Program no: 01

Aim: Program to develop the android mobile application which consist of GUI components for Login Page creation.

XML Code:

```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"
    android:padding="20dp"
    android:background="#fff"
    tools:context=".login">

    <TextView
        android:id="@+id/logo_name"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:fontFamily="@font/bungee"
        android:text="HELLO THERE, WELCOME BACK"
        android:textColor="@color/black"
        android:textSize="40sp"
        android:transitionName="logo_text" />
```

```xml
<TextView

    android:id="@+id/sig"

    android:layout_width="wrap_content"

    android:layout_height="wrap_content"

    android:fontFamily="casual"

    android:transitionName="title"

    android:text="Sign in to continue"

    android:textSize="18sp"/>


<LinearLayout

    android:layout_width="match_parent"

    android:layout_height="wrap_content"

    android:layout_marginTop="20dp"

    android:layout_marginBottom="20dp"

    android:orientation="vertical">


    <com.google.android.material.textfield.TextInputLayout

        android:id="@+id/username"

        android:layout_width="match_parent"

        android:layout_height="wrap_content"

        android:hint="Username"

        android:transitionName="nme"

        style="@style/Widget.MaterialComponents.TextInputLayout.OutlinedBox">


        <com.google.android.material.textfield.TextInputEditText

            android:layout_width="match_parent"
```

```
            android:layout_height="wrap_content"

            android:inputType="text" />

    </com.google.android.material.textfield.TextInputLayout>


    <com.google.android.material.textfield.TextInputLayout

        android:id="@+id/password"

        android:layout_width="match_parent"

        android:layout_height="wrap_content"

        android:hint="Password"

        app:passwordToggleEnabled="true"

        app:passwordToggleTint="@color/black"

        style="@style/Widget.MaterialComponents.TextInputLayout.OutlinedBox">

        <com.google.android.material.textfield.TextInputEditText

            android:layout_width="match_parent"

            android:layout_height="wrap_content"

            android:inputType="textPassword"/>

    </com.google.android.material.textfield.TextInputLayout>


    <Button

        android:id="@+id/fp"

        android:layout_width="200dp"

        android:layout_height="30dp"

        android:textSize="9dp"

        android:background="#00000000"

        android:text="Forget password?"

        android:textColor="@color/black"

        android:layout_gravity="right"
```

```
        android:elevation="0dp"

        android:layout_margin="5dp"/>


    <Button

        android:id="@+id/login_button"

        android:layout_width="match_parent"

        android:layout_height="wrap_content"

        android:layout_marginTop="5dp"

        android:layout_marginBottom="5dp"

        android:backgroundTint="#000"

        android:fontFamily="@font/audiowide"

        android:text="Sign-In"

        android:textColor="#fff"

        android:transitionName="bttn" />

    <Button

        android:id="@+id/register_link"

        android:layout_width="200dp"

        android:layout_height="wrap_content"

        android:background="#00000000"

        android:text="New User? SIGN UP now!"

        android:layout_gravity="right"

        android:elevation="0dp"

        android:layout_margin="5dp"/>


  </LinearLayout>

</LinearLayout>
```

Java Code:

package com.example.android;

import androidx.appcompat.app.AppCompatActivity;

import androidx.core.app.ActivityCompat;

import androidx.core.content.ContextCompat;

import android.app.ActivityOptions;

import android.content.Intent;

import android.content.SharedPreferences;

import android.content.pm.PackageManager;

import android.os.AsyncTask;

import android.os.Build;

import android.os.Bundle;

import android.util.Pair;

import android.view.View;

import android.widget.Button;

import android.widget.TextView;

import android.widget.Toast;

import com.google.android.material.textfield.TextInputLayout;

import org.json.JSONObject;

public class login extends AppCompatActivity {

    TextInputLayout usr,psd;

    TextView ln,ls;

    Button btn_login,reg,forget;

    String strusername,strpassword, BaseUrl= "";

```java
SharedPreferences sp;

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


    ln=findViewById(R.id.logo_name);
    ls=findViewById(R.id.sig);
    usr=(TextInputLayout)findViewById(R.id.username);
    psd=(TextInputLayout)findViewById(R.id.password);
    forget=findViewById(R.id.fp);
    btn_login=findViewById(R.id.login_button);
    reg=findViewById(R.id.register_link);


    sp = getSharedPreferences("login_daa", MODE_PRIVATE);


    getSupportActionBar().hide();


    /*forget.setOnClickListener(new View.OnClickListener() {
        @Override
        public void onClick(View v) {
            Intent j=new Intent(getApplicationContext(),forgot_password.class);
            startActivity(j);
        }
    });*/
```
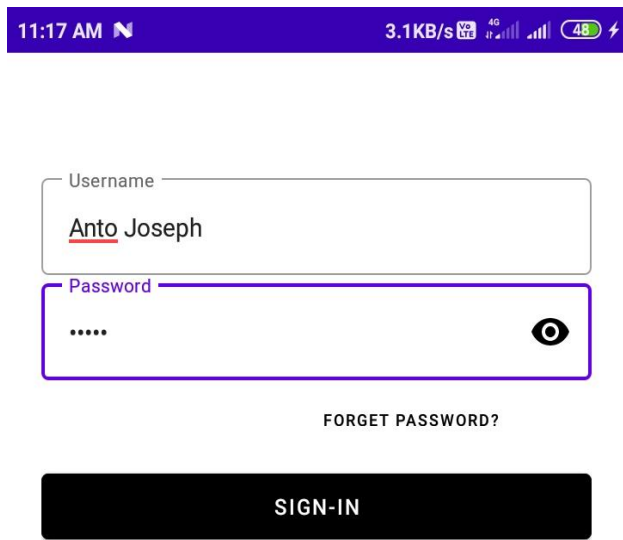
```java
btn_login.setOnClickListener(new View.OnClickListener() {

    @Override

    public void onClick(View v) {

        strusername=usr.getEditText().getText().toString().trim();

        strpassword=psd.getEditText().getText().toString().trim();


        if (strusername.equals(""))

        {

            Toast.makeText(login.this,"Enter username",Toast.LENGTH_LONG).show();

        }

        else if(strpassword.equals(""))

        {

            Toast.makeText(login.this,"Enter password", Toast.LENGTH_LONG).show();

        }

        else

        {

            //new checkPermission().execute();

        }

    }

});

}



}
```

Output:

Program no: 02

Aim: Program to display the content of EditText in TextView on button click.

XML Code:

<?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:background="#FFD24C"

    android:gravity="center"

    android:orientation="vertical"

    tools:context=".Edit2Text">

    <EditText

       android:id="@+id/edt1"

       android:layout_width="wrap_content"

       android:layout_height="wrap_content"

       android:hint="Enter name here.." />

```xml
<Button

    android:id="@+id/btn1"

    android:layout_width="wrap_content"

    android:layout_height="wrap_content"

    android:layout_marginTop="20dp"

    android:text="Add" />


<TextView

    android:id="@+id/txt2"

    android:layout_width="match_parent"

    android:layout_height="50dp"

    android:layout_marginTop="20dp"

    android:gravity="center"

    android:textSize="20dp" />


</LinearLayout>
```

Java Code:

```java
package com.example.android;


import androidx.appcompat.app.AppCompatActivity;


import android.content.Intent;

import android.os.Bundle;

import android.view.View;


import android.widget.Button;
```

```java
import android.widget.EditText;

import android.widget.TextView;


public class Edit2Text extends AppCompatActivity {

    Button b1;

    EditText e1;

    TextView t1;


    @Override

    protected void onCreate(Bundle savedInstanceState) {

        super.onCreate(savedInstanceState);

        setContentView(R.layout.activity_edit2_text);


        e1 = findViewById(R.id.edt1);

        b1 = findViewById(R.id.btn1);

        t1 = findViewById(R.id.txt2);


        b1.setOnClickListener(new View.OnClickListener() {

            @Override

            public void onClick(View v) {


                String value = e1.getText().toString();

                t1.setText(String.valueOf(value));

            }

        });

    }

}
```
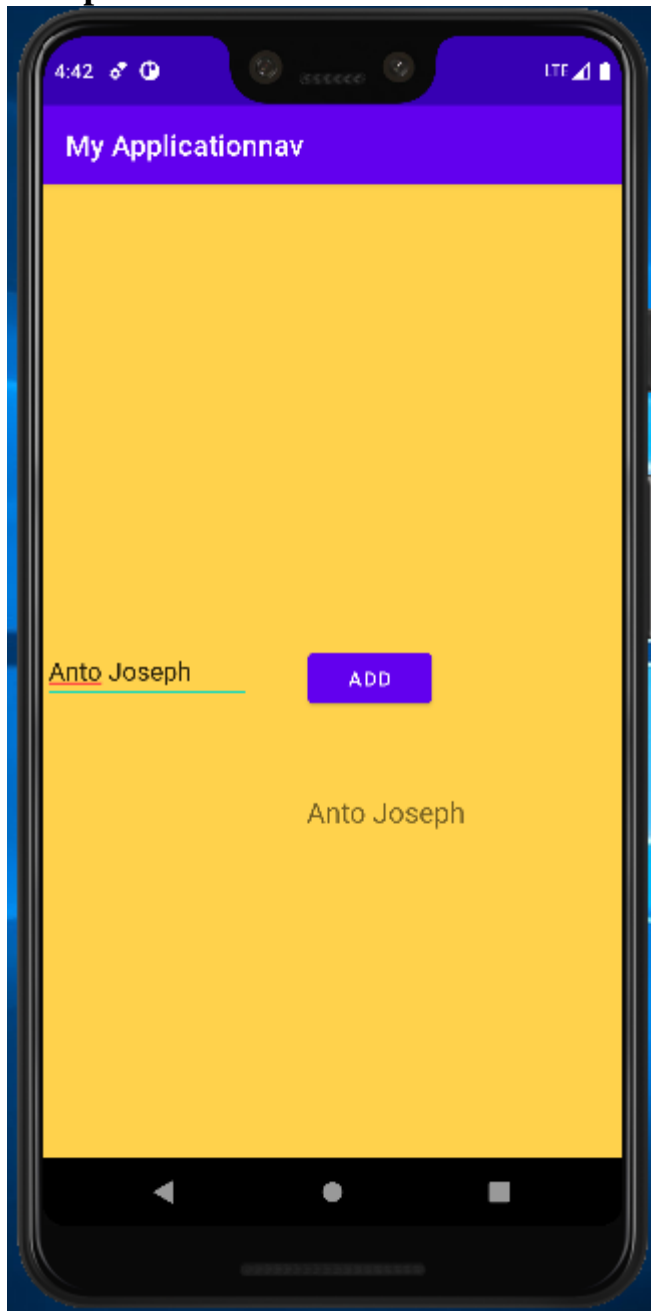

Output:

Program no: 03

Aim: Design a Login Form with username and password using LinearLayout and toast valid credentials

XML Code:

```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:orientation="vertical"

    android:gravity="center"

    android:background="@drawable/login"

    android:layout_height="match_parent"

    tools:context=".Login">

    <TextView

        android:id="@+id/txtlgn"

        android:layout_width="wrap_content"

        android:layout_height="wrap_content"

        android:fontFamily="@font/archivo_black"

        android:text="Login"

        android:textSize="50dp"/>
```

```xml
<LinearLayout

    android:layout_width="match_parent"

    android:layout_height="wrap_content"

    android:orientation="vertical"

    android:layout_marginLeft="20dp"

    android:layout_marginRight="20dp">


    <com.google.android.material.textfield.TextInputLayout

        android:id="@+id/edturn"

        android:layout_width="match_parent"

        android:layout_height="wrap_content"

        android:hint="Username"

        style="@style/Widget.MaterialComponents.TextInputLayout.OutlinedBox">


        <com.google.android.material.textfield.TextInputEditText

            android:layout_width="match_parent"

            android:layout_height="wrap_content"

            android:inputType="text"/>


    </com.google.android.material.textfield.TextInputLayout>


    <com.google.android.material.textfield.TextInputLayout

        android:id="@+id/edtpswd"

        android:layout_width="match_parent"

        android:layout_height="wrap_content"

        android:hint="Password"

        style="@style/Widget.MaterialComponents.TextInputLayout.OutlinedBox">
```

```xml
            <com.google.android.material.textfield.TextInputEditText

                android:layout_width="match_parent"

                android:layout_height="wrap_content"

                android:inputType="text"/>


        </com.google.android.material.textfield.TextInputLayout>


    </LinearLayout>



    <Button

        android:id="@+id/btnlgn"

        android:layout_width="wrap_content"

        android:layout_height="wrap_content"

        android:text="Login"/>



</LinearLayout>
```

Java Code:

```java
package com.example.android;


import androidx.appcompat.app.AppCompatActivity;


import android.content.Intent;
```

```java
import android.os.Bundle;

import android.util.Log;

import android.view.View;

import android.widget.Button;


import android.widget.EditText;

import android.widget.TextView;


import android.widget.Toast;


import com.google.android.material.textfield.TextInputLayout;


public class Login extends AppCompatActivity {

    TextView t1;

    TextInputLayout e1, e2;

    Button b1;


    @Override
    protected void onCreate(Bundle savedInstanceState) {

        super.onCreate(savedInstanceState);

        setContentView(R.layout.activity_login);


        t1 =  findViewById(R.id.txtlgn);

        e1 = findViewById(R.id.edturn);

        e2 = findViewById(R.id.edtpswd);

        b1 = findViewById(R.id.btnlgn);
```

```java
b1.setOnClickListener(new View.OnClickListener() {

    @Override
    public void onClick(View v) {

        String username = e1.getEditText().getText().toString().trim();

        String password = e2.getEditText().getText().toString().trim();

        if (username.equals("")){

            Toast.makeText(Login.this, "Enter your username",
Toast.LENGTH_SHORT).show();
        }

        else if(password.equals("")){

            Toast.makeText(Login.this, "Enter your password",
Toast.LENGTH_SHORT).show();
        }

        else{

            Intent j = new Intent(Login.this,Dashboard.class);

            if(username.equals("admin")){

                j.putExtra("usrn",username);

                startActivity(j);
```

```
          }else if(username.equals("patient")){


            j.putExtra("usrn",username);

            startActivity(j);


          }else{


            Toast.makeText(Login.this, "Invalid user", Toast.LENGTH_SHORT).show();


          }


        }

      }


    });


  }


}
```

Output:

Program no: 04

Aim: Implementing basic arithmetic operations of a simple calculator

XML Code:

```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=".simpleCal"
    android:padding="20dp"
    android:orientation="vertical"
    android:background="@color/bg">

    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="CALCULATOR"
        android:textSize="25sp"
        android:layout_marginBottom="16dp"
        android:textColor="@android:color/black" />

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

