COURSE OUTCOME 2

PROGRAM NO:1

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

PROGRAM CODE:

XML CODE:

activity_main.xml

```xml
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
xmlns:app="http://schemas.android.com/apk/res-auto" xmlns:tools="http://schemas.android.com/tools"
android:layout_width="match_parent"
 android:layout_height="match_parent"
 android:background="#00BCD4"
 android:orientation="vertical"
 tools:context=".MainActivity">
<EditText
    android:id="@+id/name"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:backgroundTint="#00BCD4"
    android:ems="10"
    android:hint="Name"
    android:inputType="textPersonName" />
  <EditText
```

```xml
    android:id="@+id/address"

    android:layout_width="match_parent"

    android:layout_height="wrap_content"

    android:backgroundTint="#00BCD4"

    android:ems="10"

    android:hint="Address"

    android:inputType="textPersonName"

    android:minHeight="48dp" />

 <EditText

    android:id="@+id/email"

    android:layout_width="match_parent"

    android:layout_height="wrap_content"

    android:backgroundTint="#00BCD4"

    android:ems="10"

    android:hint="Email"

    android:inputType="textEmailAddress" />

<EditText

    android:id="@+id/password"

    android:layout_width="match_parent"

    android:layout_height="wrap_content"

    android:backgroundTint="#00BCD4"

    android:ems="10"

    android:hint="Password"

    android:inputType="textPassword" />

<EditText

    android:id="@+id/phno"

    android:layout_width="match_parent"

    android:layout_height="wrap_content"

    android:backgroundTint="#00BCD4"

    android:ems="10"
```

```xml
    android:hint="Phone"

    android:inputType="phone" />

<TextView

    android:id="@+id/textView"

    android:layout_width="match_parent"

    android:layout_height="35dp"

    android:backgroundTint="#00BCD4"

    android:text="Gender"

    android:textAppearance="@style/TextAppearance.AppCompat.Body2"

    android:textSize="16sp" />

<RadioGroup

    android:id="@+id/gender"

    android:layout_width="match_parent"

    android:layout_height="99dp">

 <RadioButton

    android:id="@+id/male"

    android:layout_width="match_parent"

    android:layout_height="wrap_content"

    android:backgroundTint="#00BCD4"

    android:text="Male" />

 <RadioButton

    android:id="@+id/female"

    android:layout_width="match_parent"

    android:layout_height="wrap_content"

    android:backgroundTint="#00BCD4"

    android:text="Female" />

  <Button

    android:id="@+id/validate"

    android:layout_width="match_parent"

    android:layout_height="wrap_content"
```

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

    </RadioGroup>

  <Button

    android:id="@+id/validate1"

    android:layout_width="match_parent"

    android:layout_height="wrap_content"

    android:backgroundTint="#009688"

    android:text="SUBMIT"

    android:textSize="20sp" />

  </LinearLayout>
```

activity_main2.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=".MainActivity2">

 <TextView
    android:id="@+id/textView2"
    android:layout_width="165dp"
    android:layout_height="44dp"
    android:layout_marginStart="8dp"
    android:layout_marginTop="8dp"
    android:layout_marginEnd="8dp"
    android:text="HAII WELCOME......!!!!!"
    android:textColor="#B388FF"
    android:textSize="16sp"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.454"
    app:layout_constraintLeft_toLeftOf="parent"
    app:layout_constraintRight_toRightOf="parent"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.06" />

  <TextView
    android:id="@+id/textView3"
```

```xml
        android:layout_width="149dp"
        android:layout_height="52dp"
        android:backgroundTint="#8C9EFF"
        android:text="TextView"
        android:textColor="#06D8F3"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.461"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.229" />

    <TextView
        android:id="@+id/textView4"
        android:layout_width="147dp"
        android:layout_height="52dp"
        android:text="TextView"
        android:textColor="#D310F4"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.465"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.369" />

    <TextView
        android:id="@+id/textView5"
        android:layout_width="146dp"
        android:layout_height="50dp"
        android:text="TextView"
        android:textColor="#F80D5D"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.467"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.499" />

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

JAVA CODE:

MainActivity.java

```java
package com.example.sharedpreference;

import androidx.appcompat.app.AppCompatActivity;

import android.content.SharedPreferences;
```

```java
import android.content.Intent;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import android.widget.RadioButton;
import android.widget.RadioGroup;
import android.widget.Toast;

public class MainActivity extends AppCompatActivity {
    EditText e1,e2,e3,e4,e5;
    Button b1;
    RadioButton r1,r2;
    RadioGroup r;


    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        e1=(EditText)findViewById(R.id.name);
        e2=(EditText)findViewById(R.id.address);
        e3=(EditText)findViewById(R.id.email);
        e4=(EditText)findViewById(R.id.password);
        e5=(EditText)findViewById(R.id.phno);
        b1=(Button)findViewById(R.id.validate1);
        r=(RadioGroup)findViewById(R.id.gender);
        r1=(RadioButton)findViewById(R.id.male);
        r2=(RadioButton)findViewById(R.id.female);
        b1.setOnClickListener(new View.OnClickListener(){
            @Override
            public void onClick(View v)
            {
                validate();

