match_parent"
    android:layout_weight="2"
    android:layout_height="match_parent"
    android:orientation="horizontal">

    <LinearLayout
        android:layout_width="match_parent"
        android:layout_height="match_parent"

        android:layout_weight="2"
        android:background="@drawable/buttonshape"
        android:orientation="horizontal">

        <TextView
            android:id="@+id/textView3"
            style="@style/textcolor.textback3"
            android:layout_width="0dp"
            android:layout_height="wrap_content"
            android:layout_weight="1"
            android:gravity="center"
            android:layout_marginTop="140dp"
            android:layout_marginLeft="18dp"
            android:layout_marginRight="25dp"
            android:text="Pokemon"
            android:textStyle="bold"
            android:textSize="25dp"


            />
    </LinearLayout>
```

```xml
<LinearLayout
    android:layout_width="match_parent"
    android:layout_height="match_parent"

    android:layout_weight="2"
    android:background="@drawable/buttonshape"
    android:orientation="horizontal">


    <TextView
        android:id="@+id/textView4"
        style="@style/textcolor.textback4"
        android:layout_width="0dp"
        android:layout_height="wrap_content"
        android:layout_weight="1"
        android:gravity="center"
        android:layout_marginTop="140dp"
        android:layout_marginLeft="20dp"
        android:layout_marginRight="20dp"
        android:text="Popeye"
        android:textStyle="bold"
        android:textSize="25dp">

    </TextView>

    </LinearLayout>
    </LinearLayout>
</LinearLayout>
```

Buttonshape.xml

```xml
<?xml version="1.0" encoding="utf-8"?>
<shape xmlns:android="http://schemas.android.com/apk/res/android"
    android:shape="rectangle">


    <stroke
        android:width="20dp"
        android:color="#8d7817e6"></stroke>


    <solid android:color="#000000"></solid>


</shape>
```

Styles.xml

```xml
<resources>

    <!-- Base application theme. -->
    <style name="AppTheme" parent="Theme.AppCompat.Light.DarkActionBar">
        <!-- Customize your theme here. -->
        <item name="colorPrimary">@color/colorPrimary</item>
        <item name="colorPrimaryDark">@color/colorPrimaryDark</item>
        <item name="colorAccent">@color/colorAccent</item>

    </style>

    <style name="themepad">
        <item name="android:padding">20dp</item>
    </style>
    <style name="textcolor" parent="themepad">
        <item name="android:textColor">#000000</item>
    </style>

    <style name="textcolor.textback1">
        <item name="android:background">#a3e114</item>
    </style>
    <style name="textcolor.textback2">
        <item name="android:background">#ed37de</item>
    </style>
    <style name="textcolor.textback3">
        <item name="android:background">#FF2BE9CC</item>
    </style>

    <style name="textcolor.textback4">
        <item name="android:background">#FFF99728</item>
    </style>
</resources>
```

OUTPUT:-

17.Registration Form

Activity_main.xml

```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="vertical"
    tools:context=".Form">

    <TextView
        android:id="@+id/txt1"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:text="REGISTERATION FORM"
        android:textAlignment="center"
        android:textColor="@color/colorAccent"
        android:textSize="20sp"
        android:textStyle="bold" />

    <LinearLayout
        android:layout_width="match_parent"
        android:layout_height="0dp"
        android:layout_weight="1">

        <TextView
            android:layout_width="0dp"
            android:layout_height="match_parent"
            android:layout_weight="1"
            android:gravity="center"
            android:text="NAME"
            android:textColor="@color/colorAccent"

        android:textSize="14sp"
        android:textStyle="bold" />

    <EditText
        android:id="@+id/edit1"
        android:layout_width="0dp"
        android:layout_height="match_parent"
        android:layout_weight="4"
        android:hint="Type here" />


</LinearLayout>
```

```xml
<LinearLayout
    android:layout_width="match_parent"
    android:layout_height="0dp"
    android:layout_weight="1">

    <TextView
        android:layout_width="0dp"
        android:layout_height="match_parent"
        android:layout_weight="1"
        android:gravity="center"
        android:text="SURNAME"
        android:textColor="@color/colorAccent"
        android:textSize="14sp" />

    <EditText
        android:id="@+id/edit2"
        android:layout_width="0dp"
        android:layout_height="match_parent"
        android:layout_weight="4"
        android:hint="Type here" />


</LinearLayout>

<LinearLayout
    android:layout_width="match_parent"
    android:layout_height="0dp"
    android:layout_weight="1">

<TextView
    android:layout_width="0dp"
    android:layout_height="match_parent"
    android:layout_weight="1"
    android:gravity="center"

    android:text="GENDER"
    android:textColor="@color/colorAccent"
    android:textSize="14sp"
    android:textStyle="bold" />