```
    android:layout_height="wrap_content"

    android:orientation="horizontal"

    android:layout_marginBottom="20dp">


    <EditText

        android:id="@+id/first_no"

        android:layout_width="102dp"

        android:layout_height="59dp"

        android:ems="10"

        android:layout_marginHorizontal="50dp"

        android:hint="Enter no1" />


    <EditText

        android:id="@+id/second_no"

        android:layout_width="102dp"

        android:layout_height="59dp"

        android:ems="10"

        android:hint="Enter no2" />

</LinearLayout>


<LinearLayout

    android:layout_width="match_parent"

    android:layout_height="wrap_content"

    android:orientation="horizontal"

    android:gravity="center"

    android:layout_marginBottom="20dp">
```

```xml
    <TextView

        android:textSize="35sp"

        android:id="@+id/answer"

        android:layout_width="wrap_content"

        android:layout_height="59dp"

        android:layout_marginHorizontal="50dp"

        android:hint="ans" />


</LinearLayout>


<LinearLayout

    android:orientation="vertical"

    android:layout_marginLeft="50dp"

    android:layout_width="230dp"

    android:layout_height="wrap_content"

    android:layout_marginBottom="30dp">


    <LinearLayout

        android:layout_width="match_parent"

        android:layout_height="wrap_content"

        android:orientation="horizontal">


        <Button

            android:id="@+id/sub"

            android:layout_width="wrap_content"

            android:layout_height="wrap_content"
```

```xml
        android:text="-"

        android:layout_marginRight="50dp"

        android:textSize="25sp"

        android:layout_marginBottom="16dp" />


    <Button

        android:id="@+id/add"

        android:layout_width="wrap_content"

        android:layout_height="wrap_content"

        android:layout_marginBottom="16dp"

        android:text="+"

        android:textSize="25sp"

        tools:ignore="OnClick" />


</LinearLayout>



<LinearLayout

    android:layout_width="match_parent"

    android:layout_height="wrap_content"

    android:orientation="horizontal">


<Button

    android:id="@+id/div"

    android:layout_width="wrap_content"

    android:layout_height="wrap_content"

    android:layout_marginRight="50dp"
```

```
    android:text="/"

    android:textSize="25sp"

    android:layout_marginBottom="16dp" />


<Button

    android:id="@+id/mul"

    android:layout_width="wrap_content"

    android:layout_height="wrap_content"

    android:layout_marginBottom="16dp"

    android:text="X"

    android:textSize="25sp"/>


</LinearLayout>


<Button

    android:id="@+id/equals"

    android:layout_width="match_parent"

    android:layout_height="wrap_content"

    android:layout_marginBottom="16dp"

    android:text="="

    android:textSize="35sp"/>


</LinearLayout>


</LinearLayout>
```

Java Code:

```java
package com.example.android;


import androidx.appcompat.app.AppCompatActivity;


import android.os.Bundle;

import android.view.View;

import android.widget.Button;

import android.widget.EditText;


import android.widget.TextView;

import android.widget.Toast;


public class simpleCal extends AppCompatActivity {

    EditText no1, no2;

    Button add, mul, div, sub, equal;


    TextView answer;

    double ans = 0;


    @Override
    protected void onCreate(Bundle savedInstanceState) {

        super.onCreate(savedInstanceState);

        setContentView(R.layout.activity_simple_cal);


        // for text views

        no1 = findViewById(R.id.first_no);
```

```java
no2 = findViewById(R.id.second_no);


// for button with operations

add = findViewById(R.id.add);

mul = findViewById(R.id.mul);

div = findViewById(R.id.div);

sub = findViewById(R.id.sub);


// for equal to button

equal = findViewById(R.id.equals);


// for answer field

answer = findViewById(R.id.answer);


add.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        String num1 = no1.getText().toString();

        String num2 = no2.getText().toString();


        if (num1.isEmpty() || num2.isEmpty()) {

            Toast.makeText(getApplicationContext(), "Enter Numbers",
Toast.LENGTH_SHORT).show();

        } else {

            double a = Double.parseDouble(no1.getText().toString());

            double b = Double.parseDouble(no2.getText().toString());

            ans = a + b;
```

```
        }

      }

    });

    sub.setOnClickListener(new View.OnClickListener() {


        @Override

        public void onClick(View v) {

           String num1 = no1.getText().toString();

           String num2 = no2.getText().toString();

           if (num1.isEmpty() || num2.isEmpty()) {


               Toast.makeText(getApplicationContext(), "Enter Numbers",
Toast.LENGTH_SHORT).show();
           } else {


               double a = Double.parseDouble(no1.getText().toString());

               double b = Double.parseDouble(no2.getText().toString());

               ans = a - b;

           }

       }

    });


    mul.setOnClickListener(new View.OnClickListener() {

        @Override

        public void onClick(View v) {

           String num1 = no1.getText().toString();

           String num2 = no2.getText().toString();
```

```
        if (num1.isEmpty() || num2.isEmpty()) {


            Toast.makeText(getApplicationContext(), "Enter Numbers",
Toast.LENGTH_SHORT).show();

        } else {


            double a = Double.parseDouble(no1.getText().toString());

            double b = Double.parseDouble(no2.getText().toString());

            ans = a * b;

        }

    }

});


div.setOnClickListener(new View.OnClickListener() {

    @Override

    public void onClick(View v) {

        String num1 = no1.getText().toString();

        String num2 = no2.getText().toString();


        if (num1.isEmpty() || num2.isEmpty()) {

            Toast.makeText(getApplicationContext(), "Enter Numbers",
Toast.LENGTH_SHORT).show();

        } else {


            double a = Double.parseDouble(no1.getText().toString());

            double b = Double.parseDouble(no2.getText().toString());

            if (b != 0)
```

```
        ans = a / b;



    else

        Toast.makeText(getApplicationContext(), "Enter Valid Numbers",
Toast.LENGTH_SHORT).show();

      }

    }

  });



  equal.setOnClickListener(new View.OnClickListener() {

    @Override

    public void onClick(View v) {


      String ans1 = String.valueOf(ans);

      answer.setText(ans1);

      ans = 0;


    }

  });


  }


}
```
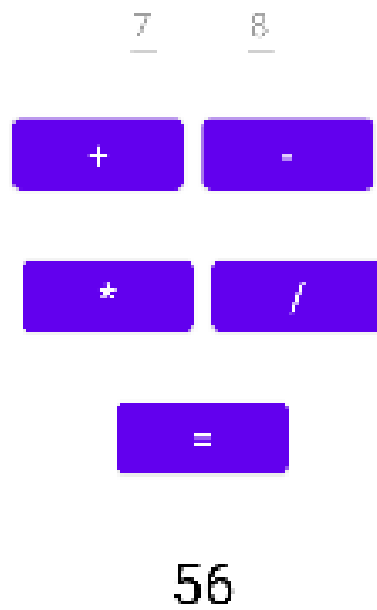
Output:

7   8

+   -

*   /

=

56

Program no: 05

Aim: Implement validations on various UI controls

XML Code:

```xml
<?xml version="1.0" encoding="utf-8"?>

<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"

    android:orientation="vertical"

    tools:context=".Ui_validation"

    tools:ignore="HardcodedText">

    <EditText

        android:id="@+id/firstName"

        android:layout_width="match_parent"

        android:layout_height="wrap_content"

        android:layout_marginStart="16dp"

        android:layout_marginTop="16dp"

        android:layout_marginEnd="16dp"

        android:hint="First Name"

        android:inputType="text" />
```

```
<EditText

    android:id="@+id/lastName"

    android:layout_width="match_parent"

    android:layout_height="wrap_content"

    android:layout_marginStart="16dp"

    android:layout_marginTop="16dp"

    android:layout_marginEnd="16dp"

    android:hint="Last Name"

    android:inputType="text" />


<EditText

    android:id="@+id/email"

    android:layout_width="match_parent"

    android:layout_height="wrap_content"

    android:layout_marginStart="16dp"

    android:layout_marginTop="16dp"

    android:layout_marginEnd="16dp"

    android:hint="Email"

    android:inputType="textEmailAddress" />


<EditText

    android:id="@+id/password"

    android:layout_width="match_parent"

    android:layout_height="wrap_content"

    android:layout_marginStart="16dp"

    android:layout_marginTop="16dp"
```

```
    android:layout_marginEnd="16dp"

    android:hint="Password"

    android:inputType="textPassword" />


<LinearLayout

    android:layout_width="match_parent"

    android:layout_height="wrap_content"

    android:layout_marginTop="8dp"

    android:gravity="end"

    android:orientation="horizontal">


    <Button

        android:id="@+id/cancelButton"

        style="@style/Widget.AppCompat.Button.Borderless"

        android:layout_width="wrap_content"

        android:layout_height="wrap_content"

        android:layout_marginEnd="4dp"

        android:text="CANCEL"

        android:textColor="@color/white" />


    <Button

        android:id="@+id/proceedButton"

        android:layout_width="wrap_content"

        android:layout_height="wrap_content"

        android:layout_marginEnd="16dp"

        android:backgroundTint="@color/black"

        android:text="PROCEED"
```

android:textColor="@android:color/white"

tools:ignore="ButtonStyle" />

    </LinearLayout>

</LinearLayout>

Java Code:

package com.example.android;

import androidx.appcompat.app.AppCompatActivity;

import android.content.Intent;

import android.os.Bundle;

import android.view.View;

import android.widget.Button;

import android.widget.EditText;

public class Ui_validation extends AppCompatActivity {

    // two buttons

    Button bCancel, bProceed;

    // four text fields

    EditText etFirstName, etLastName, etEmail, etPassword;

    // one boolean variable to check whether all the text fields

    // are filled by the user, properly or not.

    boolean isAllFieldsChecked = false;

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

    super.onCreate(savedInstanceState);

    setContentView(R.layout.activity_ui_validation);



    // register buttons with their proper IDs.

    bProceed = findViewById(R.id.proceedButton);

    bCancel = findViewById(R.id.cancelButton);



    // register all the EditText fields with their IDs.

    etFirstName = findViewById(R.id.firstName);

    etLastName = findViewById(R.id.lastName);

    etEmail = findViewById(R.id.email);

    etPassword = findViewById(R.id.password);



    // handle the PROCEED button

    bProceed.setOnClickListener(new View.OnClickListener() {

        @Override

        public void onClick(View v) {



            // store the returned value of the dedicated function which checks

            // whether the entered data is valid or if any fields are left blank.

            isAllFieldsChecked = CheckAllFields();



            // the boolean variable turns to be true then

            // only the user must be proceed to the activity2
```

```java
        if (isAllFieldsChecked) {

            Intent i = new Intent(Ui_validation.this, Dashboard.class);

            startActivity(i);

        }

    }

});


    // if user presses the cancel button then close the

    // application or the particular activity.

    bCancel.setOnClickListener(new View.OnClickListener() {

        @Override

        public void onClick(View v) {

            Ui_validation.this.finish();

            System.exit(0);

        }

    });

}


// function which checks all the text fields

// are filled or not by the user.

// when user clicks on the PROCEED button

// this function is triggered.

private boolean CheckAllFields() {

    if (etFirstName.length() == 0) {

        etFirstName.setError("This field is required");

        return false;

    }
```

```
    if (etLastName.length() == 0) {

        etLastName.setError("This field is required");

        return false;

    }



    if (etEmail.length() == 0) {

        etEmail.setError("Email is required");

        return false;

    }



    if (etPassword.length() == 0) {

        etPassword.setError("Password is required");

        return false;

    } else if (etPassword.length() < 8) {

        etPassword.setError("Password must be minimum 8 characters");

        return false;

    }



    // after all validation return true.

    return true;

  }

}
```

Output:

Program no: 06

Aim: Design a registration activity and store registration details in local memory of phone using Intents and SharedPreferences

XML Code:

```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=".SPandIntent">


    <TextView

        android:id="@+id/textView3"

        android:layout_width="60dp"

        android:layout_height="17dp"

        android:text="Name"

        app:layout_constraintBottom_toBottomOf="parent"

        app:layout_constraintEnd_toEndOf="parent"

        app:layout_constraintHorizontal_bias="0.091"

        app:layout_constraintStart_toStartOf="parent"

        app:layout_constraintTop_toTopOf="parent"

        app:layout_constraintVertical_bias="0.222" />
```

```xml
<EditText

    android:id="@+id/name"

    android:layout_width="wrap_content"

    android:layout_height="wrap_content"

    android:ems="10"

    android:inputType="textPersonName"

    app:layout_constraintBottom_toBottomOf="parent"

    app:layout_constraintEnd_toEndOf="parent"

    app:layout_constraintHorizontal_bias="0.756"

    app:layout_constraintStart_toStartOf="parent"

    app:layout_constraintTop_toTopOf="parent"

    app:layout_constraintVertical_bias="0.215" />


<TextView

    android:id="@+id/textView4"

    android:layout_width="wrap_content"

    android:layout_height="wrap_content"

    android:text="Email ID"

    app:layout_constraintBottom_toBottomOf="parent"

    app:layout_constraintEnd_toEndOf="parent"

    app:layout_constraintHorizontal_bias="0.096"

    app:layout_constraintStart_toStartOf="parent"

    app:layout_constraintTop_toTopOf="parent"

    app:layout_constraintVertical_bias="0.325" />


<EditText

    android:id="@+id/em"
```

```
android:layout_width="wrap_content"

android:layout_height="wrap_content"

android:ems="10"

android:inputType="textPersonName"

app:layout_constraintBottom_toBottomOf="parent"

app:layout_constraintEnd_toEndOf="parent"

app:layout_constraintHorizontal_bias="0.761"

app:layout_constraintStart_toStartOf="parent"

app:layout_constraintTop_toTopOf="parent"

app:layout_constraintVertical_bias="0.319" />


<TextView

    android:id="@+id/textView5"

    android:layout_width="wrap_content"

    android:layout_height="wrap_content"

    android:text="Phone No."

    app:layout_constraintBottom_toBottomOf="parent"

    app:layout_constraintEnd_toEndOf="parent"

    app:layout_constraintHorizontal_bias="0.09"

    app:layout_constraintStart_toStartOf="parent"

    app:layout_constraintTop_toTopOf="parent"

    app:layout_constraintVertical_bias="0.435" />


<EditText

    android:id="@+id/ph"

    android:layout_width="wrap_content"

    android:layout_height="wrap_content"
```

```
    android:ems="10"

    android:inputType="number"

    app:layout_constraintBottom_toBottomOf="parent"

    app:layout_constraintEnd_toEndOf="parent"

    app:layout_constraintHorizontal_bias="0.761"

    app:layout_constraintStart_toStartOf="parent"

    app:layout_constraintTop_toTopOf="parent"

    app:layout_constraintVertical_bias="0.431" />


<Button

    android:id="@+id/sav"

    android:layout_width="wrap_content"

    android:layout_height="wrap_content"

    android:text="SAVE"

    app:layout_constraintBottom_toBottomOf="parent"

    app:layout_constraintEnd_toEndOf="parent"

    app:layout_constraintHorizontal_bias="0.413"

    app:layout_constraintStart_toStartOf="parent"

    app:layout_constraintTop_toTopOf="parent"

    app:layout_constraintVertical_bias="0.562" />


<TextView

    android:id="@+id/textView6"

    android:layout_width="wrap_content"

    android:layout_height="wrap_content"

    android:text="Enter Your Details"

    android:textSize="25sp"
```

```
android:textStyle="bold"

app:layout_constraintBottom_toBottomOf="parent"

app:layout_constraintEnd_toEndOf="parent"

app:layout_constraintHorizontal_bias="0.464"

app:layout_constraintStart_toStartOf="parent"

app:layout_constraintTop_toTopOf="parent"

app:layout_constraintVertical_bias="0.133" />
```