            }
        });

    }
    protected void onResume() {
        super.onResume();
        SharedPreferences sh = getSharedPreferences("MySharedPref", MODE_PRIVATE);

        String s1 = sh.getString("name", "name");
        String s2 = sh.getString("address", "address");
        String s3 = sh.getString("pno","pno");
        e1.setText(s1);
        e2.setText(s2);
        e3.setText(s3);
    }
    protected void onPause() {
        super.onPause();
        SharedPreferences sharedPreferences = getSharedPreferences("MySharedPref", MODE_PRIVATE);
```

```java
        SharedPreferences.Editor myEdit = sharedPreferences.edit();
        myEdit.putString("name", e1.getText().toString());
        myEdit.putString("address",e2.getText().toString());
        myEdit.putString("pno",e3.getText().toString());
        myEdit.apply();
    }

    public void validate()
    {
        String name=e1.getText().toString();
        String email=e3.getText().toString().trim();
        String address=e2.getText().toString();
        String password=e4.getText().toString();
        String namePattern="[0-9!@#$%^&*]";
        String emailPattern="[a-zA-Z0-9._-]+@[a-z]+\\.+[a-z]+";
        String pno=e5.getText().toString();
        int valid=1;

        if(name.length()==0)
        {
            e1.getText().clear();
            e1.requestFocus();
            e1.setError("Enter  name ");
            Toast.makeText(getApplicationContext(), "Enter valid name", Toast.LENGTH_SHORT).show();
            valid++;
        }
        if(name.matches(".*[0-9].*"))
        {       e1.getText().clear();
            e1.requestFocus();
            e1.setError("Name contains illegal characters");
            Toast.makeText(getApplicationContext(), "Enter valid name", Toast.LENGTH_SHORT).show();
            valid++;
        }
        if(address.length()==0)
        {
            e2.getText().clear();
            e2.requestFocus();
            e2.setError("Enter address");
            Toast.makeText(getApplicationContext(), "Enter valid address", Toast.LENGTH_SHORT).show();
            valid++;
        }
        if(email.length()==0)
        {
            e3.getText().clear();
            e3.requestFocus();
            e3.setError("Enter email address");
            Toast.makeText(getApplicationContext(), "Enter valid email", Toast.LENGTH_SHORT).show();
            valid++;
        }
        if(!email.matches(emailPattern))
        {
            e3.getText().clear();
            e3.requestFocus();
```

```java
        e3.setError("Invalid email address");
        Toast.makeText(getApplicationContext(), "Enter valid email ", Toast.LENGTH_SHORT).show();
        valid++;
    }
    if(password.length()==0)
    {
        e4.requestFocus();
        e4.setError("Enter password");
        valid++;
    }
    if(password.length()<5)
    {
        e4.requestFocus();
        e4.setError("Enter an 8 digit password");
        valid++;

    }
    if(!password.equals("password"))
    {
        Toast.makeText(getApplicationContext(), "Incorrect password", Toast.LENGTH_SHORT).show();
    }
    if (r.getCheckedRadioButtonId() == -1)
    {
        Toast.makeText(getApplicationContext(), "Please select any gender",
Toast.LENGTH_SHORT).show();
        valid++;
    }
    else
    {
        if(r1.isChecked())
        {
            Toast.makeText(getApplicationContext(), "Welcome Mr."+name, Toast.LENGTH_SHORT).show();
        }
        if(r2.isChecked())
        {
            Toast.makeText(getApplicationContext(), "Welcome Ms."+name,
Toast.LENGTH_SHORT).show();
        }
    }
    if(pno.length()<10)
    {
        e5.setError("Phone number should be of atleast 10 digits");
        valid++;
    }
    if(valid==1)
    {
        Toast.makeText(getApplicationContext(), "VALIDATION SUCESSFULL",
Toast.LENGTH_SHORT).show();
        Intent i = new Intent(getApplicationContext(), MainActivity2.class);
        i.putExtra("1", name);
        i.putExtra("2", email);
        i.putExtra("3", address);
        startActivity(i);
```

```
        }

    }

}
```

MainActivity2.java

```java
package com.example.sharedpreference;

import androidx.appcompat.app.AppCompatActivity;

import android.os.Bundle;

import android.content.Intent;

import android.widget.TextView;

import android.view.View;

import android.widget.Toast;


public class MainActivity2 extends AppCompatActivity {
@Override

    protected void onCreate(Bundle savedInstanceState) {

        TextView t1,t2,t3;

        super.onCreate(savedInstanceState);

        setContentView(R.layout.activity_main2);

        Bundle extras = getIntent().getExtras();

        t1=(TextView) findViewById(R.id.textView3);

        t2=(TextView) findViewById(R.id.textView4);

        t3=(TextView) findViewById(R.id.textView5);

        String value1 = extras.getString("1");