<RadioGroup
    android:id="@+id/rgroup"
    android:layout_width="0dp"
    android:layout_height="match_parent"
    android:layout_weight="4"
    android:orientation="horizontal">
```

```xml
        <RadioButton
            android:id="@+id/rbtn1"
            android:layout_width="0dp"
            android:layout_height="match_parent"
            android:layout_weight="2"
            android:text="MALE" />

        <RadioButton
            android:id="@+id/rbtn2"
            android:layout_width="0dp"
            android:layout_height="match_parent"
            android:layout_weight="2"
            android:text="FEMALE" />
    </RadioGroup>


</LinearLayout>

<LinearLayout
    android:layout_width="match_parent"
    android:layout_height="0dp"
    android:layout_weight="1">

    <TextView
        android:layout_width="0dp"
        android:layout_height="match_parent"
        android:layout_weight="1"
        android:gravity="center"
        android:text="CONTACT"
        android:textColor="@color/colorAccent"
        android:textSize="14sp"
        android:textStyle="bold" />

    <EditText
        android:id="@+id/edit3"
        android:layout_width="0dp"
        android:layout_height="match_parent"
        android:layout_weight="4"
        android:hint="Type here" />


</LinearLayout>

<LinearLayout
    android:layout_width="match_parent"
    android:layout_height="0dp"
    android:layout_weight="1"
    android:gravity="center">
```

```xml
<TextView
    android:layout_width="0dp"
    android:layout_height="match_parent"
    android:layout_weight="1"
    android:gravity="center"

    android:text="COURSES"
    android:textColor="@color/colorAccent"
    android:textSize="14sp"
    android:textStyle="bold" />

<LinearLayout
    android:layout_width="0dp"
    android:layout_height="wrap_content"
    android:layout_weight="4"
    android:orientation="vertical">

    <LinearLayout
        android:layout_width="match_parent"
        android:layout_height="0dp"
        android:layout_weight="0.5"


        >

        <CheckBox
            android:id="@+id/chk1"
            android:layout_width="0dp"
            android:layout_height="wrap_content"
            android:layout_weight="2"
            android:text="JAVA" />
```

```xml
        <CheckBox
            android:id="@+id/chk2"
            android:layout_width="0dp"
            android:layout_height="wrap_content"
            android:layout_weight="2"
            android:text="ANDROID" />
    </LinearLayout>

    <LinearLayout
        android:layout_width="match_parent"
        android:layout_height="0dp"
        android:layout_weight="0.5"

        >

        <CheckBox
            android:id="@+id/chk3"
            android:layout_width="0dp"
            android:layout_height="wrap_content"
            android:layout_weight="2"
            android:text="ALGORITHMS" />

        <CheckBox
            android:id="@+id/chk4"
            android:layout_width="0dp"
            android:layout_height="wrap_content"
            android:layout_weight="2"
            android:text="WEB" />

        </LinearLayout>


    </LinearLayout>


</LinearLayout>

<LinearLayout
    android:layout_width="match_parent"
    android:layout_height="0dp"
    android:layout_weight="1">

    <TextView
        android:layout_width="0dp"
        android:layout_height="match_parent"
        android:layout_weight="1"
        android:gravity="center"

        android:text="MONTHS SUBSCRIPTION"
        android:textColor="@color/colorAccent"
        android:textSize="14sp"
        android:textStyle="bold" />
```

```xml
    <Spinner
        android:id="@+id/spin1"
        android:layout_width="0dp"
        android:layout_height="match_parent"
        android:layout_weight="1"
        android:gravity="center" />


</LinearLayout>

<LinearLayout
    android:layout_width="match_parent"
    android:layout_height="0dp"
    android:layout_weight="1">

    <TextView
        android:layout_width="0dp"
        android:layout_height="match_parent"
        android:layout_weight="1"
        android:gravity="center"

        android:text="TEST ASSISTANCE"
        android:textColor="@color/colorAccent"
        android:textSize="14sp"
        android:textStyle="bold" />

        <Switch
            android:id="@+id/switch1"
            android:layout_width="0dp"
            android:layout_height="match_parent"
            android:layout_weight="1"
            android:gravity="center" />
    </LinearLayout>


    <LinearLayout
        android:layout_width="match_parent"
        android:layout_height="0dp"
        android:layout_weight="1">

        <Button
            android:id="@+id/btn"
            android:layout_width="0dp"
            android:layout_height="match_parent"
            android:layout_weight="2"
            android:onClick="btnClick"
            android:text="SUBMIT"
            android:textColor="@color/colorAccent"
            android:textSize="14sp"
            android:textStyle="bold" />
    </LinearLayout>
</LinearLayout>
```

OUTPUT:-