</androidx.constraintlayout.widget.ConstraintLayout>

Sp2.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=".Sp2">


    <TextView

        android:id="@+id/textView2"

        android:layout_width="wrap_content"

        android:layout_height="wrap_content"

        android:text="Your Details Using Intent"

        android:textStyle="bold"

        android:textSize="20sp"

        app:layout_constraintBottom_toBottomOf="parent"
```

```
app:layout_constraintEnd_toEndOf="parent"

app:layout_constraintHorizontal_bias="0.498"

app:layout_constraintStart_toStartOf="parent"

app:layout_constraintTop_toTopOf="parent"

app:layout_constraintVertical_bias="0.146" />


<TextView

    android:id="@+id/dis"

    android:layout_width="wrap_content"

    android:layout_height="wrap_content"

    android:textStyle="italic"

    android:textSize="15sp"

    app:layout_constraintBottom_toBottomOf="parent"

    app:layout_constraintEnd_toEndOf="parent"

    app:layout_constraintHorizontal_bias="0.498"

    app:layout_constraintStart_toStartOf="parent"

    app:layout_constraintTop_toTopOf="parent"

    app:layout_constraintVertical_bias="0.233" />


<TextView

    android:id="@+id/textView3"

    android:layout_width="wrap_content"

    android:layout_height="wrap_content"

    android:text="Your Details Using Shared Preference"

    android:textSize="20sp"

    android:textStyle="bold"

    app:layout_constraintBottom_toBottomOf="parent"
```

```
app:layout_constraintEnd_toEndOf="parent"

app:layout_constraintHorizontal_bias="0.771"

app:layout_constraintStart_toStartOf="parent"

app:layout_constraintTop_toTopOf="parent"

app:layout_constraintVertical_bias="0.467" />


<TextView

android:id="@+id/dis1"

android:layout_width="wrap_content"

android:layout_height="wrap_content"

android:textSize="15sp"

android:textStyle="italic"

app:layout_constraintBottom_toBottomOf="parent"

app:layout_constraintEnd_toEndOf="parent"

app:layout_constraintHorizontal_bias="0.527"

app:layout_constraintStart_toStartOf="parent"

app:layout_constraintTop_toTopOf="parent"

app:layout_constraintVertical_bias="0.571" />
</androidx.constraintlayout.widget.ConstraintLayout>
```

Java Code:

```java
package com.example.android;


import androidx.appcompat.app.ActionBar;

import androidx.appcompat.app.AppCompatActivity;


import android.content.Intent;
```

```java
import android.content.SharedPreferences;

import android.os.Bundle;

import android.view.View;

import android.widget.Button;

import android.widget.EditText;

import android.widget.TextView;


public class SPandIntent extends AppCompatActivity {


    @Override
    protected void onCreate(Bundle savedInstanceState) {

        super.onCreate(savedInstanceState);

        setContentView(R.layout.activity_spand_intent);

        ActionBar a = getSupportActionBar();

        a.setTitle("Welcome");

        Button sub = findViewById(R.id.sav);

        EditText nam = findViewById(R.id.name);

        EditText email = findViewById(R.id.em);

        EditText phone = findViewById(R.id.ph);


        sub.setOnClickListener(new View.OnClickListener() {

            @Override
            public void onClick(View view) {

                Intent i = new Intent(SPandIntent.this, Sp2.class);

                String user = nam.getText().toString();

                i.putExtra("Name", user);

                String E_mail = email.getText().toString();
```

```
        i.putExtra("Email", E_mail);

        String Phones = phone.getText().toString();

        i.putExtra("Phone", Phones);

        startActivity(i);


        SharedPreferences sharedPreferences = getSharedPreferences("MySharedPref",
MODE_PRIVATE);

        SharedPreferences.Editor myEdit = sharedPreferences.edit();

        myEdit.putString("name", nam.getText().toString());

        myEdit.putString("email", email.getText().toString());

        myEdit.putString("phone", phone.getText().toString());

        myEdit.apply();

      }

    });


  }
}
```

Sp2.java

```
package com.example.android;


import androidx.appcompat.app.ActionBar;

import androidx.appcompat.app.AppCompatActivity;

import android.content.Intent;

import android.content.SharedPreferences;

import android.os.Bundle;

import android.widget.TextView;
```

```java
public class Sp2 extends AppCompatActivity {

    @Override
    protected void onCreate(Bundle savedInstanceState) {

        super.onCreate(savedInstanceState);

        setContentView(R.layout.activity_sp2);


        ActionBar a = getSupportActionBar();

        a.setTitle("Display");

        TextView diss = findViewById(R.id.dis);

        TextView diss1 = findViewById(R.id.dis1);


        Intent i = getIntent();

        String name = i.getStringExtra("Name");

        String email = i.getStringExtra("Email");

        String phone = i.getStringExtra("Phone");

        diss.setText("Name : " + name + "\nEmail : " + email + "\nPhone : " + phone);


        SharedPreferences sharedPreferences = getSharedPreferences("MySharedPref",
MODE_PRIVATE);

        String Name = sharedPreferences.getString("name", "");

        String Email = sharedPreferences.getString("email", "");

        String Phone = sharedPreferences.getString("phone", "");

        diss1.setText("Name : " + Name + "\nEmail : " + Email + "\nPhone : " + Phone);


    }

}
```

Output:
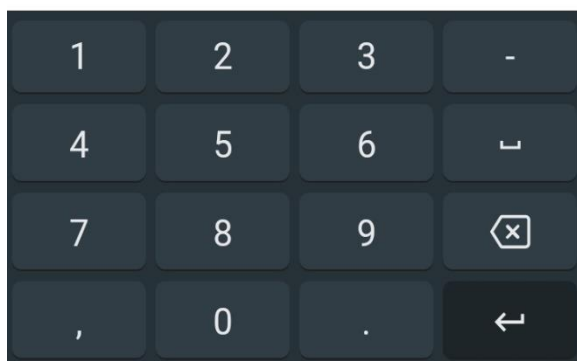
Program no: 07

Aim: Design a simple Calculator using GridLayout and Cascaded LinearLayout

XML Code:

```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:background="#00000000"

    android:layout_gravity="bottom"

    android:gravity="bottom"

    android:orientation="vertical"

    tools:context=".Output">


    <LinearLayout

        android:layout_width="match_parent"

        android:layout_height="wrap_content"

        android:orientation="vertical">


        <LinearLayout

            android:layout_width="match_parent"

            android:layout_height="wrap_content"
```

```
android:layout_gravity="end"

android:orientation="vertical">


    <TextView

        android:layout_width="match_parent"

        android:layout_height="wrap_content"

        android:layout_marginEnd="20dp"

        android:text="18+7"

        android:textAlignment="textEnd"

        android:textColor="@color/black"

        android:textSize="40dp" />


    <TextView

        android:layout_width="match_parent"

        android:layout_height="wrap_content"

        android:layout_marginEnd="20dp"

        android:text="=25"

        android:textAlignment="textEnd"

        android:textColor="@color/black"

        android:textSize="40dp" />

</LinearLayout>


<GridLayout

    android:layout_width="wrap_content"

    android:layout_height="wrap_content"

    android:layout_margin="10dp"
```

```
android:layout_weight="1"

android:columnCount="4"

android:gravity="bottom"

android:rowCount="4">


<Button

    android:id="@+id/b9"

    android:layout_width="50dp"

    android:layout_height="wrap_content"

    android:layout_margin="10dp"

    android:background="@drawable/bg_button"

    android:text="9"

    android:textColor="@color/white"

    android:textSize="25dp" />


<Button

    android:id="@+id/b8"

    android:layout_width="50dp"

    android:layout_height="wrap_content"

    android:layout_margin="10dp"

    android:background="@drawable/bg_button"

    android:text="8"

    android:textColor="@color/white"

    android:textSize="25dp" />


<Button
```

```
android:id="@+id/b7"

android:layout_width="50dp"

android:layout_height="wrap_content"

android:layout_margin="10dp"

android:background="@drawable/bg_button"

android:text="7"

android:textColor="@color/white"

android:textSize="25dp" />


<Button

    android:id="@+id/bmult"

    android:layout_width="wrap_content"

    android:layout_height="wrap_content"

    android:layout_margin="10dp"

    android:background="#F86605"

    android:text="x"

    android:textColor="@color/white"

    android:textSize="18dp" />


<Button

    android:id="@+id/b6"

    android:layout_width="50dp"

    android:layout_height="wrap_content"

    android:layout_margin="10dp"

    android:background="@drawable/bg_button"

    android:text="6"

    android:textColor="@color/white"
```

android:textSize="25dp" />

```xml
<Button

    android:id="@+id/b5"

    android:layout_width="50dp"

    android:layout_height="wrap_content"

    android:layout_margin="10dp"

    android:background="@drawable/bg_button"

    android:text="5"

    android:textColor="@color/white"

    android:textSize="25dp" />


<Button

    android:id="@+id/b4"

    android:layout_width="50dp"

    android:layout_height="wrap_content"

    android:layout_margin="10dp"

    android:background="@drawable/bg_button"

    android:text="4"

    android:textColor="@color/white"

    android:textSize="25dp" />


<Button

    android:id="@+id/bdiv"

    android:layout_height="wrap_content"

    android:layout_margin="10dp"

    android:background="#F86605"
```

```
android:text="/"

android:textColor="@color/white"

android:textSize="25dp" />



<Button

    android:id="@+id/b3"

    android:layout_width="50dp"

    android:layout_height="wrap_content"

    android:layout_margin="10dp"

    android:background="@drawable/bg_button"

    android:text="3"

    android:textColor="@color/white"

    android:textSize="25dp" />



<Button

    android:id="@+id/b2"

    android:layout_width="50dp"

    android:layout_height="wrap_content"

    android:layout_margin="10dp"

    android:background="@drawable/bg_button"

    android:text="2"

    android:textColor="@color/white"

    android:textSize="25dp" />

<Button

    android:id="@+id/b1"

    android:layout_width="50dp"
```

```
        android:layout_height="wrap_content"

        android:layout_margin="10dp"

        android:background="@drawable/bg_button"

        android:text="1"

        android:textColor="@color/white"

        android:textSize="25dp" />


    <Button

        android:id="@+id/bminus"

        android:layout_width="wrap_content"

        android:layout_height="wrap_content"

        android:layout_margin="10dp"

        android:background="#F86605"

        android:text="-"

        android:textColor="@color/white"

        android:textSize="25dp" />


    <Button

        android:id="@+id/b0"

        android:layout_width="50dp"

        android:layout_height="wrap_content"

        android:layout_margin="10dp"

        android:background="@drawable/bg_button"

        android:text="0"

        android:textColor="@color/white"

        android:textSize="25dp" />
```

```xml
<Button

    android:id="@+id/b."

    android:layout_width="50dp"

    android:layout_height="wrap_content"

    android:layout_margin="10dp"

    android:background="@drawable/bg_button"

    android:text="."

    android:textColor="@color/white"

    android:textSize="25dp" />


<Button

    android:id="@+id/bequal"

    android:layout_width="50dp"

    android:layout_height="wrap_content"

    android:layout_margin="10dp"

    android:background="@drawable/bg_button"

    android:text="="

    android:textColor="@color/white"

    android:textSize="25dp" />


<Button

    android:id="@+id/bplus"

    android:layout_width="wrap_content"

    android:layout_height="wrap_content"

    android:layout_margin="10dp"

    android:background="#F86605"

    android:text="+"
```

```
android:textColor="@color/white"

android:textSize="25dp" />

</GridLayout>

</LinearLayout>


</LinearLayout>
```

Java Code:

```
package com.example.edit2text;


import androidx.appcompat.app.AppCompatActivity;


import android.os.Bundle;

import android.widget.TextView;


public class Output extends AppCompatActivity {

    TextView t1;


    @Override

    protected void onCreate(Bundle savedInstanceState) {

        super.onCreate(savedInstanceState);

        setContentView(R.layout.activity_output);


    }

}
```

Output:
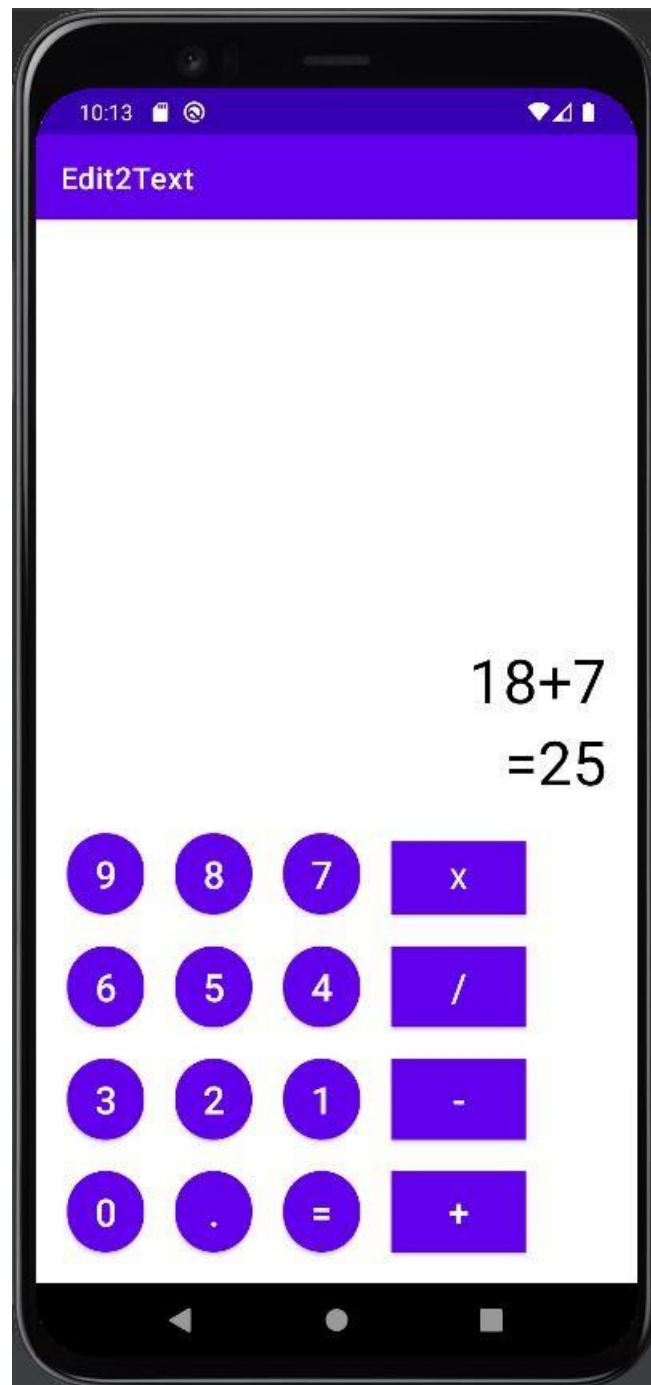
Program no: 09

Aim: Create a Facebook page using RelativeLayout; set properties using .xml file

XML Code:

```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:background="@color/white"
    tools:context=".facebook">
    <LinearLayout
        android:layout_width="match_parent"
        android:layout_height="match_parent"
        android:background="#29487D"
        android:gravity="center|top"
        android:orientation="vertical">

        <LinearLayout
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:layout_marginTop="70dp"
            android:layout_marginBottom="100dp"
            android:orientation="vertical">
```

```xml
    <TextView

        android:layout_width="wrap_content"

        android:layout_height="wrap_content"

        android:fontFamily="@font/arvo"

        android:padding="10dp"

        android:text="facebook"

        android:textColor="@color/white"

        android:textSize="36dp" />


    </LinearLayout>

    <LinearLayout

        android:layout_width="match_parent"

        android:layout_height="wrap_content"

        android:padding="15dp"

        android:orientation="vertical"

        android:layout_margin="20dp">

        <EditText

            android:layout_width="match_parent"

            android:layout_height="wrap_content"

            android:hint="Email or Phone"

            android:layout_marginBottom="30dp"

            android:textColorHint="#594F4F"/>


        <EditText

            android:layout_width="match_parent"

            android:layout_height="wrap_content"
```

```
android:layout_marginBottom="30dp"

android:hint="password"

android:textColorHint="#594F4F"/>


<Button

    android:layout_width="match_parent"

    android:layout_height="wrap_content"

    android:text="Log In"

    android:background="@color/design_default_color_primary"

    android:textAllCaps="false"/>


</LinearLayout>

<LinearLayout

    android:layout_width="match_parent"

    android:layout_height="wrap_content"

    android:orientation="horizontal"

    android:layout_marginTop="180dp"

    android:layout_gravity="bottom"

    android:gravity="center">

    <TextView

        android:layout_width="wrap_content"

        android:layout_height="wrap_content"

        android:gravity="end"

        android:textStyle="bold"

        android:textColor="@color/white"

        android:layout_weight="50"

        android:text="SignUp for Facebook"/>
```

```xml
    <TextView

        android:layout_width="wrap_content"

        android:layout_height="wrap_content"

        android:gravity="end"

        android:textColor="@color/white"

        android:layout_marginEnd="130dp"

        android:layout_weight="1"

        android:textStyle="bold"

        android:text="?"/>

    </LinearLayout>

  </LinearLayout>

</LinearLayout>
```

Java Code:

```java
package com.example.android;


import androidx.appcompat.app.AppCompatActivity;

import android.os.Bundle;


public class facebook extends AppCompatActivity {


  @Override

  protected void onCreate(Bundle savedInstanceState) {

    super.onCreate(savedInstanceState);

    setContentView(R.layout.activity_facebook);

  }

}
```

Output:
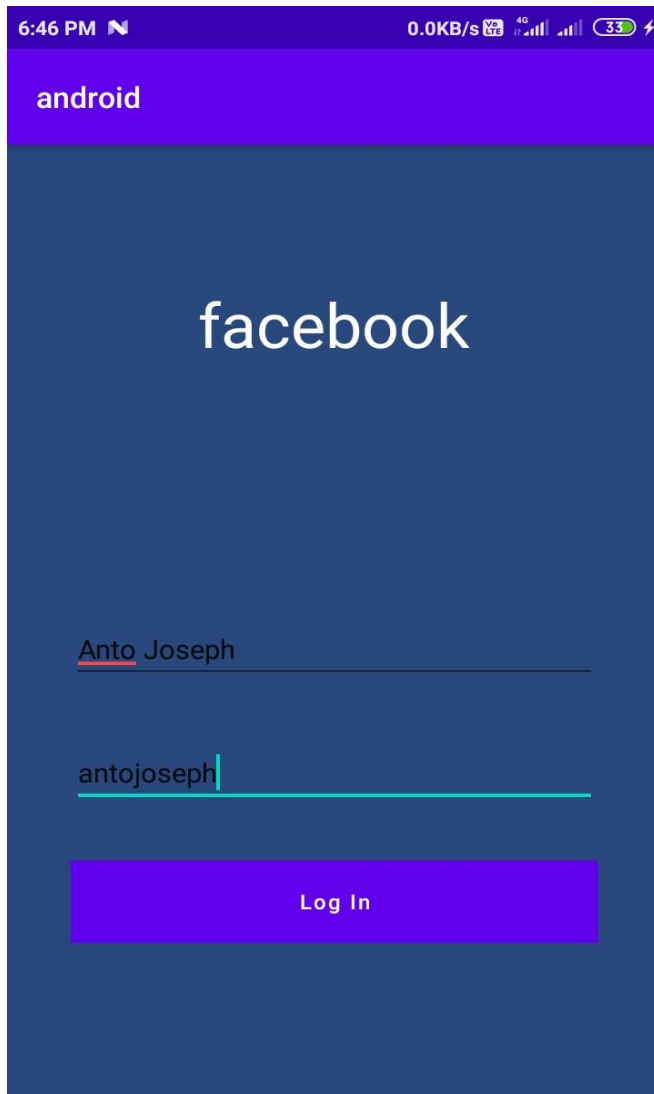
Program no: 09

Aim: Develop an application that toggles image using FrameLayout

XML Code:

```
<?xml version="1.0" encoding="utf-8"?>

<FrameLayout 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:layout_gravity="center"

    android:background="@color/bg2"

    tools:context=".image_toogle">


    <ImageView

        android:id="@+id/image2"

        android:layout_width="wrap_content"

        android:layout_height="wrap_content"

        android:layout_gravity="center"

        android:src="@drawable/vd"

        android:visibility="gone"/>


    <ImageView

        android:id="@+id/image1"

        android:layout_width="wrap_content"
```

```
android:layout_height="wrap_content"

android:layout_gravity="center"

android:src="@drawable/applogo" />


</FrameLayout>
```

Java Code:

```
package com.example.android;


import androidx.appcompat.app.AppCompatActivity;


import android.os.Bundle;

import android.view.View;


import android.widget.ImageView;


public class image_toogle extends AppCompatActivity implements View.OnClickListener {


    ImageView img1, img2;


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


        img1 = findViewById(R.id.image1);

        img2 = findViewById(R.id.image2);
```

```
    img1.setOnClickListener(this);

    img2.setOnClickListener(this);

  }


  public void onClick(View v) {

    int id = v.getId();


    switch (id) {

      case R.id.image1:

        img1.setVisibility(View.GONE);

        img2.setVisibility(View.VISIBLE);

        break;


      case R.id.image2:

        img1.setVisibility(View.VISIBLE);

        img2.setVisibility(View.GONE);

        break;

    }

  }


}
```

Program no: 10

Aim: Implement Adapters and perform exception handling

XML Code:

```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=".exception">

    <TextView

        android:id="@+id/textView"

        android:layout_width="wrap_content"

        android:layout_height="wrap_content"

        android:text="TextView"/>

</LinearLayout>
```

Java Code:

package com.example.android;

import androidx.appcompat.app.AppCompatActivity;

import android.os.Bundle;

import android.widget.TextView;

import android.widget.Toast;

public class exception extends AppCompatActivity {

   TextView textView;

   @Override

   protected void onCreate(Bundle savedInstanceState) {

     super.onCreate(savedInstanceState);

     setContentView(R.layout.activity_exception);

     try {

      textView.setText("Hello there...");

     } catch (Exception e) {

      Toast.makeText(this, e.getMessage(), Toast.LENGTH_SHORT).show();

     }

   }

}

Output:

Program no: 11

Aim: Implement Intent to navigate between multiple activities

XML Code:

```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"

    android:onClick="callActivity"

    tools:context=".intent_activity">


    <EditText

        android:id="@+id/name"

        android:layout_width="wrap_content"

        android:layout_height="wrap_content"

        android:ems="10"

        android:hint="Name"

        android:inputType="textPersonName"

        app:layout_constraintBottom_toBottomOf="parent"

        app:layout_constraintEnd_toEndOf="parent"

        app:layout_constraintHorizontal_bias="0.437"

        app:layout_constraintStart_toStartOf="parent"

        app:layout_constraintTop_toTopOf="parent"
```

```
    app:layout_constraintVertical_bias="0.148" />


    <EditText

        android:id="@+id/address"

        android:layout_width="wrap_content"

        android:layout_height="wrap_content"

        android:ems="10"

        android:hint="Address"

        android:inputType="textPersonName"

        app:layout_constraintBottom_toBottomOf="parent"

        app:layout_constraintEnd_toEndOf="parent"

        app:layout_constraintHorizontal_bias="0.437"

        app:layout_constraintStart_toStartOf="parent"

        app:layout_constraintTop_toTopOf="parent"

        app:layout_constraintVertical_bias="0.313" />


    <EditText

        android:id="@+id/email"

        android:layout_width="wrap_content"

        android:layout_height="wrap_content"

        android:ems="10"

        android:hint="Email"

        android:inputType="textPersonName"

        app:layout_constraintBottom_toBottomOf="parent"

        app:layout_constraintEnd_toEndOf="parent"

        app:layout_constraintHorizontal_bias="0.437"

        app:layout_constraintStart_toStartOf="parent"
```

```
app:layout_constraintTop_toTopOf="parent"

app:layout_constraintVertical_bias="0.475" />


<Button

android:id="@+id/button"

android:layout_width="wrap_content"

android:layout_height="wrap_content"

android:text="Submit"

android:onClick="callActivity"

app:layout_constraintBottom_toBottomOf="parent"

app:layout_constraintEnd_toEndOf="parent"

app:layout_constraintHorizontal_bias="0.454"

app:layout_constraintStart_toStartOf="parent"

app:layout_constraintTop_toTopOf="parent"

app:layout_constraintVertical_bias="0.609" />


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

Display.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=".intent_act2">
```

```xml
<TextView

    android:id="@+id/view3"

    android:layout_width="189dp"

    android:layout_height="36dp"

    android:textAlignment="center"

    app:layout_constraintBottom_toBottomOf="parent"

    app:layout_constraintEnd_toEndOf="parent"

    app:layout_constraintHorizontal_bias="0.459"

    app:layout_constraintStart_toStartOf="parent"

    app:layout_constraintTop_toTopOf="parent"

    app:layout_constraintVertical_bias="0.398" />


<TextView

    android:id="@+id/view1"

    android:layout_width="189dp"

    android:layout_height="36dp"

    android:textAlignment="center"

    app:layout_constraintBottom_toBottomOf="parent"

    app:layout_constraintEnd_toEndOf="parent"

    app:layout_constraintHorizontal_bias="0.459"

    app:layout_constraintStart_toStartOf="parent"

    app:layout_constraintTop_toTopOf="parent"

    app:layout_constraintVertical_bias="0.22" />


<TextView

    android:id="@+id/view2"

    android:layout_width="189dp"
```

android:layout_height="36dp"

android:textAlignment="center"

app:layout_constraintBottom_toBottomOf="parent"

app:layout_constraintEnd_toEndOf="parent"

app:layout_constraintHorizontal_bias="0.459"

app:layout_constraintStart_toStartOf="parent"

app:layout_constraintTop_toTopOf="parent"

app:layout_constraintVertical_bias="0.306" />

</androidx.constraintlayout.widget.ConstraintLayout>

Java Code:

package com.example.android;

import androidx.appcompat.app.AppCompatActivity;

import android.content.Intent;

import android.os.Bundle;

import android.view.View;

import android.widget.Button;

import android.widget.EditText;

public class intent_activity extends AppCompatActivity {

　　Button b1;

　　@Override

　　protected void onCreate(Bundle savedInstanceState) {

　　　　super.onCreate(savedInstanceState);

```java
        setContentView(R.layout.activity_intent);


    }
    public void callActivity(View view) {

        Intent i = new Intent(intent_activity.this, intent_act2.class);

        final EditText editText1 = (EditText)findViewById(R.id.name);


        String msg = editText1.getText().toString();

        final EditText editText2 = (EditText)findViewById(R.id.address);

        String add = editText2.getText().toString();

        final EditText editText3 = (EditText)findViewById(R.id.email);

        String em = editText3.getText().toString();


        i.putExtra("Value1", msg);

        i.putExtra("Value2", add);

        i.putExtra("Value3", em);

        startActivity(i);

    }
}
```

Display.java

```java
package com.example.vaidyakare;


import androidx.appcompat.app.AppCompatActivity;


import android.os.Bundle;

import android.widget.TextView;
```

```java
public class intent_act2 extends AppCompatActivity {

    TextView view1;

    TextView view2;

    TextView view3;


    @Override

    protected void onCreate(Bundle savedInstanceState) {

        super.onCreate(savedInstanceState);

        setContentView(R.layout.activity_intent_act2);


        view1 = (TextView) findViewById(R.id.view1);

        view2 = (TextView) findViewById(R.id.view2);

        view3 = (TextView) findViewById(R.id.view3);


        Bundle extras = getIntent().getExtras();


        String value1 = extras.getString("Value1");

        String value2 = extras.getString("Value2");

        String value3 = extras.getString("Value3");


        view1.setText(value1);

        view2.setText(value2);

        view3.setText(value3);

    }

}
```
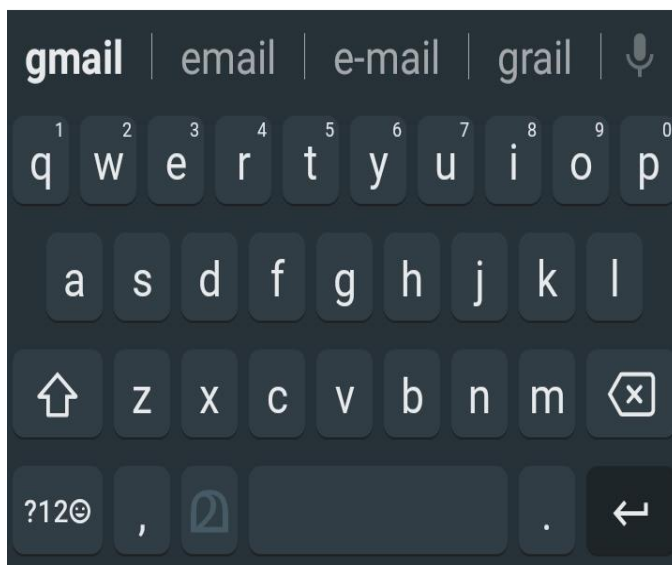
Program no: 12

Aim: Develop an application that works with explicit intents

XML Code:

```
<?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=".explicit">


    <Button

        android:id="@+id/cm"

        android:layout_width="wrap_content"

        android:layout_height="wrap_content"

        android:text="Refer Google"

        app:layout_constraintBottom_toBottomOf="parent"

        app:layout_constraintEnd_toEndOf="parent"

        app:layout_constraintStart_toStartOf="parent"

        app:layout_constraintTop_toTopOf="parent" />


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

Java Code:

```java
package com.example.android;

import androidx.appcompat.app.ActionBar;

import androidx.appcompat.app.AppCompatActivity;

import android.content.Intent;

import android.net.Uri;

import android.net.UrlQuerySanitizer;

import android.os.Bundle;

import android.view.View;

import android.widget.Button;


public class explicit extends AppCompatActivity {

    @Override

    protected void onCreate(Bundle savedInstanceState) {

        super.onCreate(savedInstanceState);

        setContentView(R.layout.activity_explicit);

        Button click = findViewById(R.id.cm);

        click.setOnClickListener(new View.OnClickListener() {

            @Override

            public void onClick(View view) {

                Intent j = new Intent(Intent.ACTION_VIEW,
Uri.parse("https://www.google.com/"));

                startActivity(j);

            }

        });

    }

}
```

Output:
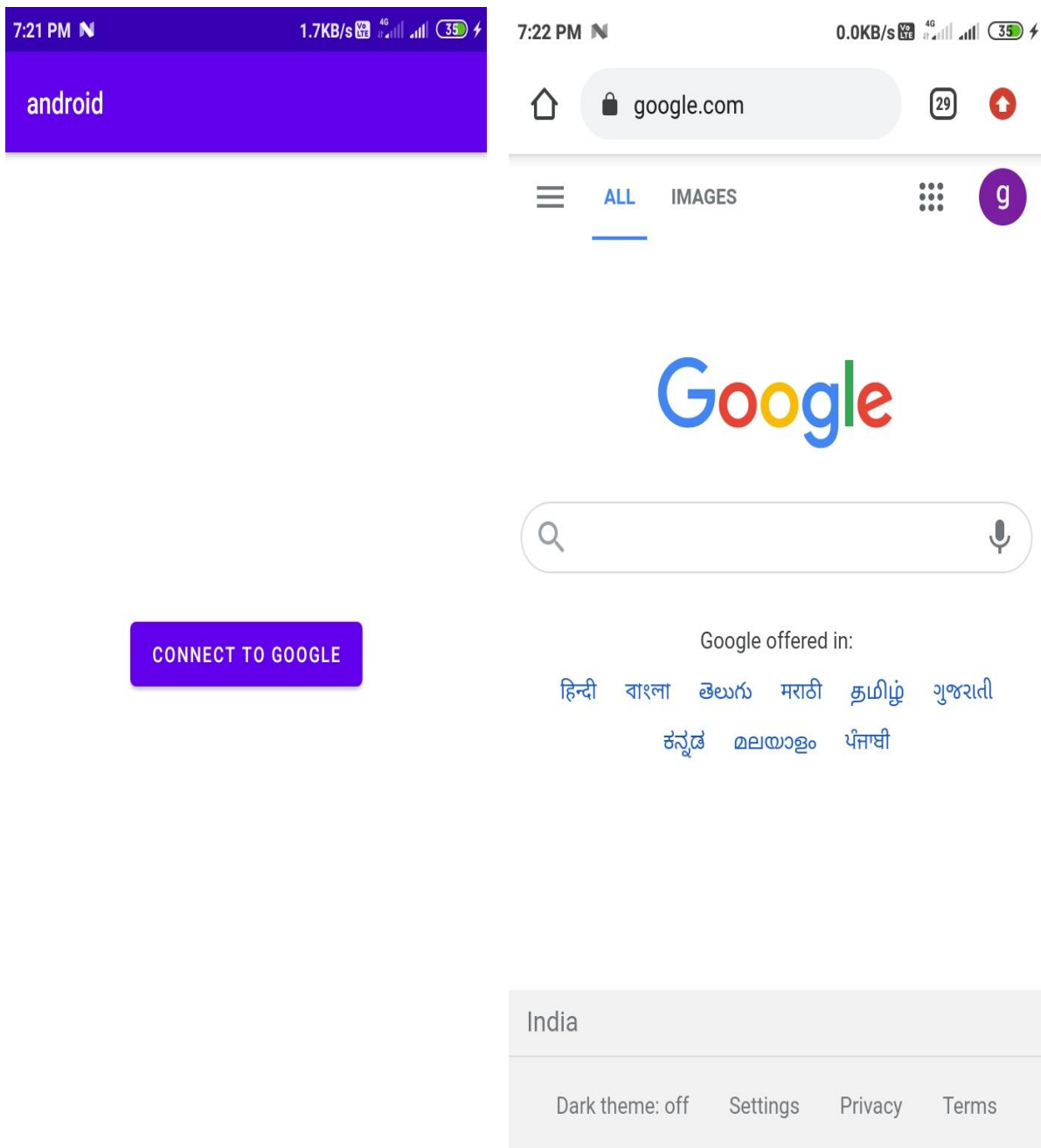
Program no: 13

Aim: Implement Options Menu to navigate to activities

XML Code:

```xml
<?xml version="1.0" encoding="utf-8"?>

<menu xmlns:android="http://schemas.android.com/apk/res/android">

    <item android:id="@+id/item1" android:title="Home"/>

    <item android:id="@+id/item2" android:title="Settings"/>

    <item android:id="@+id/item3" android:title="About"/>

    <item android:id="@+id/item4" android:title="Help"/>

    <item android:id="@+id/item5" android:title="LogOut"/>

</menu>
```

```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=".menu_bar">

    <TextView

        android:layout_width="wrap_content"

        android:layout_height="wrap_content"

        android:text="Welcome Home..!"
```

```
app:layout_constraintBottom_toBottomOf="parent"

app:layout_constraintLeft_toLeftOf="parent"

app:layout_constraintRight_toRightOf="parent"

app:layout_constraintTop_toTopOf="parent" />
```

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

Java Code:

```
package com.example.vaidyakare;


import androidx.appcompat.app.AppCompatActivity;


import android.annotation.SuppressLint;

import android.os.Bundle;

import android.view.Menu;


import android.view.MenuItem;

import android.widget.Toast;


public class menu_bar extends AppCompatActivity {


    @Override

    protected void onCreate(Bundle savedInstanceState) {

        super.onCreate(savedInstanceState);

        setContentView(R.layout.activity_menu_bar);


    }
```

```java
@Override

public boolean onCreateOptionsMenu(Menu menu) {

    getMenuInflater().inflate(R.menu.menu_list, menu);


    return true;


}


@Override

public boolean onOptionsItemSelected(MenuItem item) {


    switch (item.getItemId()) {


        case R.id.item1:

            Toast.makeText(getApplicationContext(), "Home clicked",
Toast.LENGTH_SHORT).show();


            return true;


        case R.id.item2:

            Toast.makeText(getApplicationContext(), "Settings clicked",
Toast.LENGTH_SHORT).show();


            return true;


        case R.id.item3:
```

```java
                Toast.makeText(getApplicationContext(), "About clicked",
Toast.LENGTH_SHORT).show();


            return true;


        case R.id.item4:
                Toast.makeText(getApplicationContext(), "Help clicked",
Toast.LENGTH_SHORT).show();


            return true;


        case R.id.item5:
                Toast.makeText(getApplicationContext(), "Logout clicked",
Toast.LENGTH_SHORT).show();


            return true;


        default:
            return super.onOptionsItemSelected(item);
    }


  }


}
```

Output:
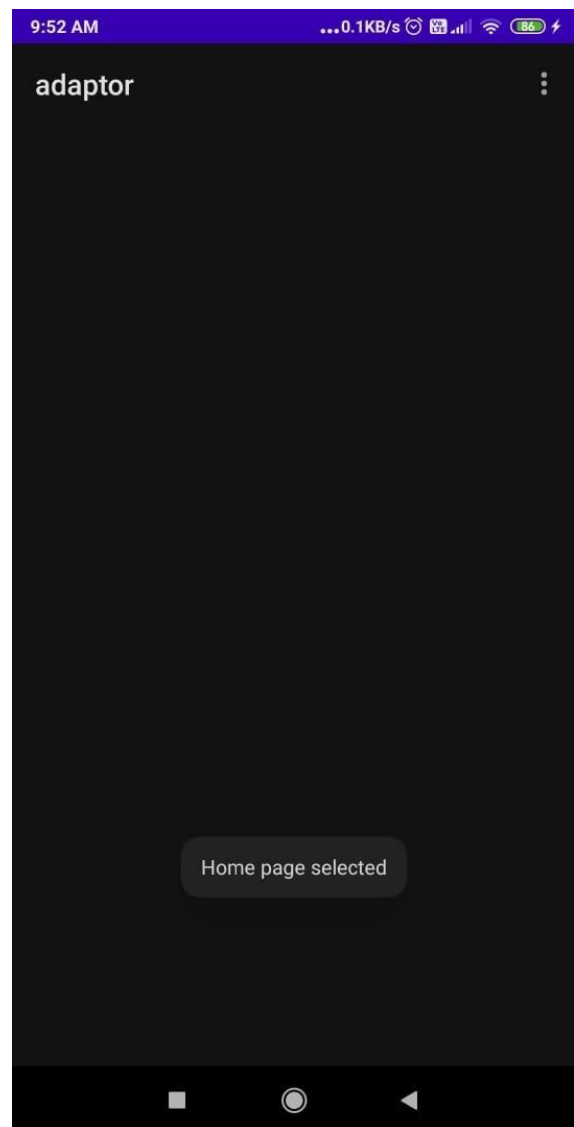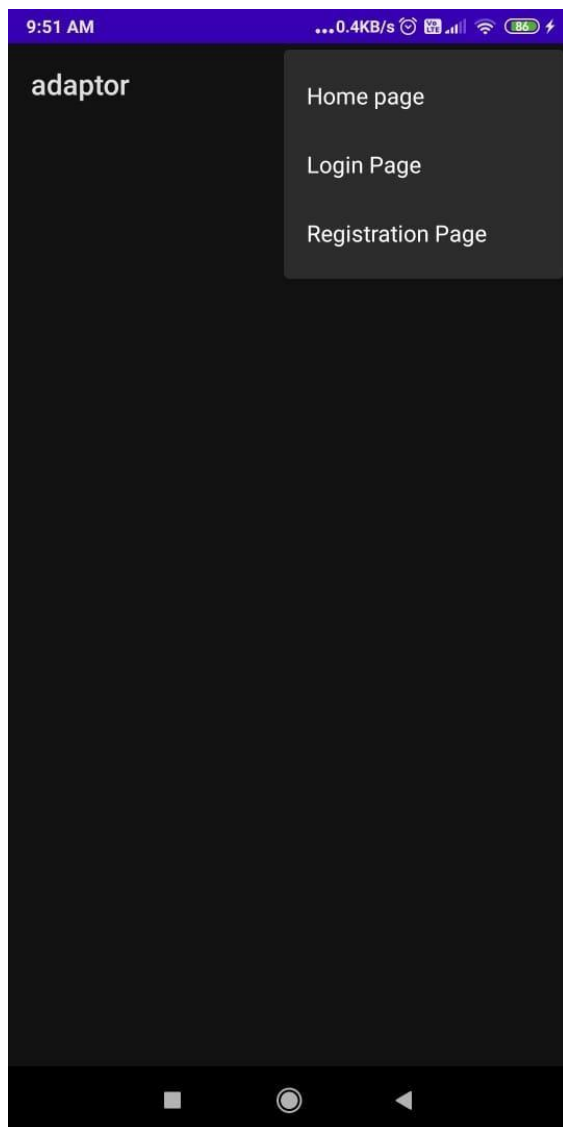
Program no: 14

Aim: Develop an application that uses ArrayAdapter with ListView

XML Code:

```
<?xml version="1.0" encoding="utf-8"?>

<LinearLayout

    xmlns:android="http://schemas.android.com/apk/res/android"

    xmlns:tools="http://schemas.android.com/tools"

    xmlns:app="http://schemas.android.com/apk/res-auto"


    android:layout_width="match_parent"

    android:layout_height="match_parent"

    tools:context=".arrayAdapter">


    <ListView

        android:id="@+id/mobile_list"

        android:layout_width="match_parent"

        android:layout_height="wrap_content" >

    </ListView>


</LinearLayout>
```

Java Code:

package com.example.vaidyakare;

import androidx.appcompat.app.AppCompatActivity;

import android.os.Bundle;

import android.view.View;

import android.widget.AdapterView;

import android.widget.ArrayAdapter;

import android.widget.ListView;

import android.widget.TextView;

import android.widget.Toast;

public class arrayAdapter extends AppCompatActivity implements AdapterView.OnItemClickListener {

   ListView l;

   String[] days = {"Sunday", "Monday", "Tuesday", "Wednesday", "Thursday", "Friday", "Saturday"};

   @Override

   protected void onCreate(Bundle savedInstanceState) {

     super.onCreate(savedInstanceState);