        String value2 = extras.getString("2");

        String value3 = extras.getString("3");

        t1.setText(value1);

        t2.setText("Address is "+ value3);

        t3.setText("Email is "+ value2);
```

```java
    }
    public void callFirstActivity(View view){
        Intent i = new Intent(getApplicationContext(), MainActivity.class);
        startActivity(i);
    }
}
```

Shared Preference

HAII WELCOME......!!!!!

Christy Raj

Address is Dream Villa

Email is
Christy99@gmail.com
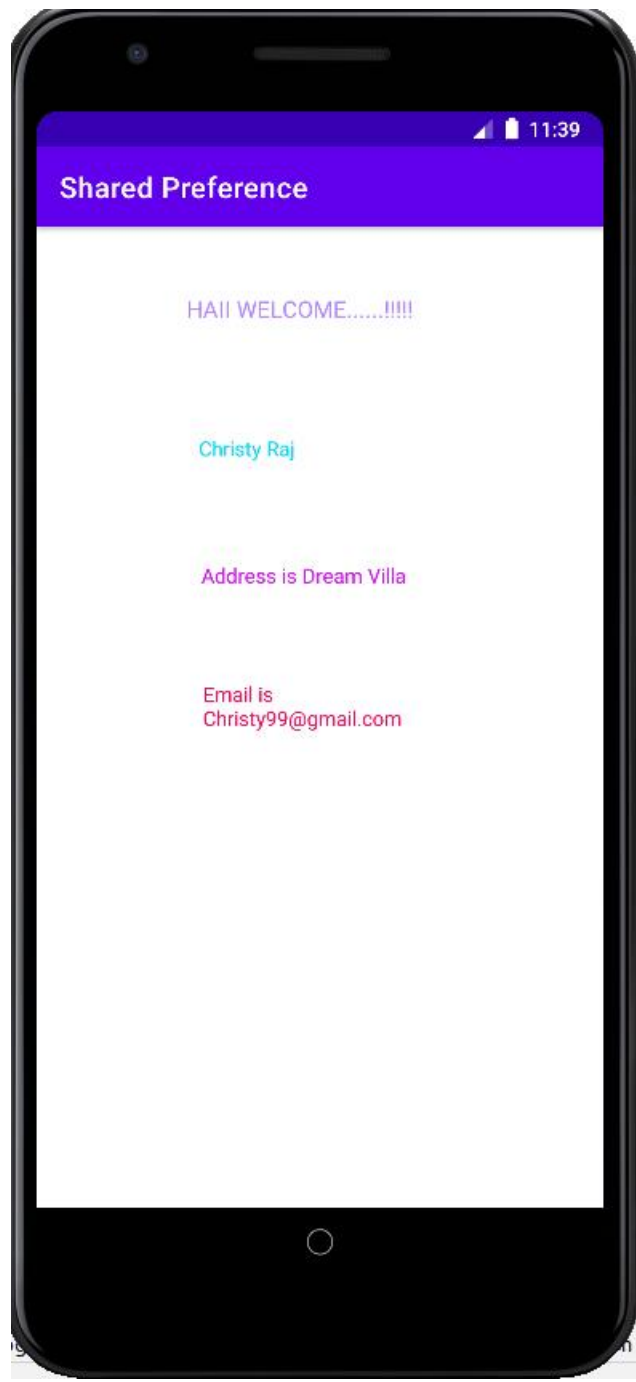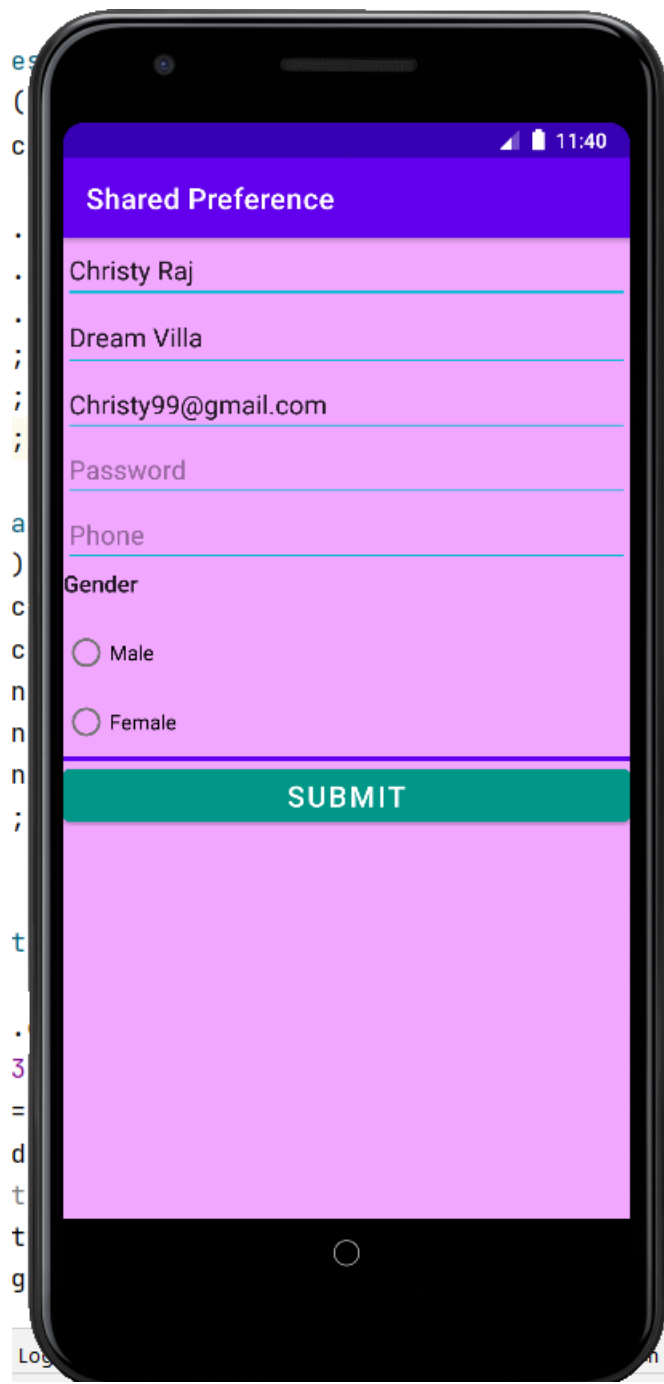
RESULT: The program executed successfully and output is obtained

PROGRAM NO:2

AIM: Design a simple Calculator using GridLayout and Cascaded LinearLayout

PROGRAM CODE:

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:background="#F6CACA"
    tools:context=".MainActivity">
    <android.widget.GridLayout
        android:id="@+id/gridLayout"
        android:layout_width="398dp"
        android:layout_height="496dp"
        android:layout_marginStart="1dp"
        android:layout_marginTop="45dp"
        android:layout_marginEnd="1dp"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toBottomOf="@+id/edt1">
        <Button
            android:id="@+id/button2"
```

```xml
    android:layout_width="100dp"

    android:layout_height="60dp"

    android:text="C"

    android:textSize="20sp"

    app:layout_column="0"

    app:layout_row="0" />

<Button

    android:id="@+id/button3"

    android:layout_width="98dp"

    android:layout_height="60dp"

    android:text="( )"

    android:textSize="20sp"

    app:layout_column="1"

    app:layout_row="0" />

<Button

    android:id="@+id/button4"

    android:layout_width="wrap_content"

    android:layout_height="60dp"

    android:text="%"

    android:textSize="20sp"

    app:layout_column="2"

    app:layout_row="0" />

<Button

    android:id="@+id/button5"

    android:layout_width="121dp"

    android:layout_height="64dp"

    android:layout_row="0"

    android:layout_column="3"

    android:text="/"

    android:textSize="20sp"
```

```xml
    app:layout_column="3"

    app:layout_row="0" />

<Button

    android:id="@+id/button6"

    android:layout_width="91dp"

    android:layout_height="59dp"

    android:layout_row="1"

    android:layout_column="0"

    android:text="7"

    android:textSize="20sp"

    app:layout_column="0"

    app:layout_row="1" />

<Button

    android:id="@+id/button7"

    android:layout_width="wrap_content"

    android:layout_height="60dp"

    android:layout_row="2"

    android:layout_column="1"

    android:text="4"

    android:textSize="20sp"

    app:layout_column="0"

    app:layout_row="2" />

<Button

    android:id="@+id/button8"

    android:layout_width="wrap_content"

    android:layout_height="61dp"

    android:layout_row="1"

    android:layout_column="2"

    android:text="1"

    android:textSize="20sp"
```

```xml
        app:layout_column="0"

        app:layout_row="3" />

    <Button

        android:id="@+id/button9"

        android:layout_width="123dp"

        android:layout_height="65dp"

        android:text="+/-"

        android:textSize="20sp"

        app:layout_column="0"

        app:layout_row="4" />

    <Button

        android:id="@+id/button10"

        android:layout_width="wrap_content"

        android:layout_height="61dp"

        android:layout_row="4"

        android:layout_column="0"

        android:text="8"

        android:textSize="20sp"

        app:layout_column="1"

        app:layout_row="1" />

    <Button

        android:id="@+id/button11"

        android:layout_width="wrap_content"

        android:layout_height="59dp"

        android:layout_row="4"

        android:layout_column="1"

        android:text="9"

        android:textSize="20sp"

        app:layout_column="2"

        app:layout_row="1" />
```

```xml
<Button
    android:id="@+id/button12"
    android:layout_width="113dp"
    android:layout_height="62dp"
    android:layout_row="2"
    android:layout_column="3"
    android:text="*"
    android:textSize="20sp"
    app:layout_column="3"
    app:layout_row="1" />
<Button
    android:id="@+id/button13"
    android:layout_width="wrap_content"
    android:layout_height="61dp"
    android:layout_row="1"
    android:layout_column="1"
    android:text="5"
    android:textSize="20sp"
    app:layout_column="1"
    app:layout_row="2" />
<Button
    android:id="@+id/button14"
    android:layout_width="wrap_content"
    android:layout_height="64dp"
    android:layout_row="2"
    android:layout_column="2"
    android:text="2"
    android:textSize="20sp"
    app:layout_column="1"
    app:layout_row="3" />
```

```xml
<Button
    android:id="@+id/button15"
    android:layout_width="wrap_content"
    android:layout_height="60dp"
    android:layout_row="3"
    android:layout_column="2"
    android:text="0"
    android:textSize="20sp"
    app:layout_column="1"
    app:layout_row="4" />
<Button
    android:id="@+id/button16"