     setContentView(R.layout.activity_array_adapter);

```java
        l = findViewById(R.id.mobile_list);

        ArrayAdapter<String> adapter = new ArrayAdapter<String>(this,
R.layout.support_simple_spinner_dropdown_item, days);


    l.setAdapter(adapter);

    l.setOnItemClickListener(this);


  }


  @Override

  public void onItemClick(AdapterView<?> adapterView, View view, int i, long l) {

    TextView temp = (TextView) view;


    Toast.makeText(this, "You clicked " + temp.getText() + " at " + i,
Toast.LENGTH_LONG).show();


  }


}
```
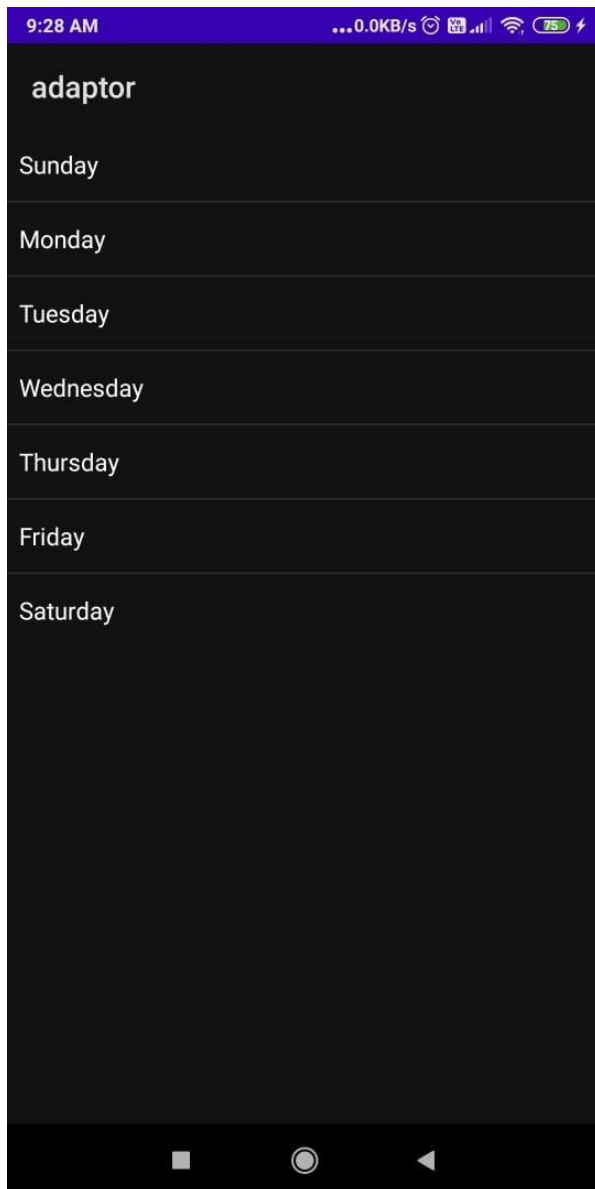
Output:
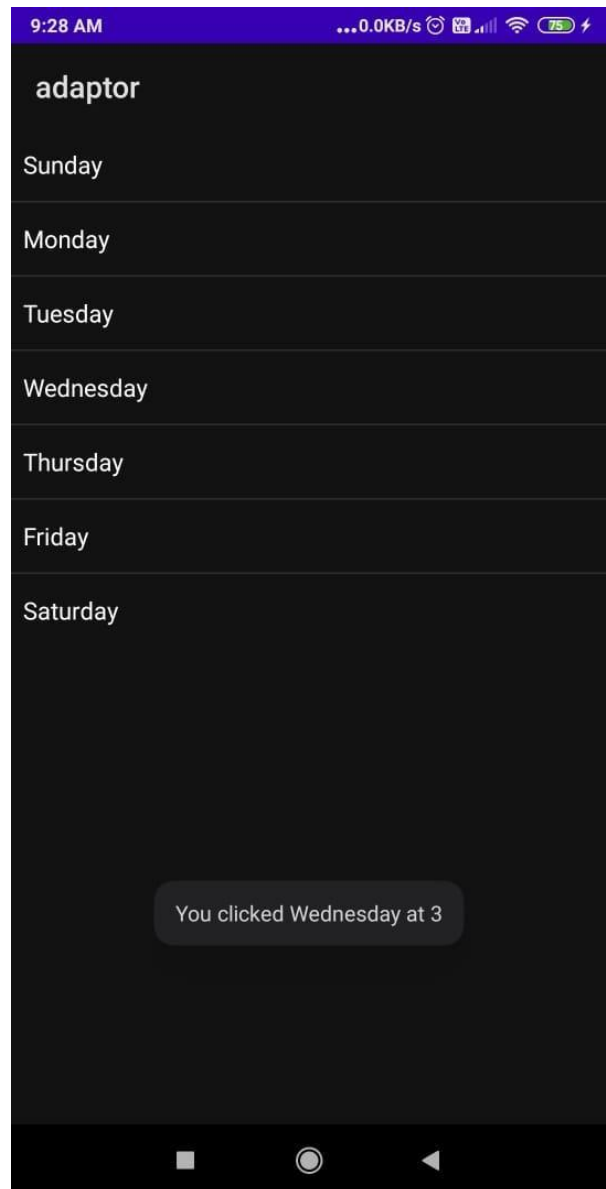
Program no: 15

Aim: Program to develop an application that use GridView with images and display Alert box on selection

XML Code:

Activity_main.xml:

```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"

    tools:context=".MainActivity" >


    <GridView

        android:numColumns="auto_fit"

        android:gravity="center"

        android:columnWidth="100dp"

        android:stretchMode="columnWidth"

        android:layout_width="fill_parent"

        android:layout_height="fill_parent"

        android:id="@+id/grid"

        />

</LinearLayout>
```

grid_single.xml:

```xml
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"

    xmlns:tools="http://schemas.android.com/tools"

    android:layout_width="wrap_content"

    android:layout_height="wrap_content"

    android:padding="5dp" >


    <ImageView

        android:id="@+id/grid_image"

        android:layout_width="50dp"

        android:layout_height="50dp">

    </ImageView>


    <TextView

        android:id="@+id/grid_text"

        android:layout_width="wrap_content"

        android:layout_height="wrap_content"

        android:layout_marginTop="15dp"

        android:textSize="9sp" >

    </TextView>

</LinearLayout>
```

Java Code:

```java
package com.example.sqliteapplication;

import android.os.Bundle;
import android.app.Activity;
import android.view.View;
import android.widget.AdapterView;
import android.widget.GridView;
import android.widget.Toast;

import com.example.sqliteapplication.CustomGrid;
import com.example.sqliteapplication.R;

public class MainActivity extends Activity {
    GridView grid;
    String[] web = {
            "Apple",
            "Smasung",
            "Redmi",
            "vivo",
    } ;
    int[] imageId = {
            R.drawable.a,
            R.drawable.b,
            R.drawable.c,



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

        CustomGrid adapter = new CustomGrid(MainActivity.this, web, imageId);
        grid=(GridView)findViewById(R.id.grid);
        grid.setAdapter(adapter);
        grid.setOnItemClickListener(new AdapterView.OnItemClickListener() {
```

```
@Override
    public void onItemClick(AdapterView<?> parent, View view,
                    int position, long id) {
        Toast.makeText(MainActivity.this, "You Clicked at " +web[+
            position], Toast.LENGTH_SHORT).show();


    }
  });

}

}
```

customGrid

```
package com.example.sqliteapplication;
import android.content.Context;
import android.view.LayoutInflater;
import android.view.View;
import android.view.ViewGroup;
import android.widget.BaseAdapter;
import android.widget.ImageView;
import android.widget.TextView;

public class CustomGrid extends BaseAdapter{
    private Context mContext;
    private final String[] web;
    private final int[] Imageid;

    public CustomGrid(Context c,String[] web,int[] Imageid ) {
        mContext = c;
        this.Imageid = Imageid;
        this.web = web;
    }

    @Override
    public int getCount() {
// TODO Auto-generated method stub
        return web.length;
    }

    @Override
    public Object getItem(int position) {
// TODO Auto-generated method stub
        return null;
```

```
    }

    @Override
    public long getItemId(int position) {
// TODO Auto-generated method stub
        return 0;
    }

    @Override
    public View getView(int position, View convertView, ViewGroup parent) {
// TODO Auto-generated method stub
        View grid;
        LayoutInflater inflater = (LayoutInflater) mContext
            .getSystemService(Context.LAYOUT_INFLATER_SERVICE);

        if (convertView == null) {
            grid = new View(mContext);
            grid = inflater.inflate(R.layout.grid_single, null);
            TextView textView = (TextView) grid.findViewById(R.id.grid_text);
            ImageView imageView =
                (ImageView)grid.findViewById(R.id.grid_image);
            textView.setText(web[position]);
            imageView.setImageResource(Imageid[position]);
        } else {
            grid = (View) convertView;
        }

        return grid;
    }
}
```

Output:
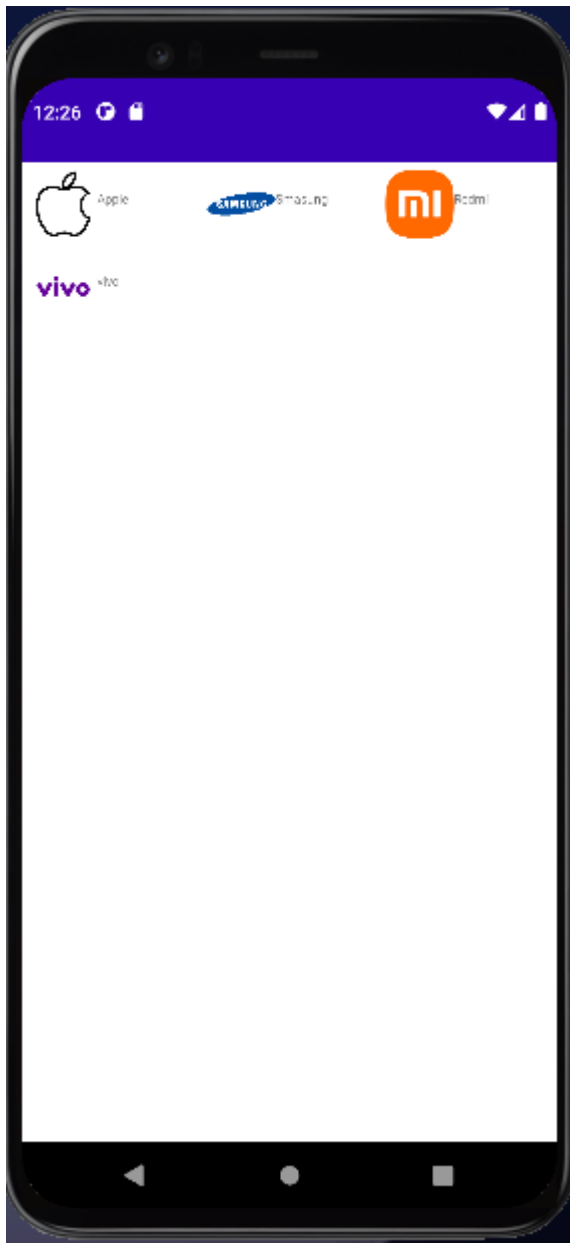
Program no:16

Aim: Program to develop an application that implements Spinner component and perform event handling

XML Code:

```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">


    <Spinner

        android:id="@+id/spinner"

        android:layout_height="50dp"

        android:layout_width="160dp"

        android:layout_marginEnd="10dp"

        android:layout_marginStart="10dp"

        android:layout_marginBottom="10dp"

        android:layout_marginTop="10dp"

        app:layout_constraintStart_toStartOf="parent"

        app:layout_constraintTop_toTopOf="parent"/>


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

Java Code:

```java
package com.example.spinner;

import androidx.appcompat.app.AppCompatActivity;

import android.os.Bundle;

import android.view.View;

import android.widget.AdapterView;

import android.widget.ArrayAdapter;

import android.widget.Spinner;

import android.widget.Toast;


public class MainActivity extends AppCompatActivity implements
    AdapterView.OnItemSelectedListener {
  String[] country = { "India", "USA", "China", "Japan", "Other"};


  @Override
  protected void onCreate(Bundle savedInstanceState) {
    super.onCreate(savedInstanceState);
    setContentView(R.layout.activity_main);
    //Getting the instance of Spinner and applying OnItemSelectedListener on it
    Spinner spin = (Spinner) findViewById(R.id.spinner);
    spin.setOnItemSelectedListener(this);


    //Creating the ArrayAdapter instance having the country list
```

```
    ArrayAdapter aa = new
ArrayAdapter(this,android.R.layout.simple_spinner_item,country);


aa.setDropDownViewResource(android.R.layout.simple_spinner_dropdown_ite
m);

    //Setting the ArrayAdapter data on the Spinner

    spin.setAdapter(aa);


    }



    //Performing action onItemSelected and onNothing selected

    @Override

    public void onItemSelected(AdapterView<?> arg0, View arg1, int position,
long id) {

        Toast.makeText(getApplicationContext(),country[position] ,
Toast.LENGTH_LONG).show();

    }

    @Override

    public void onNothingSelected(AdapterView<?> arg0) {

        // TODO Auto-generated method stub

    }
}
```

Output:
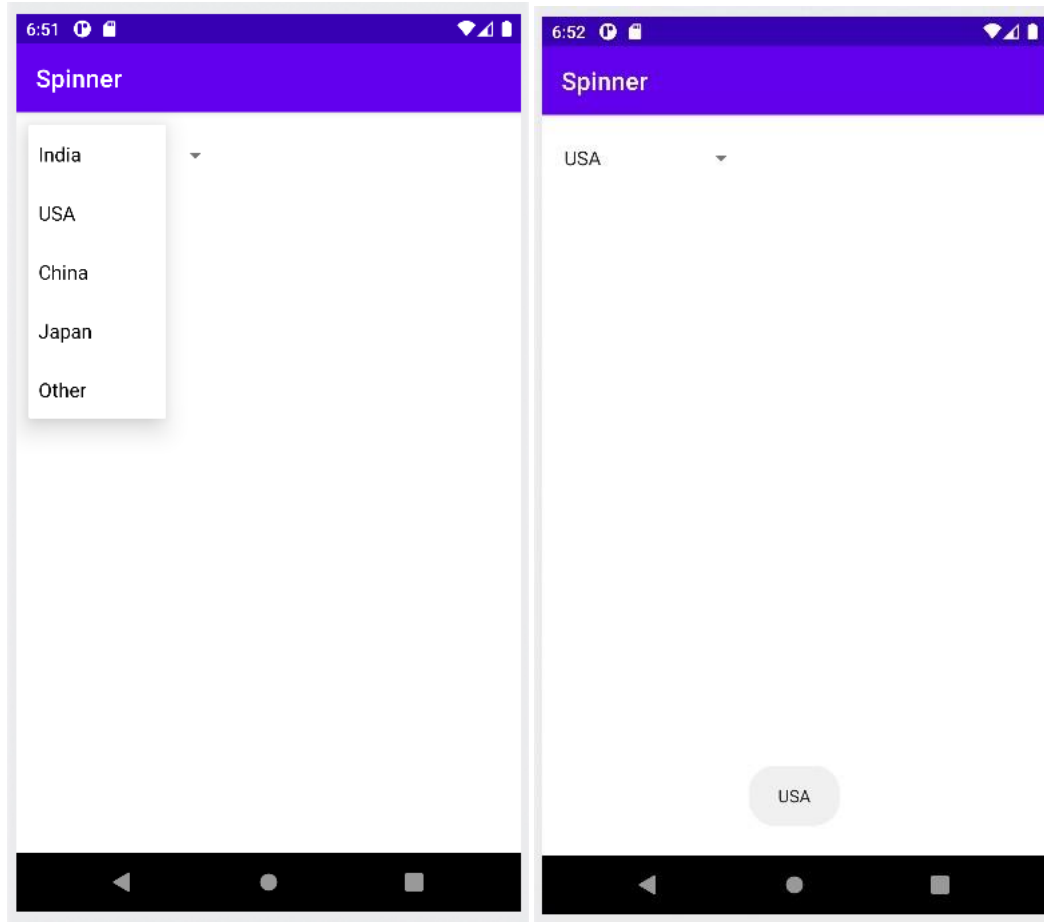
Program no:17

Aim: Apply themes via code and manifest file

XML Code:

```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">


    <EditText

        android:id="@+id/editTextTextPersonName"

        android:layout_width="wrap_content"

        android:layout_height="wrap_content"

        android:ems="10"

        android:inputType="textPersonName"

        android:text="Name"

        app:layout_constraintBottom_toBottomOf="parent"

        app:layout_constraintTop_toTopOf="parent"

        tools:layout_editor_absoluteX="100dp" />

</androidx.constraintlayout.widget.ConstraintLayout>

<?xml version="1.0" encoding="utf-8"?>

<manifest xmlns:android="http://schemas.android.com/apk/res/android"
```

```xml
        package="com.example.themes">


    <application

        android:allowBackup="true"

        android:icon="@mipmap/ic_launcher"

        android:label="@string/app_name"

        android:roundIcon="@mipmap/ic_launcher_round"

        android:supportsRtl="true"

        android:theme="@style/Theme.newstyle">

        <activity

            android:name=".MainActivity"

            android:exported="true">

            <intent-filter>

                <action android:name="android.intent.action.MAIN" />


                <category android:name="android.intent.category.LAUNCHER" />

            </intent-filter>

        </activity>

    </application>

</manifest>


<?xml version="1.0" encoding="utf-8"?>

<resources>
```

```xml
    <color name="teal">#FF018786</color>

    <color name="black">#FF000000</color>

    <color name="yellow">#EC971B</color>

    <color name="red">#F80F0F</color>

</resources>


<resources xmlns:tools="http://schemas.android.com/tools">

    <!-- Base application theme. -->

    <style name="Theme.newstyle"
parent="Theme.MaterialComponents.DayNight.DarkActionBar">