    android:layout_width="wrap_content"
    android:layout_height="60dp"
    android:layout_row="2"
    android:layout_column="0"
    android:text="6"
    android:textSize="20sp"
    app:layout_column="2"
    app:layout_row="2" />
<Button
    android:id="@+id/button17"
    android:layout_width="wrap_content"
    android:layout_height="61dp"
    android:layout_row="3"
    android:layout_column="0"
    android:text="-"
    android:textSize="20sp"
    app:layout_column="3"
    app:layout_row="2" />
```

```xml
<Button
    android:id="@+id/button18"
    android:layout_width="wrap_content"
    android:layout_height="59dp"
    android:text="3"
    android:textSize="20sp"
    app:layout_column="2"
    app:layout_row="3" />
<Button
    android:id="@+id/button19"
    android:layout_width="wrap_content"
    android:layout_height="61dp"
    android:layout_row="4"
    android:layout_column="2"
    android:text="."
    android:textSize="24sp"
    app:layout_column="2"
    app:layout_row="4" />
<Button
    android:id="@+id/button20"
    android:layout_width="121dp"
    android:layout_height="59dp"
    android:layout_row="3"
    android:layout_column="3"
    android:text="+"
    android:textSize="20sp"
    app:layout_column="3"
    app:layout_row="3" />
<Button
    android:id="@+id/button21"
```

```xml
            android:layout_width="111dp"

            android:layout_height="62dp"

            android:layout_row="4"

            android:layout_column="3"

            android:text="="

            android:textSize="20sp"

            app:layout_column="3"

            app:layout_row="4" />

    </android.widget.GridLayout>

    <EditText

        android:id="@+id/edt1"

        android:layout_width="423dp"

        android:layout_height="93dp"

        android:layout_marginTop="140dp"

        android:layout_marginBottom="95dp"

        android:background="#A3D4DA"

        android:backgroundTint="#CCEBEF"

        android:textSize="34sp"

        app:layout_constraintBottom_toTopOf="@+id/gridLayout"

        app:layout_constraintEnd_toEndOf="parent"

        app:layout_constraintHorizontal_bias="0.0"

        app:layout_constraintStart_toStartOf="parent"

        app:layout_constraintTop_toTopOf="parent"

        app:layout_constraintVertical_bias="1.0"

        tools:ignore="MissingConstraints" />

    <EditText

        android:id="@+id/editTextTextPersonName2"

        android:layout_width="406dp"

        android:layout_height="61dp"

        android:layout_marginStart="1dp"
```

android:layout_marginTop="15dp"

android:layout_marginBottom="42dp"

android:background="#F6C7D7"

android:ems="10"

android:foregroundGravity="center"

android:gravity="center"

android:inputType="textPersonName"

android:text="Calculator"

android:textColor="#673AB7"

android:textSize="50sp"

android:textStyle="bold"

app:layout_constraintBottom_toTopOf="@+id/edt1"

app:layout_constraintEnd_toEndOf="parent"

app:layout_constraintStart_toStartOf="parent"

app:layout_constraintTop_toTopOf="parent"

android:layout_marginLeft="1dp" />

</androidx.constraintlayout.widget.ConstraintLayout>

JAVA CODE:

```java
package com.example.calcgridlayout;

import android.os.Bundle;
import androidx.appcompat.app.AppCompatActivity;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
public class MainActivity extends AppCompatActivity {
    Button button0, button1, button2, button3, button4, button5,
        button6,
        button7, button8, button9, buttonAdd, buttonSub,
```

```java
        buttonDivision,

        buttonMul, buttond, buttonC, buttonEqual,buttonperc;

    EditText cEditText;

    float mValueOne, mValueTwo;

    boolean cAddition, mSubtract, cMultiplication, cDivision,cperc;

    @Override

    protected void onCreate(Bundle savedInstanceState) {

        super.onCreate(savedInstanceState);

        setContentView(R.layout.activity_main);

        button0 = (Button) findViewById(R.id.button15);

        button1 = (Button) findViewById(R.id.button8);

        button2 = (Button) findViewById(R.id.button14);

        button3 = (Button) findViewById(R.id.button18);

        button4 = (Button) findViewById(R.id.button7);

        button5 = (Button) findViewById(R.id.button13);

        button6 = (Button) findViewById(R.id.button16);

        button7 = (Button) findViewById(R.id.button6);

        button8 = (Button) findViewById(R.id.button10);

        button9 = (Button) findViewById(R.id.button11);

        buttond = (Button) findViewById(R.id.button19);

        buttonAdd = (Button) findViewById(R.id.button20);

        buttonSub = (Button) findViewById(R.id.button17);

        buttonMul = (Button) findViewById(R.id.button12);

        buttonDivision = (Button) findViewById(R.id.button5);

        buttonC = (Button) findViewById(R.id.button2);

        buttonperc = (Button) findViewById(R.id.button4);

        buttonEqual = (Button) findViewById(R.id.button21);

        cEditText = (EditText) findViewById(R.id.edt1);

        button1.setOnClickListener(new View.OnClickListener() {

            @Override
```

```java
        public void onClick(View v) {

            cEditText.setText(cEditText.getText() + "1");

        }

    });

    button2.setOnClickListener(new View.OnClickListener() {

        @Override

        public void onClick(View v) {

            cEditText.setText(cEditText.getText() + "2");

        }

    });

    button3.setOnClickListener(new View.OnClickListener() {

        @Override

        public void onClick(View v) {

            cEditText.setText(cEditText.getText() + "3");

        }

    });

    button4.setOnClickListener(new View.OnClickListener() {

        @Override

        public void onClick(View v) {

            cEditText.setText(cEditText.getText() + "4");

        }

    });

    button5.setOnClickListener(new View.OnClickListener() {

        @Override

        public void onClick(View v) {

            cEditText.setText(cEditText.getText() + "5");

        }

    });

    button6.setOnClickListener(new View.OnClickListener() {

        @Override
```

```java
    public void onClick(View v) {

        cEditText.setText(cEditText.getText() + "6");

    }

});

button7.setOnClickListener(new View.OnClickListener() {

    @Override

    public void onClick(View v) {

        cEditText.setText(cEditText.getText() + "7");

    }

});

button8.setOnClickListener(new View.OnClickListener() {

    @Override

    public void onClick(View v) {

        cEditText.setText(cEditText.getText() + "8");

    }

});

button9.setOnClickListener(new View.OnClickListener() {

    @Override

    public void onClick(View v) {

        cEditText.setText(cEditText.getText() + "9");

    }

});

button0.setOnClickListener(new View.OnClickListener() {

    @Override

    public void onClick(View v) {

        cEditText.setText(cEditText.getText() + "0");

    }

});

buttonAdd.setOnClickListener(new View.OnClickListener() {

    @Override
```

```java
        public void onClick(View v) {

            if (cEditText == null) {

                cEditText.setText("");

            } else {

                mValueOne = Float.parseFloat(cEditText.getText() +

                        "");

                cAddition = true;

                cEditText.setText(null);

            }

        }

    });

    buttonSub.setOnClickListener(new View.OnClickListener() {

        @Override

        public void onClick(View v) {

            mValueOne = Float.parseFloat(cEditText.getText() +

                    "");

            mSubtract = true;

            cEditText.setText(null);

        }

    });

    buttonMul.setOnClickListener(new View.OnClickListener() {

        @Override

        public void onClick(View v) {

            mValueOne = Float.parseFloat(cEditText.getText() +

                    "");

            cMultiplication = true;

            cEditText.setText(null);

        }

    });

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

```java
        @Override
        public void onClick(View v) {
            mValueOne = Float.parseFloat(cEditText.getText() +
                "");
            cDivision = true;
            cEditText.setText(null);
        }
    });
    buttonperc.setOnClickListener(new View.OnClickListener() {
        @Override
        public void onClick(View v) {
            mValueOne = Float.parseFloat(cEditText.getText() +
                "");
            cperc = true;
            cEditText.setText(null);
        }
    });
    buttonEqual.setOnClickListener(new View.OnClickListener() {
        @Override
        public void onClick(View v) {
            mValueTwo = Float.parseFloat(cEditText.getText() +
                "");
            if (cAddition == true) {
                cEditText.setText(mValueOne + mValueTwo + "");
                cAddition = false;
            }
            if (mSubtract == true) {
                cEditText.setText(mValueOne - mValueTwo + "");
                mSubtract = false;
            }
```

```java
            if (cMultiplication == true) {

                cEditText.setText(mValueOne * mValueTwo + "");

                cMultiplication = false;

            }

            if (cDivision == true) {

                cEditText.setText(mValueOne / mValueTwo + "");

                cDivision = false;

            }

            if (cperc == true) {

                cEditText.setText((mValueOne / mValueTwo)*100 +

                        "");

                cperc = false;

            }

        }

    });

    buttonC.setOnClickListener(new View.OnClickListener() {

        @Override

        public void onClick(View v) {

            cEditText.setText("");

        }

    });

    buttond.setOnClickListener(new View.OnClickListener() {

        @Override

        public void onClick(View v) {

            cEditText.setText(cEditText.getText() + ".");

        }

    });

}

}
```
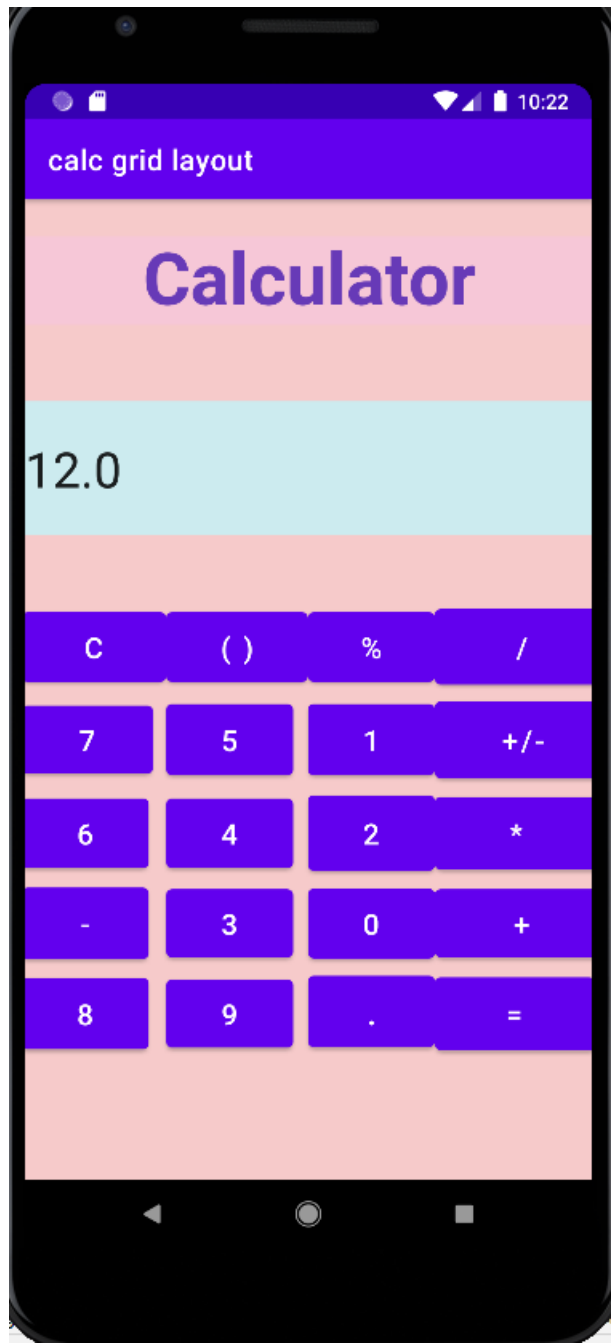
Calculator

5

C	( )	%	/
7	5	1	+/-
6	4	2	*
-	3	0	+
8	9	.	=

RESULT: The program executed successfully and output is obtained

PROGRAM NO:3

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

PROGRAM CODE:

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"
    tools:context=".MainActivity">


    <ImageView
        android:id="@+id/imageView3"
        android:layout_width="309dp"
        android:layout_height="130dp"
        android:layout_centerHorizontal="true"
        app:srcCompat="@drawable/fb" />


    <ImageView
        android:id="@+id/imageView7"
        android:layout_width="110dp"
        android:layout_height="500dp"
        android:layout_below="@+id/imageView3"
```

```xml
        android:layout_alignParentLeft="false"

        android:layout_marginTop="-200dp"

        app:srcCompat="@drawable/image" />


    <TextView

        android:id="@+id/editText1"

        android:layout_width="wrap_content"

        android:layout_height="wrap_content"

        android:layout_alignLeft="@id/imageView7"

        android:layout_alignBottom="@id/imageView7"

        android:layout_alignParentBottom="false"

        android:layout_marginLeft="149dp"

        android:layout_marginBottom="233dp"

        android:layout_toRightOf="@id/imageView7"

        android:ems="10"

        android:fontFamily="sans-serif-black"

        android:inputType="textPersonName"

        android:text="Christy Raj"

        android:textSize="20dp" />

    <CheckBox

        android:id="@+id/check1"

        android:layout_width="217dp"

        android:layout_height="26dp"

        android:layout_below="@id/imageView7"

        android:layout_marginTop="63dp"

        android:layout_marginBottom="56dp"

        android:text="Log In" />


    <CheckBox

        android:layout_width="217dp"
```

```xml
        android:layout_height="26dp"

        android:layout_alignTop="@+id/check1"

        android:layout_marginTop="60dp"

        android:layout_marginBottom="56dp"

        android:text="Find your Account" />


    <EditText

        android:layout_width="wrap_content"

        android:layout_height="wrap_content"

        android:layout_alignParentBottom="true"

        android:layout_centerInParent="true"

        android:layout_centerVertical="true"

        android:layout_marginBottom="72dp"

        android:background="@color/design_default_color_primary_variant"

        android:text="Create New Account"

        android:textColor="@color/white"

        android:textSize="20dp" />

</RelativeLayout>
```
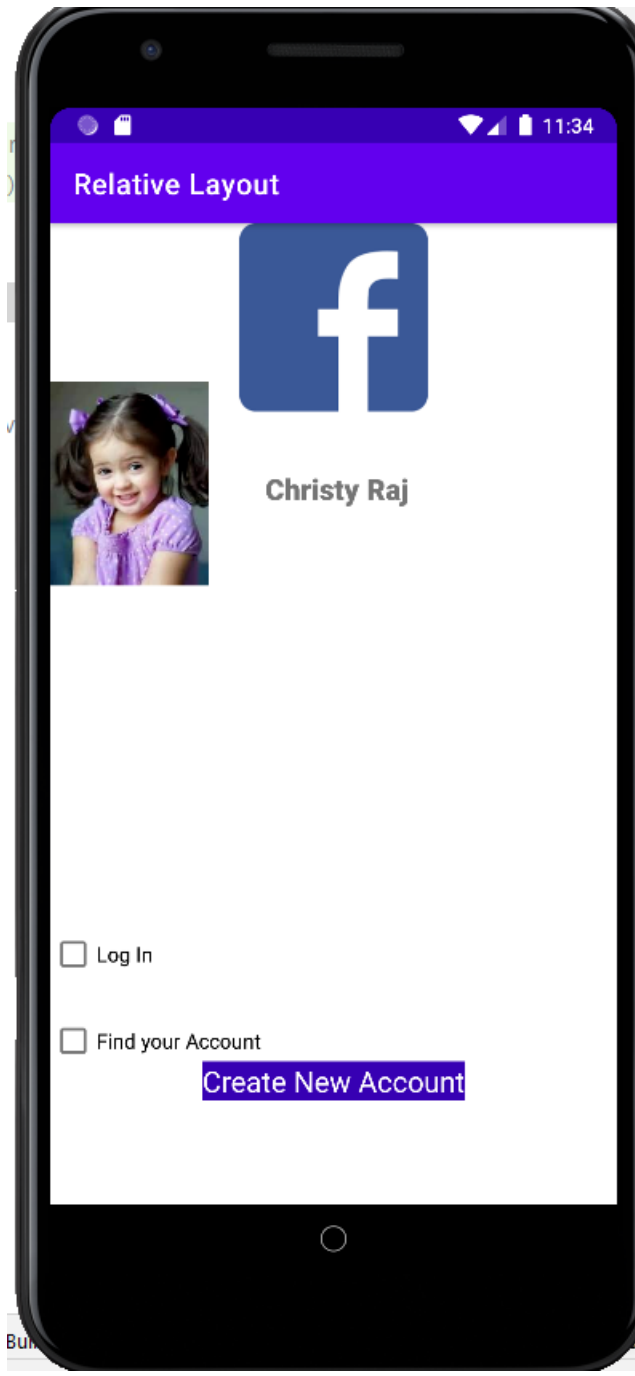
JAVA CODE:

```java
package com.example.relativelayout;

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);

    }

}
```

PROGRAM NO:4

AIM: Develop an application that toggles image using FrameLayout

PROGRAM CODE:

XML CODE:

```
<FrameLayout xmlns:android="http://schemas.android.com/apk/res/android"
    android:orientation="vertical"
    android:layout_width="match_parent"
    android:layout_height="match_parent">
    <ImageView
        android:id="@+id/first_image"
        android:src = "@drawable/first"
        android:layout_width="match_parent"
        android:layout_height="match_parent"
        android:scaleType="fitXY" />
    <ImageView
        android:id="@+id/second_image"
        android:src = "@drawable/scnd"
        android:layout_width="match_parent"
        android:layout_height="match_parent"
        android:scaleType="fitXY" />
    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Click the image to switch"
        android:layout_gravity="center_horizontal|bottom"
```

```
        android:padding="5dip"

        android:textColor="#ffffff"

        android:textStyle="bold"

        android:background="#333333"

        android:layout_marginBottom="10dip" />

</FrameLayout>
```

JAVA CODE:

```java
package com.example.framelayout;


import androidx.appcompat.app.AppCompatActivity;


import android.os.Bundle;

import android.view.View;

import android.widget.ImageView;


public class MainActivity extends AppCompatActivity {


    @Override

    protected void onCreate(Bundle savedInstanceState) {

        super.onCreate(savedInstanceState);

        setContentView(R.layout.activity_main);

        final ImageView first_image = (ImageView)this.findViewById(R.id.first_image);

        final ImageView second_image = (ImageView)this.findViewById(R.id.second_image);

        first_image.setOnClickListener(new View.OnClickListener(){

            public void onClick(View view) {

                second_image.setVisibility(View.VISIBLE);

                view.setVisibility(View.GONE);

            }

        });

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

```java
        public void onClick(View view) {
            first_image.setVisibility(View.VISIBLE);

            view.setVisibility(View.GONE);
        }
    });
  }
}
```

OUTPUT

RESULT: The program executed successfully and output is obtained