        <item name="colorPrimary">@color/black</item>

        <item name="colorPrimaryDark">@color/yellow</item>

        <item name="colorAccent">@color/teal</item>

        <item name="android:textColorPrimary">@color/red</item>

    </style>

</resources>
```

Java Code:

```java
package com.example.themes;


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:
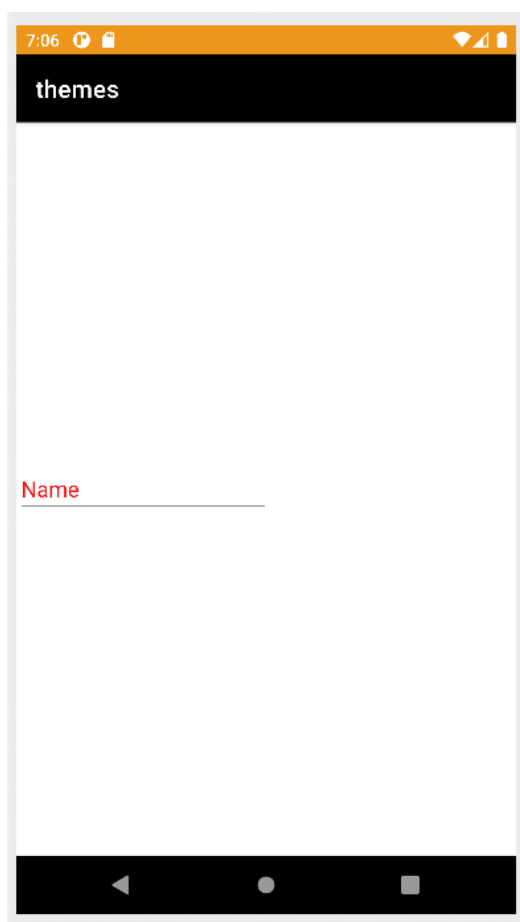
Program no:18

Aim: Develop application using Fragments

XML Code:

```
<?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">


    <RelativeLayout

        android:layout_width="match_parent"

        android:layout_height="0dp"

        android:layout_weight="1">


        <Button

            android:id="@+id/b1"

            android:layout_width="160dp"

            android:layout_height="50dp"

            android:layout_alignParentBottom="true"

            android:layout_marginStart="30dp"
```

```
            android:layout_marginBottom="30dp"

            android:backgroundTint="#2196F3"

            android:text="Fragment1" />


    <Button

        android:id="@+id/b2"

        android:layout_width="160dp"

        android:layout_height="50dp"

        android:layout_alignParentRight="true"

        android:layout_alignParentBottom="true"

        android:layout_marginStart="30dp"

        android:layout_marginBottom="30dp"

        android:backgroundTint="#FFC107"

        android:text="Fragment2" />


</RelativeLayout>


<FrameLayout

    android:id="@+id/frameLayout"

    android:layout_width="match_parent"

    android:layout_height="0dp"

    android:layout_weight="4"

    android:background="@color/purple_200"/>
```

```
</LinearLayout>


<?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"

    android:background="@color/teal_200"

    tools:context=".Fragment1">


    <!-- TODO: Update blank fragment layout -->
    <TextView

        android:layout_width="wrap_content"

        android:layout_height="wrap_content"

        android:layout_centerInParent="true"

        android:background="#FFEB3B"

        android:text="Fragment1"

        android:textSize="30dp" />


</RelativeLayout>

<?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"

android:background="#FFEB3B"

tools:context=".Fragment2">


<!-- TODO: Update blank fragment layout -->

<TextView

    android:layout_width="wrap_content"

    android:layout_height="wrap_content"

    android:layout_centerInParent="true"

    android:background="#FAA3C1"

    android:text="Fragment2"

    android:textSize="30dp" />


</RelativeLayout>
```

Java Code:

```
package com.example.fragment;


import androidx.appcompat.app.AppCompatActivity;

import androidx.fragment.app.Fragment;

import androidx.fragment.app.FragmentManager;

import androidx.fragment.app.FragmentTransaction;


import android.os.Bundle;
```

```java
import android.view.View;

import android.widget.Button;


public class MainActivity extends AppCompatActivity {

    Button b1,b2;


    @Override

    protected void onCreate(Bundle savedInstanceState) {

        super.onCreate(savedInstanceState);

        setContentView(R.layout.activity_main);


        b1=findViewById(R.id.b1);

        b2=findViewById(R.id.b2);


        b1.setOnClickListener(new View.OnClickListener() {

            @Override

            public void onClick(View v) {

                replaceFragment(new Fragment1());

            }

        });

        b2.setOnClickListener(new View.OnClickListener() {

            @Override

            public void onClick(View v) {

                replaceFragment(new Fragment2());
```

```
        }

    });

  }


  private void replaceFragment(Fragment fragment) {

    FragmentManager fragmentManager=getSupportFragmentManager();

    FragmentTransaction
fragmentTransaction=fragmentManager.beginTransaction();

    fragmentTransaction.replace(R.id.frameLayout,fragment);

    fragmentTransaction.commit();

  }

}


package com.example.fragment;

import android.os.Bundle;

import androidx.fragment.app.Fragment;

import android.view.LayoutInflater;

import android.view.View;

import android.view.ViewGroup;


public class Fragment1 extends Fragment {


  @Override

  public View onCreateView(LayoutInflater inflater, ViewGroup container,
```

```
                    Bundle savedInstanceState) {

    // Inflate the layout for this fragment

    return inflater.inflate(R.layout.fragment_1, container, false);

  }

}


package com.example.fragment;


import android.os.Bundle;


import androidx.fragment.app.Fragment;


import android.view.LayoutInflater;

import android.view.View;

import android.view.ViewGroup;

public class Fragment2 extends Fragment {


  @Override

  public View onCreateView(LayoutInflater inflater, ViewGroup container,

                    Bundle savedInstanceState) {

    // Inflate the layout for this fragment

    return inflater.inflate(R.layout.fragment_2, container, false);

  }

}
```

Output:
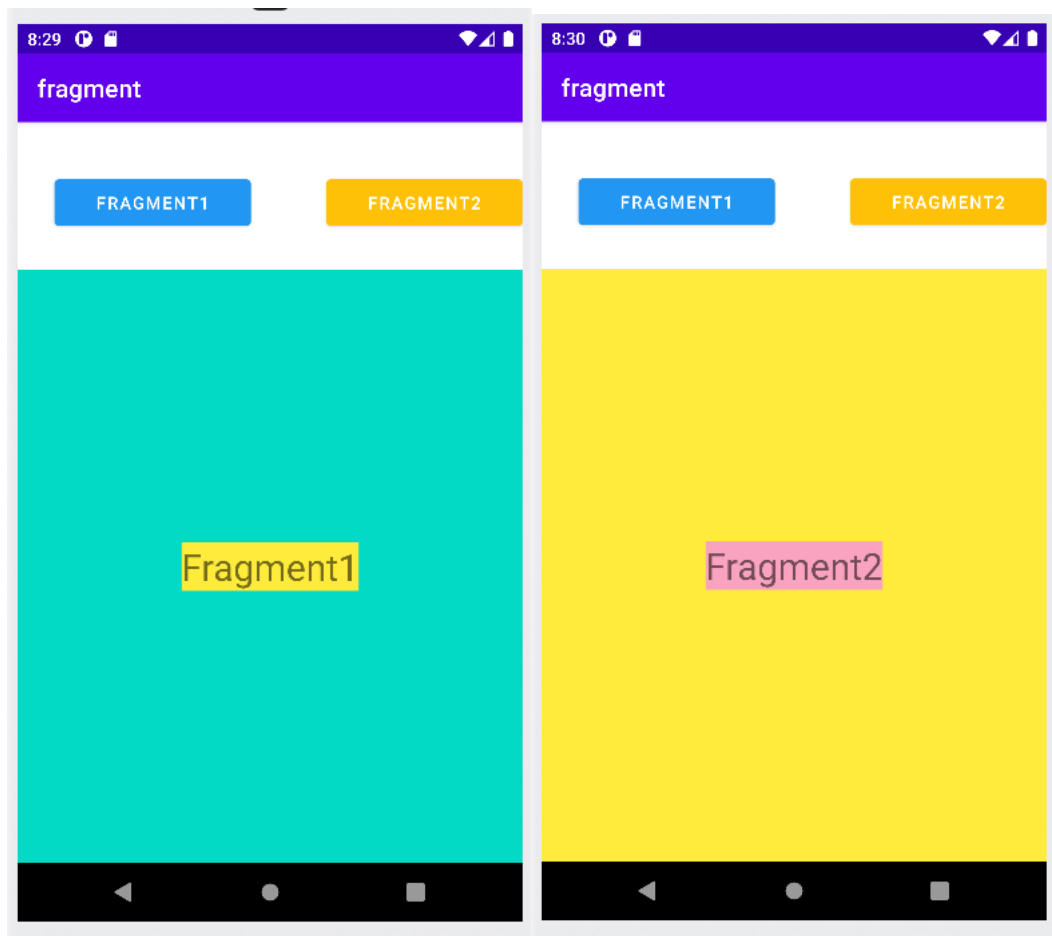
Program no:19

Aim: Implement Navigation drawer

XML Code:

```xml
<?xml version="1.0" encoding="utf-8"?>

<androidx.drawerlayout.widget.DrawerLayout

    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:id="@+id/drawer">

     <LinearLayout

        android:layout_width="match_parent"

        android:layout_height="match_parent">

        <TextView

            android:layout_width="match_parent"

            android:layout_height="match_parent"

            android:text="Welcome"

            android:textSize="30dp">

        </TextView>

    </LinearLayout>

    <com.google.android.material.navigation.NavigationView

        android:layout_width="match_parent"
```

```
android:layout_height="match_parent"

app:menu="@menu/menu"

android:id="@+id/navigation_view"

android:layout_gravity="start">

</com.google.android.material.navigation.NavigationView>

</androidx.drawerlayout.widget.DrawerLayout>
```

```
<?xml version="1.0" encoding="utf-8"?>

<menu xmlns:android="http://schemas.android.com/apk/res/android">

    <item

        android:id="@+id/account"

        android:title="My account"/>

    <item

        android:id="@+id/profile"

        android:title="My profile"/>

    <item

        android:id="@+id/logout"

        android:title="log out"/>

</menu>
```

Java Code:

```
package com.example.navigation;


import androidx.annotation.NonNull;

import androidx.appcompat.app.ActionBarDrawerToggle;
```

```java
import  androidx.appcompat.app.AppCompatActivity;

import  androidx.drawerlayout.widget.DrawerLayout;

import android.os.Bundle;

import android.view.MenuItem;

import android.widget.Toast;

import com.google.android.material.navigation.NavigationView;

public class MainActivity extends AppCompatActivity implements

    NavigationView.OnNavigationItemSelectedListener {

  public DrawerLayout drawerLayout;

  public ActionBarDrawerToggle actionBarDrawerToggle;

  @Override

  protected void onCreate(Bundle savedInstanceState) {

    super.onCreate(savedInstanceState);

    setContentView(R.layout.activity_main);

    drawerLayout = findViewById(R.id.drawer);

    actionBarDrawerToggle = new
ActionBarDrawerToggle(this,drawerLayout, R.string.nav_open,
R.string.nav_close);

    drawerLayout.addDrawerListener(actionBarDrawerToggle);

    actionBarDrawerToggle.syncState();

    getSupportActionBar().setDisplayHomeAsUpEnabled(true);

    NavigationView navigationView = findViewById(R.id.navigation_view);

    navigationView.setNavigationItemSelectedListener(this);

  }

  @Override
```

```java
public boolean onOptionsItemSelected(@NonNull MenuItem item) {

    if (actionBarDrawerToggle.onOptionsItemSelected(item)){

        return true;

    }

    return super.onOptionsItemSelected(item);

}

@Override

public boolean onNavigationItemSelected(@NonNull MenuItem item) {

    int id=item.getItemId();

    if(id == R.id.account){

        Toast.makeText(this, "Home Page", Toast.LENGTH_SHORT).show();

    }

    if(id == R.id.profile){

        Toast.makeText(this, "Settings Page",

            Toast.LENGTH_SHORT).show();

    }

    if(id == R.id.logout){

        Toast.makeText(this, "Logout", Toast.LENGTH_SHORT).show();

    }

    return false;

}
}
```

Output:
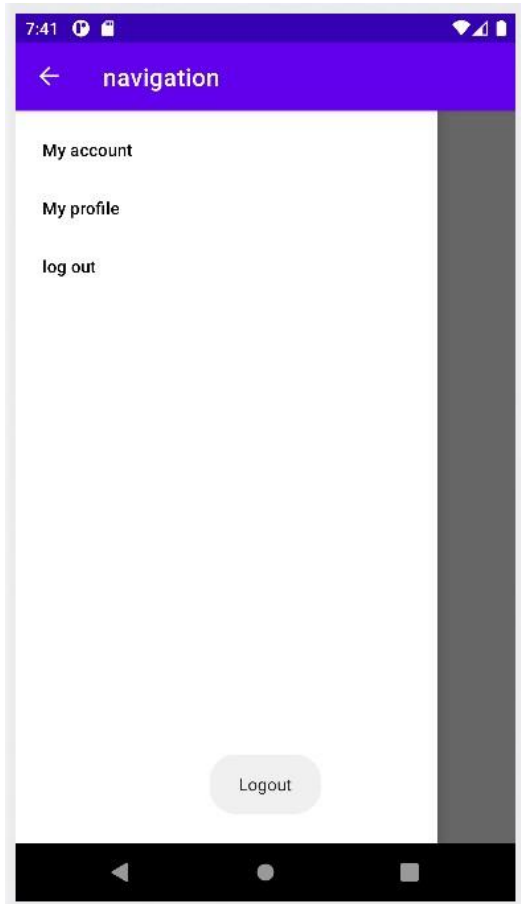
Program no:20

Aim: Program to implement activity lifecycle

XML Code:

```xml
<?xml version="1.0" encoding="utf-8"?>
<android.support.constraint.ConstraintLayout xmlns:android="http://schemas.androi .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="example.javatpoint.com.activitylifecycle.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>
```

Java Code:

```java
package example.javatpoint.com.activitylifecycle;

import android.app.Activity;

import android.os.Bundle;

import android.util.Log;


public class MainActivity extends Activity {

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        Log.d("lifecycle","onCreate invoked");
    }
    @Override
    protected void onStart() {
        super.onStart();
        Log.d("lifecycle","onStart invoked");
    }
    @Override
    protected void onResume() {
        super.onResume();
        Log.d("lifecycle","onResume invoked");
    }
    @Override
    protected void onPause() {
        super.onPause();
        Log.d("lifecycle","onPause invoked");
    }
```

```java
    @Override
    protected void onStop() {
        super.onStop();
        Log.d("lifecycle","onStop invoked");
    }
    @Override
    protected void onRestart() {
        super.onRestart();
        Log.d("lifecycle","onRestart invoked");
    }
    @Override
    protected void onDestroy() {
        super.onDestroy();
        Log.d("lifecycle","onDestroy invoked");
    }
}
```

Output:

Program no:21

Aim: Program to implement various SQLite operations : (INSERT, UPDATE ,DELETE ,SELECT)

XML Code:

```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"
    android:padding="10dp"
    tools:context=".MainActivity">

    <TextView
        android:id="@+id/texttitle"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginTop="20dp"
        android:text="Please enter the details below"
        android:textSize="24dp" />

    <EditText
        android:id="@+id/name"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:hint="Name"
        android:textSize="24dp"
        android:layout_below="@+id/texttitle"
        android:inputType="textPersonName"
        />
    <EditText
        android:id="@+id/contact"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:hint="Contact"
        android:textSize="24dp"
```

```
    android:layout_below="@+id/name"
    android:inputType="number"
    />
<EditText
    android:id="@+id/dob"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:hint="Date of birth"
    android:textSize="24dp"
    android:layout_below="@+id/contact"
    android:inputType="number"
    />
<Button
    android:id="@+id/buttonInsert"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:textSize="24dp"
    android:text="Insert new Data"
    android:layout_marginTop="30dp"
    android:layout_below="@+id/dob"
    />
<Button
    android:id="@+id/buttonUpdate"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:textSize="24dp"
    android:text="Update Data"
    android:layout_below="@+id/buttonInsert"
    />
<Button
    android:id="@+id/buttondelete"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:textSize="24dp"
    android:text="Delete existing data"
    android:layout_below="@+id/buttonUpdate"
    />
```

```xml
<Button
    android:id="@+id/buttonView"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:textSize="24dp"
    android:text="View data"
    android:layout_below="@+id/buttondelete"
    />

</RelativeLayout>
```

Java Code:

```java
package com.example.sqlite_app;


import androidx.appcompat.app.AlertDialog;

import androidx.appcompat.app.AppCompatActivity;

import android.database.Cursor;

import android.os.Bundle;

import android.view.View;

import android.widget.Button;

import android.widget.EditText;

import android.widget.Toast;


public class MainActivity extends AppCompatActivity {

    EditText name, contact, dob;

    Button insert, update, delete, view;

    DBHelper DB;


    @Override
    protected void onCreate(Bundle savedInstanceState) {

        super.onCreate(savedInstanceState);

        setContentView(R.layout.activity_main);
```

```java
name=findViewById(R.id.name);

contact=findViewById(R.id.contact);

dob=findViewById(R.id.dob);

insert=findViewById(R.id.buttonInsert);

update=findViewById(R.id.buttonUpdate);

delete=findViewById(R.id.buttondelete);

view=findViewById(R.id.buttonView);

DB=new DBHelper(this);


insert.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        String nameTXT=name.getText().toString();
        String contactTXT=contact.getText().toString();
        String dobTXT=dob.getText().toString();


        Boolean
checkinsertdata=DB.insertuserdata(nameTXT,contactTXT,dobTXT);
        if(checkinsertdata==true)
            Toast.makeText(MainActivity.this, "New Entry Inserted",
Toast.LENGTH_SHORT).show();
        else
            Toast.makeText(MainActivity.this, "unable to insert",
Toast.LENGTH_SHORT).show();
    }
});
update.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
```

```
        String nameTXT=name.getText().toString();

        String contactTXT=contact.getText().toString();

        String dobTXT=dob.getText().toString();


        Boolean
checkupdatedata=DB.updateuserdata(nameTXT,contactTXT,dobTXT);
        if(checkupdatedata==true)

            Toast.makeText(MainActivity.this, "Entry updated",
Toast.LENGTH_SHORT).show();

        else

            Toast.makeText(MainActivity.this, "Not updated",
Toast.LENGTH_SHORT).show();

        }

    });

    delete.setOnClickListener(new View.OnClickListener() {

       @Override

       public void onClick(View v) {

          String nameTXT=name.getText().toString();


          Boolean checkdeletedata=DB.deletedata(nameTXT);

          if(checkdeletedata==true)

             Toast.makeText(MainActivity.this, "Entry deleted",
Toast.LENGTH_SHORT).show();

          else

             Toast.makeText(MainActivity.this, "Not deleted",
Toast.LENGTH_SHORT).show();

       }

    });

    view.setOnClickListener(new View.OnClickListener() {
```

```
    @Override
    public void onClick(View v) {
        Cursor res=DB.getdata();
        if(res.getCount()==0){
            Toast.makeText(MainActivity.this, "No entry exists",
Toast.LENGTH_SHORT).show();
            return;
        }
        StringBuffer buffer=new StringBuffer();
        while(res.moveToNext()){
            buffer.append("Name:"+res.getString(0)+"\n");
            buffer.append("Contact:"+res.getString(1)+"\n");
            buffer.append("Date of Birth:"+res.getString(2)+"\n");
        }
        AlertDialog.Builder builder=new
AlertDialog.Builder(MainActivity.this);
        builder.setCancelable(true);
        builder.setTitle("User Entries");
        builder.setMessage(buffer.toString());
        builder.show();


    }
  });


  }
}
```

```java
package com.example.sqlite_app;

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

import androidx.annotation.Nullable;

public class DBHelper extends SQLiteOpenHelper {
    public DBHelper(Context context) {
        super(context, "Userdata", null, 1);
    }

    @Override
    public void onCreate(SQLiteDatabase DB) {
        DB.execSQL("create Table Userdetails(name TEXT primary key, contact TEXT, dob TEXT)");

    }

    @Override
    public void onUpgrade(SQLiteDatabase DB, int oldVersion, int newVersion) {
        DB.execSQL("drop Table if exists Userdetails");
    }
    public Boolean insertuserdata(String name, String contact, String dob){
        SQLiteDatabase DB=this.getWritableDatabase();
```

```java
ContentValues contentValues=new ContentValues();

contentValues.put("name",name);

contentValues.put("contact",contact);

contentValues.put("dob",dob);

long result=DB.insert("Userdetails", null, contentValues);

if(result==-1){

    return false;

}else{

    return true;

}

}
    public Boolean updateuserdata(String name, String contact, String dob){

        SQLiteDatabase DB=this.getWritableDatabase();

        ContentValues contentValues=new ContentValues();

        contentValues.put("contact",contact);

        contentValues.put("dob",dob);

        Cursor cursor=DB.rawQuery("Select * from Userdetails where name=?",
new String[]{name});

        if(cursor.getCount()>0) {

        long result = DB.update("Userdetails", contentValues, "name=?", new
String[]{name});

            if (result == -1) {

                return false;

            } else {

                return true;

            }

        }else{

            return false;

        }
```
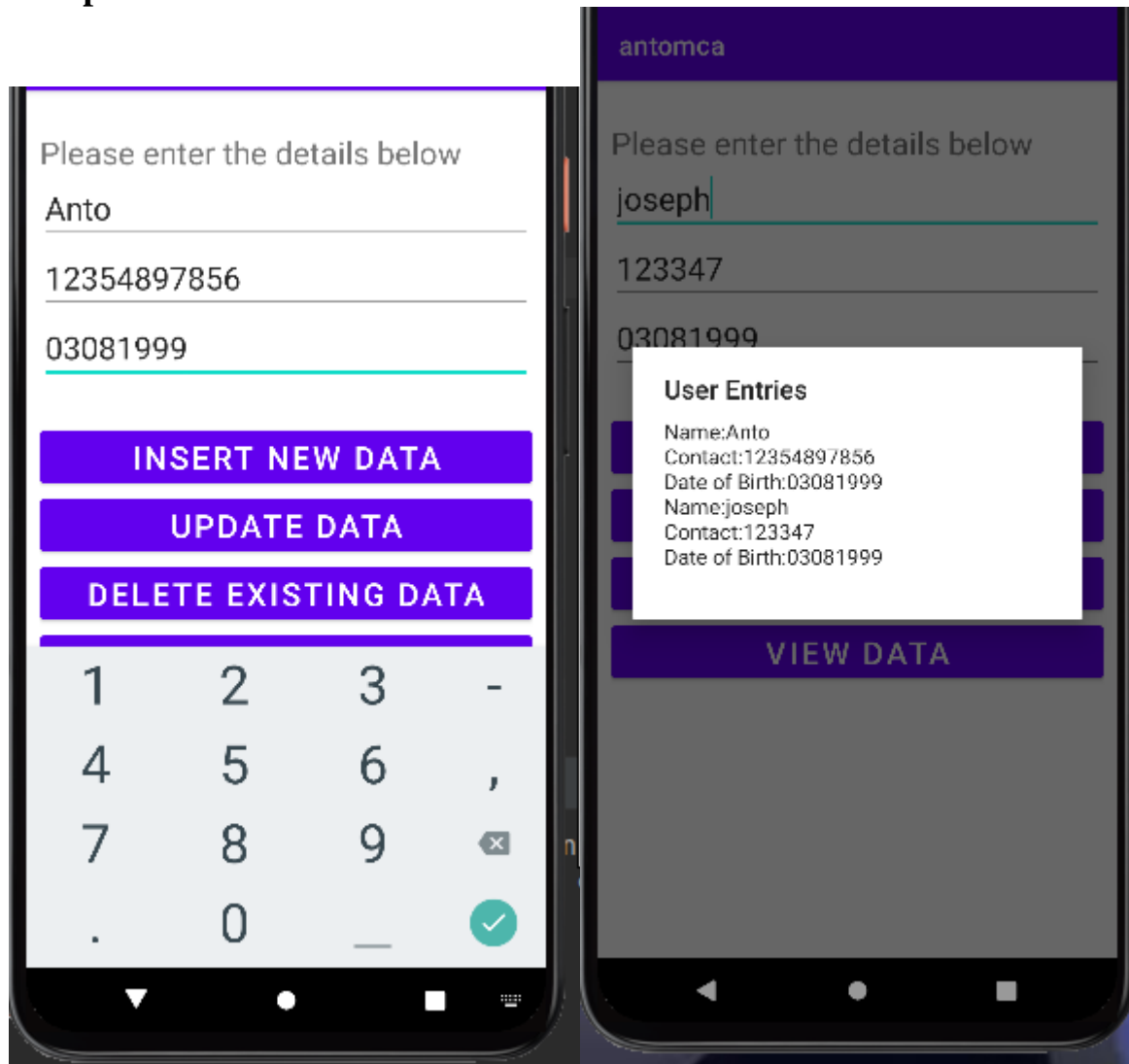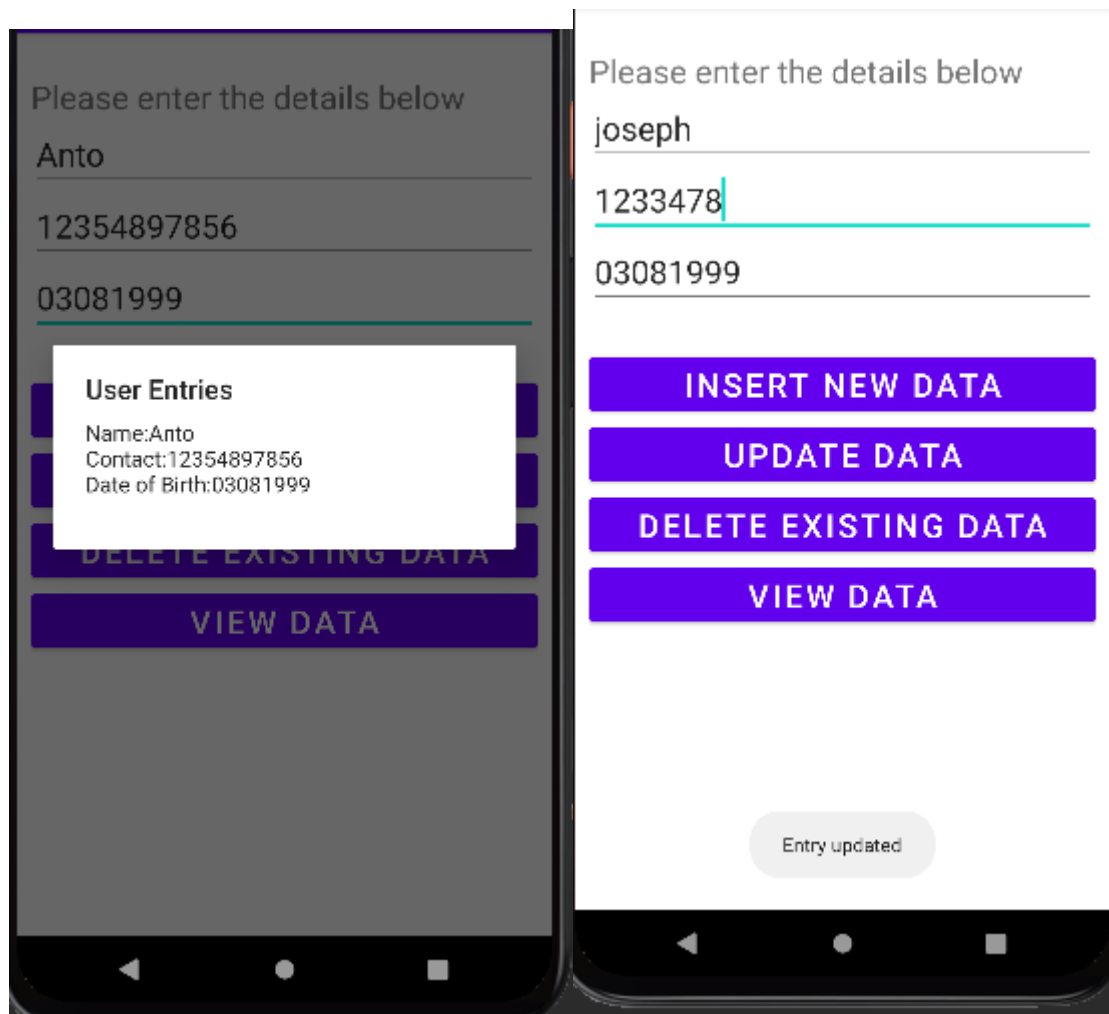
```
    }
    public Boolean deletedata(String name){
        SQLiteDatabase DB=this.getWritableDatabase();
        Cursor cursor=DB.rawQuery("Select * from Userdetails where name=?",
new String[]{name});
        if(cursor.getCount()>0) {
            long result = DB.delete("Userdetails", "name=?", new String[]{name});
            if (result == -1) {
                return false;
            } else {
                return true;
            }
        }else{
            return false;
        }
    }
    public Cursor getdata (){
        SQLiteDatabase DB=this.getWritableDatabase();
        Cursor cursor=DB.rawQuery("Select * from Userdetails",null);
        return cursor;
    }
}
```

Output: