FEDERAL INSTITUTE OF SCIENCE AND TECHNOLOGY (FISAT)™

HORMIS NAGAR, MOOKKANNOOR

ANGAMALY-683577

'FOCUS ON EXCELLENCE'

MOBILE APPLICATION DEVELOPMENT LAB

.....

LABORATORY RECORD

Name: ROSE MARY CLEEBERT

Branch: MASTER OF COMPUTER APPLICATION

Semester: 3 **Batch: B** **Roll No: 36**

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SCIENCE AND TECHNOLOGY

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University Exam.Reg. No: FIT20MCA-2094

CERTIFICATE

This is to certify that this is a Bonafide record of the Practical work done and submitted to Kerala Technological University in partial fulfillment for the award of the Master Of Computer Applications is a record of the original research work done by ***ROSE MARY CLEEBERT*** *in the* ***Mobile Application Development*** *Laboratory of the Federal Institute of Science andTechnology during the academic year 2021-2022.*

Signature of Staff in Charge

Name:

Date:

Signature of H.O.D

Name:

Date of University practical examination ……

Signature of

Internal Examiner

Signature of

External Examiner

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PROGRAM 1:

Create a Simple Calculator for demonstrating the basic arithmetic operations (+ , - , * , /)

PROCEDURE:

step 1: Start
step 2: Create the xml file .Drag and drop the 2 edittext and 4 button for the arithemetic calculation such as adition, subtraction,division, multiplication.then drag and drop the textview field to view the calculated result.
Step 3: Create the java code file to perform the calculation its initialize the edit Test,button and textview then create the object of each one.
Step 4: Read the two number and it pass to the switch case do the neccesoryoperation.
Step 5: Display the result on the textview field.Step
6: Stop.

MainActivity.java:

```
package com.example.calculator;

import android.support.v7.app.AppCompatActivity;
import android.os.Bundle;
import android.text.TextUtils;
import android.view.View; import
android.widget.Button; import
android.widget.EditText; import
android.widget.TextView;


public class MainActivity extends AppCompatActivity implements View.OnClickListener{


    EditText etNum1;
    EditText etNum2;

    Button  btnAdd;
    Button  btnSub;
    Button btnMult;
    Button btnDiv;

    TextView tvResult;

    String oper = "";

    /** Called when the activity is first created. */
    @Override
    public void onCreate(Bundle savedInstanceState)
      {super.onCreate(savedInstanceState);
      setContentView(R.layout.activity_main);
```

```
        // find the elements
        etNum1 = (EditText) findViewById(R.id.etNum1);
        etNum2 = (EditText) findViewById(R.id.etNum2);

        btnAdd = (Button) findViewById(R.id.btnAdd);
        btnSub = (Button) findViewById(R.id.btnSub);
        btnMult = (Button) findViewById(R.id.btnMult);
        btnDiv = (Button) findViewById(R.id.btnDiv);

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

        // set a listener
        btnAdd.setOnClickListener(this);
        btnSub.setOnClickListener(this);
        btnMult.setOnClickListener(this);
        btnDiv.setOnClickListener(this);

    }

    @Override
    public void onClick(View v) {
        // TODO Auto-generated method stub
        float  num1  =  0;
        float  num2  =  0;
        float result = 0;

        // check if the fields are empty
        if (TextUtils.isEmpty(etNum1.getText().toString())
                || TextUtils.isEmpty(etNum2.getText().toString()))
            {return;
        }
        // read EditText and fill variables with numbers
        num1 = Float.parseFloat(etNum1.getText().toString());
        num2 = Float.parseFloat(etNum2.getText().toString());

        // defines the button that has been clicked and performs the corresponding
operation
        // write operation into oper, we will use it later for output
        switch (v.getId())
            { case R.id.btnAdd:
                oper = "+";
                result = num1 + num2;break;
            case R.id.btnSub:
                oper = "-";
                result = num1 - num2;
                break;
            case R.id.btnMult:
                oper = "*";
                result = num1 * num2;
```

```
            break;
        case R.id.btnDiv:
            oper = "/";


            result = num1 / num2;
            break;
        default:
            break;
    }

    // form the output line
    tvResult.setText(num1 + " " + oper + " " + num2 + " = " + result);
  }
}
```

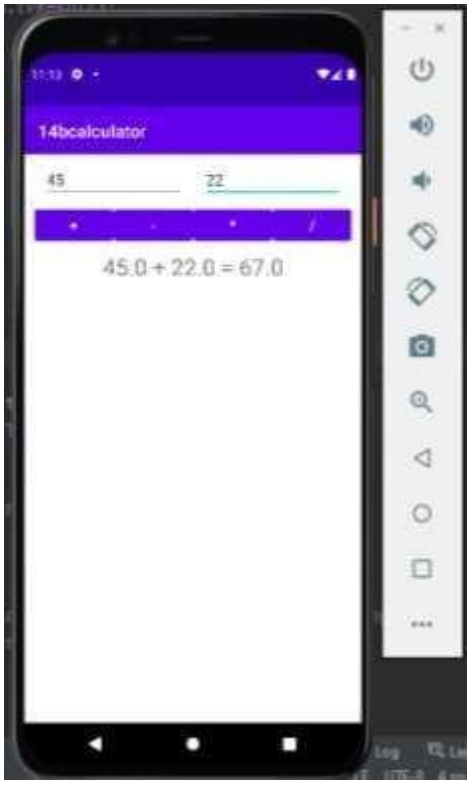
Activity_main.xml:

```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout
  xmlns:android="http://schemas.android.com/apk/res/android"
  android:orientation="vertical" android:layout_width="fill_parent"
  android:layout_height="fill_parent"
  android:weightSum="1">
  <LinearLayout
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:id="@+id/linearLayout1"
    android:layout_marginLeft="10pt"
    android:layout_marginRight="10pt"
    android:layout_marginTop="3pt">
    <EditText
      android:layout_weight="1"
      android:layout_height="wrap_content"
      android:layout_marginRight="5pt"
      android:id="@+id/etNum1"
      android:layout_width="match_parent"
      android:inputType="numberDecimal">
    </EditText>
    <EditText
      android:layout_height="wrap_content"
      android:layout_weight="1"
      android:layout_marginLeft="5pt"
      android:id="@+id/etNum2"
      android:layout_width="match_parent"
      android:inputType="numberDecimal">
     </EditText>
   </LinearLayout>
  <LinearLayout
    android:layout_width="match_parent"
```

```
    android:layout_height="wrap_content"
    android:id="@+id/linearLayout2"
    android:layout_marginTop="3pt"
    android:layout_marginLeft="5pt"
    android:layout_marginRight="5pt">
    <Button
       android:layout_height="wrap_content"
       android:layout_width="match_parent"
       android:layout_weight="1"
       android:text="+" android:textSize="8pt"
       android:id="@+id/btnAdd">
    </Button>
    <Button
       android:layout_height="wrap_content"
       android:layout_width="match_parent"
       android:layout_weight="1" android:text="-
       " android:textSize="8pt"
       android:id="@+id/btnSub">
    </Button>
    <Button
       android:layout_height="wrap_content"
       android:layout_width="match_parent"
       android:layout_weight="1"
       android:text="*" android:textSize="8pt"
       android:id="@+id/btnMult">
    </Button>
    <Button
       android:layout_height="wrap_content"
       android:layout_width="match_parent"
       android:layout_weight="1"
       android:text="/" android:textSize="8pt"
       android:id="@+id/btnDiv">


    </Button>
</LinearLayout>
<TextView
    android:layout_height="wrap_content"
    android:layout_width="match_parent"
    android:layout_marginLeft="5pt"
    android:layout_marginRight="5pt"
    android:textSize="12pt"
    android:layout_marginTop="3pt"
    android:id="@+id/tvResult"
    android:gravity="center_horizontal"
    android:layout_weight="0.07">
```

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

OUTPUT:



PROGRAM 2:

Create an application to concatenate two given Strings.
(Consider changing the color ofthe result string to GREEN*)

Procedure:

Step 1: Start.

Step 2: Create a XML file. Drag and drop 2 EditText to enter 2 strings and 1 Button to concatenate the strings. Then drag and drop a TextView to view the concatenatedstring.

Step 3: Create a JAVA file to perform concatenation. First initialize the 2 EditText, Buttonand TextView then create object for each one.

Step 4: Read 2 strings and perform concatenation ('+') operation with those strings.

Step 5: Display the concatenated string on the TextView field.Step 6:

Stop.

MainActivity.java:

```
package com.example.a14bstrconcat;
import android.os.Bundle;
import android.text.TextUtils;
import android.view.View; import
android.widget.Button; import
android.widget.EditText; import
android.widget.TextView;

import androidx.appcompat.app.AppCompatActivity;

public class MainActivity extends AppCompatActivity implements View.OnClickListener{EditText

    etNum11;
   EditText    etNum22;

   Button     btnconcat;

   TextView    tvResult;

   String oper = "";

   /** Called when the activity is first created. */
```

```
    @Override

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

       // find the elements
       etNum11= (EditText) findViewById(R.id.etNum11);
       etNum22= (EditText) findViewById(R.id.etNum22);

       btnconcat = (Button) findViewById(R.id.btnconcat);tvResult =

       (TextView) findViewById(R.id.tvResult);

       // set a listener
       btnconcat.setOnClickListener(this);

    }

    @Override
    public void onClick(View v) {
       // TODO Auto-generated method stub
       String S1 = "";
       String S2 = "";

       // check if the fields are empty
       if (TextUtils.isEmpty(etNum11.getText().toString())
             || TextUtils.isEmpty(etNum22.getText().toString()))
          {return;
       }
       // read EditText and fill variables with numbersS1 =
       etNum11.getText().toString();
       S2 = etNum22.getText().toString();


       // form the output line
       tvResult.setText(S1 +" "+S2);
    }
}
```

Activity_main.xml:

```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout
    xmlns:android="http://schemas.android.com/apk/res/android"
    android:orientation="vertical" android:layout_width="fill_parent"
    android:layout_height="fill_parent"
    android:weightSum="1">
```

```
<LinearLayout
   android:id="@+id/linearLayout11"
   android:layout_width="wrap_content"
   android:layout_height="159dp"
   android:layout_marginLeft="10pt"
   android:layout_marginTop="3pt"
   android:layout_marginRight="10pt"

   android:orientation="horizontal">

   <EditText android:id="@+id/etNum11"

      android:layout_width="match_parent"
      android:layout_height="wrap_content"
      android:ems="10"
      android:inputType="textPersonName"
      android:text="Name" />

   <EditText android:id="@+id/etNum22"
      android:layout_width="match_parent"
      android:layout_height="wrap_content"
      android:ems="10"
      android:inputType="textPersonName"
      android:text="Name" />

</LinearLayout>

<LinearLayout
   android:layout_width="match_parent"
   android:layout_height="wrap_content"
   android:id="@+id/linearLayout2"
   android:layout_marginTop="3pt"
   android:layout_marginLeft="5pt"
   android:layout_marginRight="5pt">
   <Button
      android:layout_height="wrap_content"
      android:layout_width="match_parent"
      android:layout_weight="1"
      android:text="+" android:textSize="8pt"
      android:id="@+id/btnconcat">
   </Button>
</LinearLayout>
<TextView
   android:layout_height="wrap_content"
   android:layout_width="match_parent"
   android:layout_marginLeft="5pt"
   android:layout_marginRight="5pt"
```

```
        android:textSize="12pt"
        android:layout_marginTop="3pt"
        android:id="@+id/tvResult"
        android:gravity="center_horizontal"

          android:layout_weight="0.07">
    </TextView>
</LinearLayout>
```

OUTPUT:

PROGRAM 3:

Create an android application to find the factorial of a given number.

Procedure:

Step 1: Start

Step 2: Create a XML file. Drag and drop a EditText to enter the number, a Button to findfactorial and a TextView to display the result.

Step 3: Create a JAVA file to find factorial. First initialize the the EditText, Button andTextView then create object for each one.

Step 4: Read the number and perform necessary operations to find factorial.Step 5:

Display the result on the TextView field.

Step 6: Stop.

MainActivity.java

```
package com.example.factorial;
import androidx.appcompat.app.AppCompatActivity;import android.view.View;import
android.widget.Button;
import android.widget.EditText;import android.widget.TextView;import
android.os.Bundle;

public class MainActivity extends AppCompatActivity implementsView.OnClickListener {EditText

    etNum1; Button btnAdd; TextView tvResult;String oper = "";
    /**
     * Called when the activity is first created.
     */
    @Override
    public void onCreate(Bundle savedInstanceState) { super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);

// find the elements

        etNum1 = (EditText) findViewById(R.id.etNum1);

        btnAdd = (Button) findViewById(R.id.btnAdd); tvResult = (TextView)
        findViewById(R.id.tvResult);
```

```
// set a listener

        btnAdd.setOnClickListener(this);

    }

    @Override
    public void onClick(View v) {
// TODO Auto-generated method stud

        float num1 = 0; float fact = 1; float result = 0;

// check if the fields are empty


        num1 = Float.parseFloat(etNum1.getText().toString());

// read EditText and fill variables with numbers


// defines the button that has been clicked and performs the correspondingoperation

// write operation into oper, we will use it later for output

        switch (v.getId()) { case R.id.btnAdd:
                oper = "+";
                for (int i = 1; i <= num1; i++) {fact = fact * i;
                }


                result = fact;break;
            default:
                break;
        }


// form the output line

        tvResult.setText("Factorial of" + " " + num1 + " = " + result);
    }
}
```

Activity_main.xml

```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
    android:layout_width="fill_parent"  android:layout_height="fill_parent"
    android:orientation="vertical" android:weightSum="1">

    <LinearLayout
        android:id="@+id/linearLayout1" android:layout_width="match_parent"
```

```
            android:layout_height="wrap_content" android:layout_marginLeft="10pt"
            android:layout_marginTop="3pt" android:layout_marginRight="10pt">

            <EditText
                android:id="@+id/etNum1" android:layout_width="wrap_content"
                android:layout_height="wrap_content" android:layout_marginRight="5pt"
                android:layout_weight="1" android:inputType="numberDecimal"></EditText>
        </LinearLayout>

        <LinearLayout
android:id="@+id/linearLayout2" android:layout_width="match_parent"
android:layout_height="wrap_content" android:layout_marginLeft="5pt" android:layout_marginTop="3pt"
android:layout_marginRight="5pt">
<Button
android:id="@+id/btnAdd" android:layout_width="match_parent" android:layout_height="wrap_content"
android:layout_weight="1" android:text="RESULT"android:textSize="8pt"></Button>
        </LinearLayout>
<TextView
android:id="@+id/tvResult" android:layout_width="match_parent" android:layout_height="wrap_content"
android:layout_marginLeft="5pt" android:layout_marginTop="3pt" android:layout_marginRight="5pt"
android:layout_weight="0.07" android:gravity="center_horizontal" android:textSize="12pt"></TextView>
 </LinearLayout>
```

OUTPUT :

PROGRAM 4:

Develop a canvas to draw different shapes and to fill the shapeswith different colors.

Procedure:

Step 1: Start.

Step 2: Create 2 JAVA files. CustomView.java for create the shape and set colour it usingpaint and MainActivity.java for display the shape using setContentView.

Step 3: Enter the required measures for the shape and create it then set colour for theshape.

Step 4: Display the shape using setContentView in MainActivity.java file.Step 5:

Stop

MainActivity.java

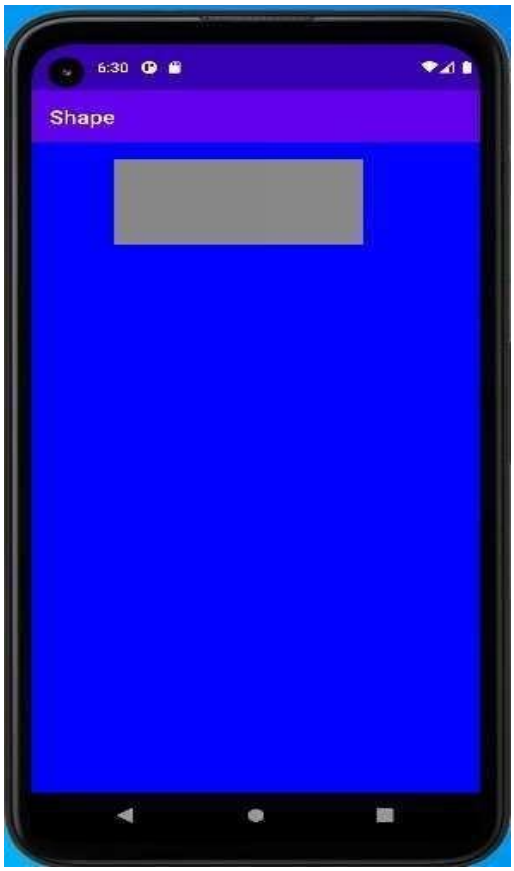
```
package com.example.shape;

import androidx.appcompat.app.AppCompatActivity;import android.os.Bundle;public
class MainActivity extends AppCompatActivity {@Override
        protected void onCreate(Bundle savedInstanceState)
                {super.onCreate(savedInstanceState);
                setContentView(new com.example.shape.CustomView(this));
        }
}
```

CustomView.java

```
package com.example.shape;

import android.content.Context;import android.graphics.Canvas;import
android.graphics.Color; import android.graphics.Paint; import android.graphics.Rect;import
android.view.View;
public class CustomView extends View {private Rect rectangle;
        private Paint paint, p1;

        public CustomView(Context context) {super(context);int x
                = 200;int y = 50;
                int width = 800; int height = 300;
```

```
        // create a rectangle that we'll draw later
        rectangle = new Rect(x, y, width, height);

        // create the Paint and set its colorpaint = new Paint();
        paint.setColor(Color.GRAY);


        p1 = new Paint(); p1.setColor(Color.RED);
    }

    @Override
    protected void onDraw(Canvas canvas) {canvas.drawColor(Color.BLUE);
        canvas.drawRect(rectangle, paint);
    }

}
```

OUTPUT :



PROGRAM 5:

Create an application to show happy face smiley and sad face smiley to demonstrate buttonclick Events.

Procedure:

Step 1: Start

Step 2: Create two activity with buttons.

Step 3: Create a main activity JAVA file which direct the page to another page on the click ofthe button from the activity main.

Step 4: Create another activity java smily with to navigate with the onclick listener to mainactivity page.

Step 5: Create face view class two draw the smily with dimension for happy face with canva drawColor,draw circle,Oval,drawArch.

Step 6: Create another face view to draw the smily with dimensions for sad face with canva drawColor,draw circle,Oval,drawArch.

Step 7: Stop.

MainActivity.java

```
package com.example.a5happyface;
import androidx.appcompat.app.AppCompatActivity;import android.content.Intent; import
android.os.Bundle; import android.view.View; import android.widget.Button;

 public class MainActivity extends AppCompatActivity {Button button;

        @Override
        protected void onCreate(Bundle savedInstanceState)
              { super.onCreate(savedInstanceState);
              setContentView(R.layout.activity_main);button
                        = (Button) findViewById(R.id.button); button.setOnClickListener(new
              View.OnClickListener() {
                    @Override
                    public void onClick(View v) {openNewActivity();
                    }
              });


        }

        public void openNewActivity() {
                  Intent intent = new Intent(this, MainActivity2.class);startActivity(intent);
        }
}
```

Activity_main.xml

```
<?xml version="1.0" encoding="utf-8"?>
 <RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
        xmlns:tools="http://schemas.android.com/tools" android:layout_width="wrap_content"
        android:layout_height="wrap_content"android:orientation="vertical"
        tools:context=".MainActivity">
        <com.example.a5happyface.FaceView android:layout_width="wrap_content"
              android:layout_height="wrap_content" />
        <Button
              android:id="@+id/button"     android:layout_width="match_parent"


              android:layout_height="wrap_content"   android:text="--->  Sad
Face" />
</RelativeLayout>
```

MainActivity2.java

```
package com.example.a5happyface;

import android.content.Intent;import android.os.Bundle; import android.view.View; import
android.widget.Button;
import androidx.appcompat.app.AppCompatActivity; public class MainActivity2 extends
AppCompatActivity {
        Button button1;@Override
        protected void onCreate(Bundle savedInstanceState)
        { super.onCreate(savedInstanceState); setContentView(R.layout.activity_main2);
              button1
                    = (Button) findViewById(R.id.button1); button1.setOnClickListener(new
              View.OnClickListener() {
                    @Override
                    public void onClick(View v) {openNewActivity();
                    }
              });


        }
        public void openNewActivity(){
              Intent intent1 = new Intent(this,MainActivity.class);startActivity(intent1);
        }
}
```

Activity_main2.xml

```
<?xml version="1.0" encoding="utf-8"?>
 <RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
        android:layout_width="match_parent"
android:layout_height="match_parent">
        <com.example.a5happyface.FaceView2 android:layout_width="wrap_content"
              android:layout_height="wrap_content" />
        <Button
              android:id="@+id/button1" android:layout_width="match_parent"
              android:layout_height="wrap_content" android:text="---> Happy Face"  />
</RelativeLayout>
```

FaceView.java

```
package com.example.a5happyface;


import android.content.Context; import android.graphics.Canvas; import android.graphics.Color;
import android.graphics.Paint; import android.graphics.RectF; importandroid.util.AttributeSet;import
android.view.View;
public class FaceView extends View {
        private static final String COLOR_HEX = "WHITE";private final Paint mPaint; private float xPosition;
                private float yPosition; privatefloat radius; private float strokeWidth
        = 20; private float defaultScale = 0.90f; privatefloat
        eyeRadius = 60; private float
                eyeYPosition; private float leftEyeXPosition;private float rightEyeXPosition;public
        FaceView(Context context, AttributeSet attrs) {super(context, attrs); mPaint =
              new Paint(); mPaint.setAntiAlias(true);
        }


        @Override
        protected void onDraw(Canvas canvas) { super.onDraw(canvas);
              mPaint.setColor(Color.parseColor(COLOR_HEX));
              mPaint.setStrokeWidth(strokeWidth); mPaint.setStyle(Paint.Style.STROKE);
              canvas.drawPaint(mPaint);canvas.drawColor(Color.BLACK);
              // drawing outer circle

              // lets setup x cord, y cord, radius

 // x, y position should point to center. //radius should be half the width

 / height


                        xPosition = getMeasuredWidth() / 2;yPosition = getMeasuredHeight() / 2;radius =
              xPosition < yPosition ? xPosition : yPosition ;radius *= defaultScale;
              canvas.drawCircle(xPosition, yPosition, radius, mPaint);
              // Drawing Eyes.

              // lets find eye y position
```

```
            eyeYPosition = (float) (yPosition / 1.2);
            // lets find eye x position

            leftEyeXPosition = xPosition < yPosition ? xPosition / 2 : (float)(xPosition / 1.3);

// lets find right eye x position

            rightEyeXPosition = xPosition < yPosition ? xPosition + xPosition /
2 :
                    xPosition + xPosition / 4;
            // left eye

            canvas.drawCircle(leftEyeXPosition, eyeYPosition, eyeRadius,
mPaint);
            // right eye

           canvas.drawCircle(rightEyeXPosition, eyeYPosition, eyeRadius,mPaint);
            // lets draw mouth.



            RectF oval = new RectF(leftEyeXPosition, yPosition + yPosition /
12,rightEyeXPosition, (float) (yPosition + yPosition / 2.5));
 // left top rightbottom

                    canvas.drawArc(oval, 10, 150, false, mPaint); // happy
face.
```

FaceView2.java

```
package com.example.a5happyface;

import android.content.Context; import android.graphics.Canvas; import android.graphics.Color;
import android.graphics.Paint; import android.graphics.RectF; importandroid.util.AttributeSet;import
android.view.View;
public class FaceView2 extends View {
    private static final String COLOR_HEX = "WHITE";private final Paint mPaint; private float xPosition;
            private float yPosition; privatefloat radius; private float strokeWidth
    = 20; private float defaultScale = 0.90f; privatefloat
    eyeRadius = 60; private float
            eyeYPosition; private float leftEyeXPosition;private float rightEyeXPosition;public
    FaceView2(Context context, AttributeSet attrs)
    { super(context, attrs); mPaint = new Paint(); mPaint.setAntiAlias(true);
    }
    @Override
    protected void onDraw(Canvas canvas) { super.onDraw(canvas);
        mPaint.setColor(Color.parseColor(COLOR_HEX));
        mPaint.setStrokeWidth(strokeWidth); mPaint.setStyle(Paint.Style.STROKE);
        canvas.drawPaint(mPaint); canvas.drawColor(Color.BLACK);
```

```
            // drawing outer circle


            // lets setup x cord, y cord, radius
 // x, y position should point to center.
 // radius should be half the width / height xPosition = getMeasuredWidth() / 2; yPosition =
            getMeasuredHeight() / 2;
            radius = xPosition < yPosition ? xPosition : yPosition ;radius *= defaultScale;
            canvas.drawCircle(xPosition, yPosition, radius, mPaint);
            // Drawing Eyes.
            // lets find eye y position
            eyeYPosition = (float) (yPosition / 1.2);
            // lets find eye x position
            leftEyeXPosition = xPosition < yPosition ? xPosition / 2 : (float)(xPosition / 1.3);
            // lets find right eye x position
                rightEyeXPosition = xPosition < yPosition ? xPosition + xPositio
/ 2 :

            xPosition + xPosition / 4;
 // left eye


canvas.drawCircle(leftEyeXPosition, eyeYPosition, eyeRadius,
mPaint);
            // right eye
           canvas.drawCircle(rightEyeXPosition, eyeYPosition, eyeRadius,mPaint);
            // lets draw mouth.
             RectF oval = new RectF(leftEyeXPosition, yPosition + yPosition /
rightEyeXPosition, (float) (yPosition + yPosition / 2)); //left top right bottom
              canvas.drawArc(oval, 200, 140, false, mPaint); // sad face.
        }
}
```

OUTPUT:

PROGRAM 6:

Create an application to demonstrate the use of Intents to communicate between different activity.

Procedures:

Implicit intent

Step1:create Xml file and Java file.

Step2:Open activity_main.xml file and add editText to input text and button to open web page in a constraint layout.Alsoadd IDs for each component.

Step3:Open MainActivity.java file and instantiate the button created in the xml file using findViewById() method.This metodbinds the created object to the UI components with the help ofassigned ID.

Step4:To display toast message,first add listener on button and this button will openwebpage.

Step5:Create string type variable to store the value of EditText.Value is accepted and converted to string.

Step7:Create an intent object Mainactivity.java class to of the webpage.

Step8:The start activity() method starts to call a webpage for opening specified by intent.

Explicit intent

Step1:create xml file and java file.

Step2:Open activity_main.xml and add a button for moving to second activity andaTextview for viewing some text.Also add IDs for each components.

Step3:Open MainActivity.java file and instantiate the button,textview created in the xml fileusing findViewByid.This

method binds the created object to the UI components with the assigned id.

Step4:To create explicit intent,first add the listener on button and using this button youwill move to other activity.Now create an intent and start the targeted activity.

Step5:Now we have to create a second activity as a destination activity.

Step6:open second xml file.Add button and textview to moving back to home activity andto write some text on activity.Assign id to button and textview.

Step7:open second activity java file.first add the listener on button and using this buttonmove to home activity.create an intent and start the targeted activity.

MainActivity.java

```
package com.example.a6intents;
import androidx.appcompat.app.AppCompatActivity;import android.content.Intent; import
android.net.Uri; import android.os.Bundle; import android.view.View; import
android.widget.Button;

public class MainActivity extends AppCompatActivity {Button button;
    @Override
        protected void onCreate(Bundle savedInstanceState)
            { super.onCreate(savedInstanceState); setContentView(R.layout.activity_main);
            button=findViewById(R.id.button);
     //button.setOnClickListener(this);

    }
    public void show(View view){
            Intent intent = new Intent(Intent.ACTION_VIEW);
            intent.setData(Uri.parse("https://www.fisat.ac.in")); startActivity(intent);
    }

    public void callSecondActivity(View view){
             Intent i=new Intent(getApplicationContext(),MainActivity2.class);startActivity(i);
    }
     }
```

Activity_main.xml

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

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=".MainActivity"> TextView android:layout_width="wrap_content"
android:layout_height="wrap_content" android:layout_marginEnd="8dp"
android:layout_marginStart="8dp" android:layout_marginTop="8dp"
android:text="First Activity"


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" />
<Button
        android:id="@+id/button" android:layout_width="wrap_content"
        android:layout_height="wrap_content" android:layout_marginEnd="8dp"
        android:layout_marginStart="8dp" android:layout_marginTop="392dp"
        android:onClick="callSecondActivity" android:text="Call second activity"
        app:layout_constraintEnd_toEndOf="parent" app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent" />

<Button     android:id="@+id/button3" android:layout_width="wrap_content"
        android:layout_height="wrap_content" android:onClick="show" android:text="implicit
        intent"tools:layout_editor_absoluteX="135dp"tools:layout_editor_absoluteY="204dp" />
 </androidx.constraintlayout.widget.ConstraintLayout>
```

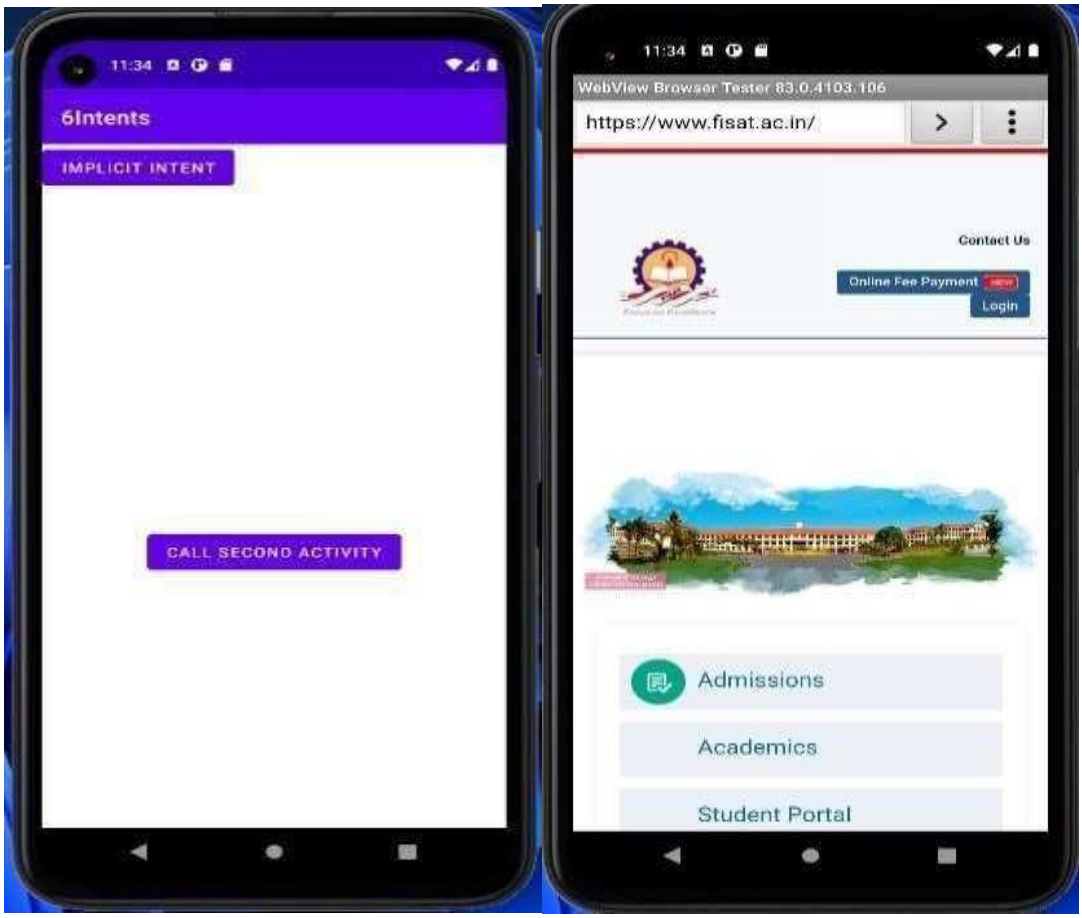
MainActivity2.java

```
package com.example.a6intents;

import androidx.appcompat.app.AppCompatActivity;import android.content.Intent; import
android.os.Bundle; import android.view.View; import android.widget.Button;
public class MainActivity2 extends AppCompatActivity {Button button;
    @Override
    protected void onCreate(Bundle savedInstanceState)
        { super.onCreate(savedInstanceState); setContentView(R.layout.activity_main2);
            Bundle
                extras = getIntent().getExtras();button=findViewById(R.id.button);
    }
    public void callFirstActivity(View view){
        Intent i=new Intent(getApplicationContext(),MainActivity.class);startActivity(i);
    }
     }
```

Activity_main2.xml

```
package com.example.a6intents;

import androidx.appcompat.app.AppCompatActivity;


import android.content.Intent;import android.os.Bundle; import android.view.View;import
android.widget.Button;
public class MainActivity2 extends AppCompatActivity {Button button;
    @Override
    protected void onCreate(Bundle savedInstanceState)
        { super.onCreate(savedInstanceState); setContentView(R.layout.activity_main2);
            Bundle
                extras = getIntent().getExtras();button=findViewById(R.id.button);
    }
    public void callFirstActivity(View view){
            Intent i=new Intent(getApplicationContext(),MainActivity.class);startActivity(i);
    }
     }
```

OUTPUT:




11:35
6Intents
GO BACK TO 1ST ACTIVITY

PROGRAM 7:

Create an android application to demonstrate storing data intointernal phone memory.

Procedures:

Step1:create Xml file and Java file.

Step2:Open activity_main.xml file and add editText to input text and button to open webpage in a constraint layout.

Step3:Open MainActivity.java file and instantiate the button and edittext created in the xmlfile using findViewById() method.This metod binds the created object to the UI components with the help of assigned ID.

Step4:To display the information null file should be created using FILEOUTPUTSTREAM.

Step5:Create string type variable to store the value of EditText.Value is accepted and converted to string.

Step7:Create an intent object Mainactivity.java class to open the webpage.

Step8:The start activity() method starts to call a webpage for opening specified by intent.

INTENT

Step1:create java file.

Step2:Open activity_main.xml and by using findViewById get the values passed from the first MainActivity.java file.

Step3:To create intent,first add the listener on button and using this button you will move toother activity.Now create an intent and start the targeted activity.

Step4:Using fileInputStream the intented file will display the content passed by theMainActivity.java file.

MainActivity.java

```
package com.example.a7storingdata;


import androidx.appcompat.app.AppCompatActivity;import android.os.Bundle;
import android.content.Context;import android.content.Intent; import android.view.View;import
android.widget.EditText;import android.widget.Toast; import java.io.File;
import java.io.FileOutputStream;import java.io.IOException;
```

```
public class MainActivity extends AppCompatActivity {EditText editname,editpass;
    @Override
    protected void onCreate(Bundle savedInstanceState)
        { super.onCreate(savedInstanceState); setContentView(R.layout.activity_main);
        editname = (EditText) findViewById(R.id.editName);editpass= (EditText)
        findViewById(R.id.editPass);
    }

    public void save(View view)  // SAVE
    {
        File file= null;
        String name = editname.getText().toString(); String password =editpass.getText().toString();

        FileOutputStream fileOutputStream = null;try { name =
            name + " "; file = getFilesDir(); fileOutputStream =
            openFileOutput("Code.txt",
 Context.MODE_PRIVATE); //MODE PRIVATE

            fileOutputStream.write(name.getBytes()); fileOutputStream.write(password.getBytes());
            Toast.makeText(this, "Saved
            \n" + "Path --" + file +
 "\tCode.txt", Toast.LENGTH_SHORT).show();editname.setText(""); editpass.setText("");return;
        } catch (Exception ex) { ex.printStackTrace();
        } finally {
            try  { fileOutputStream.close();

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

    public void   next( View view)                //NEXT
    {
        Toast.makeText(this,"NEXT", Toast.LENGTH_SHORT).show();Intent intent= new
        Intent(this, MainActivity2.class); startActivity(intent);


    }
}
```

Activity_main.xml

```
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools" android:id="@+id/activity_main"
    android:layout_width="match_parent" android:layout_height="match_parent"
    tools:context="com.example.a7storingdata.MainActivity">
```

```
<TextView
        android:text="@string/name" android:layout_width="wrap_content"
        android:layout_height="wrap_content" android:layout_alignParentTop="true"
        android:layout_alignParentLeft="true" android:layout_alignParentStart="true"
        android:layout_marginLeft="51dp" android:layout_marginStart="51dp"
        android:layout_marginTop="59dp" android:id="@+id/txtname"
        android:textStyle="bold|italic" android:textSize="18sp" />

<TextView
        android:text="@string/password" android:layout_width="wrap_content"
        android:layout_height="wrap_content" android:layout_below="@+id/txtname"
        android:layout_alignLeft="@+id/txtname" android:layout_alignStart="@+id/txtname"
        android:layout_marginTop="56dp" android:id="@+id/txtpass"
        android:textStyle="bold|italic" android:textSize="18sp" />

<EditText
        android:id="@+id/editName" android:layout_width="wrap_content"
        android:layout_height="wrap_content" android:layout_alignParentTop="true"
        android:layout_marginStart="21dp" android:layout_marginLeft="21dp"
        android:layout_marginTop="48dp"  android:layout_toEndOf="@+id/txtpass"


        android:layout_toRightOf="@+id/txtpass" android:ems="8"
        android:inputType="textPersonName" />

<EditText
        android:id="@+id/editPass" android:layout_width="wrap_content"
        android:layout_height="wrap_content" android:layout_below="@+id/editName"
        android:layout_alignStart="@+id/editName" android:layout_alignLeft="@+id/editName"
        android:layout_marginTop="35dp" android:ems="10" android:inputType="textPassword" />


<Button
        android:text="@string/save" android:layout_width="wrap_content"
        android:layout_height="wrap_content" android:layout_below="@+id/editPass"
        android:layout_alignLeft="@+id/txtpass" android:layout_alignStart="@+id/txtpass"
        android:layout_marginTop="86dp" android:id="@+id/button" android:onClick="save"/>
        // OnClick "save"
```

```
    <Button
        android:text="@string/next" android:layout_width="wrap_content"
        android:layout_height="wrap_content" android:layout_alignTop="@+id/button"
        android:layout_alignRight="@+id/editName" android:layout_alignEnd="@+id/editName"
        android:layout_marginRight="25dp" android:layout_marginEnd="25dp"
        android:id="@+id/button2" android:onClick="next"/> // OnClick "next"
</RelativeLayout>
```

MainActivity2.java

```
package com.example.a7storingdata;

import androidx.appcompat.app.AppCompatActivity;import android.os.Bundle; import
android.content.Intent;import android.util.Log; import android.view.View;import
android.widget.TextView;import android.widget.Toast; import java.io.FileInputStream;
public class MainActivity2 extends AppCompatActivity {TextView getname, getpass;
    @Override
    protected void onCreate(Bundle savedInstanceState)
        {super.onCreate(savedInstanceState);


        setContentView(R.layout.activity_main2); getname =
        (TextView)findViewById(R.id.getname);getpass =
        (TextView)findViewById(R.id.getpass);

    }
    public void load(View view)
    {
        try {
            FileInputStream fileInputStream = openFileInput("Code.txt");int read = -1;
            StringBuffer buffer = new StringBuffer(); while((read
            =fileInputStream.read())!= -1){ buffer.append((char)read);
            }
            Log.d("Code", buffer.toString());
            String name = buffer.substring(0,buffer.indexOf(" "));String pass =
            buffer.substring(buffer.indexOf(" ")+1);getname.setText(name);
            getpass.setText(pass);
        } catch (Exception e) { e.printStackTrace();
        }
        Toast.makeText(this,"Loaded", Toast.LENGTH_SHORT).show();

    }
```

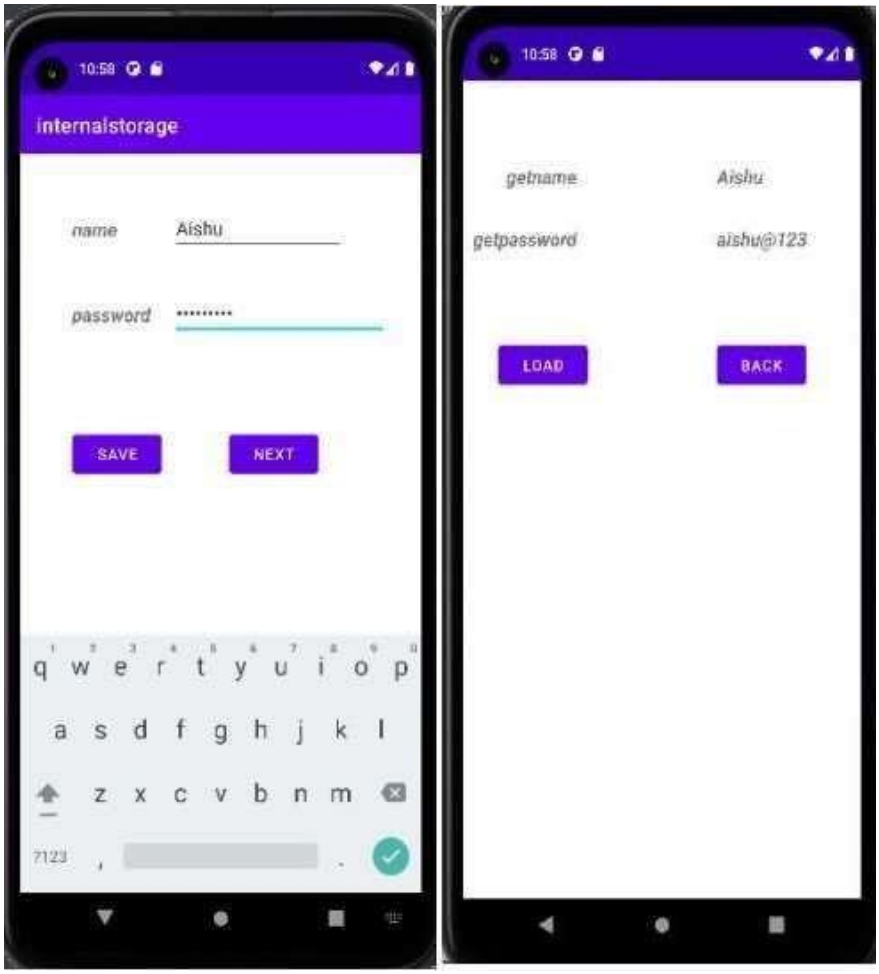
```
    public void back( View view)
    {
        Toast.makeText(this,"Back", Toast.LENGTH_SHORT).show();Intent intent= newIntent(this,
        MainActivity.class); startActivity(intent);
    }
}
```

Activity_main2.xml

```
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools" android:id="@+id/activity_main2"
    android:layout_width="match_parent" android:layout_height="match_parent"
    tools:context="com.example.a7storingdata.MainActivity2">

    <TextView
        android:text="@string/getname" android:layout_width="wrap_content"
        android:layout_height="wrap_content" android:layout_alignParentTop="true"
        android:layout_alignRight="@+id/button3" android:layout_alignEnd="@+id/button3"
        android:layout_marginRight="11dp"android:layout_marginEnd="11dp"
        android:layout_marginTop="76dp" android:id="@+id/textView3"
        android:textSize="18sp" android:textStyle="bold|italic" />

    <TextView
        android:text="@string/getpassword"
        android:layout_width="wrap_content" android:layout_height="wrap_content"
        android:layout_below="@+id/textView3" android:layout_alignRight="@+id/textView3"
        android:layout_alignEnd="@+id/textView3" android:layout_marginTop="33dp"
        android:id="@+id/textView4" android:textStyle="bold|italic" android:textSize="18sp"
        />

    <TextView
        android:layout_width="wrap_content" android:layout_height="wrap_content"
        android:layout_above="@+id/textView4" android:layout_alignLeft="@+id/button4"
        android:layout_alignStart="@+id/button4" android:id="@+id/getname"
        android:textStyle="bold|italic" android:textSize="18sp" />
```

```
    <TextView
        android:layout_width="wrap_content" android:layout_height="wrap_content"
        android:layout_alignBottom="@+id/textView4" android:layout_alignLeft="@+id/getname"
        android:layout_alignStart="@+id/getname" android:id="@+id/getpass"
        android:textStyle="bold|italic" android:textSize="18sp" />

    <Button
        android:text="@string/load" android:layout_width="wrap_content"
        android:layout_height="wrap_content" android:id="@+id/button3"
        android:layout_marginLeft="35dp" android:layout_marginStart="35dp"
        android:onClick="load" android:layout_below="@+id/textView4"
        android:layout_alignParentLeft="true" android:layout_alignParentStart="true"
        android:layout_marginTop="80dp" />

    <Button
        android:text="@string/back" android:layout_width="wrap_content"
        android:layout_height="wrap_content" android:layout_marginRight="54dp"
        android:layout_marginEnd="54dp" android:id="@+id/button4" android:onClick="back"
        android:layout_alignBaseline="@+id/button3" android:layout_alignBottom="@+id/button3"
        android:layout_alignParentRight="true" android:layout_alignParentEnd="true" />

</RelativeLayout>
```

OUTPUT:


10:58
internalstorage
name
Aishu
password
SAVE
NEXT
10:58
getname
Aishu
getpassword
aishu@123
LOAD
BACK

PROGRAM 8:

Create an android application to demonstrate GridView

Step1:create Xml file and Java file.

Step2:Open activity_main.xml file and add GridView Layout.

Step3:Open MainActivity.java file and instantiate the gridview created in the xml file usingfindViewById()method.

Then create setAdapter for the gridview.

IMAGEADAPTER

Step1:Create a new Imageadapter.java file. The class ImageAdapter will extend the

BaseAdapter.

Step7:The BaseAdapter set Gridview for the images.

Step8:Using R.drawable will assign the imageView.

MainActivity.java

```
package com.example.prgm8;


import androidx.appcompat.app.AppCompatActivity;import android.os.Bundle;
import android.app.Activity; import android.view.Menu; import android.widget.GridView;

public class MainActivity extends Activity {@Override protected
	void onCreate(Bundle savedInstanceState) {
		super.onCreate(savedInstanceState); setContentView(R.layout.activity_main);


		GridView gridview = (GridView) findViewById(R.id.gridview);
		gridview.setAdapter(new ImageAdapter(this));
	}
}
```

Activity_main.xml

```
<?xml version="1.0" encoding="utf-8"?>
<GridView xmlns:android="http://schemas.android.com/apk/res/android"android:id="@+id/gridview"
	android:layout_width="fill_parent" android:layout_height="fill_parent"
	android:columnWidth="120dp" android:numColumns="3"
	android:verticalSpacing="10dp" android:horizontalSpacing="10dp"
	android:stretchMode="columnWidth" android:gravity="center"
/>
```

ImageAdapter.java

```
package com.example.prgm8;

import android.content.Context;import android.view.View; import
android.view.ViewGroup;
import android.widget.BaseAdapter;import android.widget.GridView; import
android.widget.ImageView;

class ImageAdapter extends BaseAdapter {private Context mContext;public
ImageAdapter(Context c) {mContext = c;

        }

        public int getCount() { return picIds.length;
        }

        public Object getItem(int position) {return null;
        }
        public long getItemId(int position) {return 0;
        }

        // create a new ImageView for each item referenced by the Adapter

        public View getView(int position, View convertView, ViewGroup parent) {ImageView
                imageView;

                if (convertView == null) {
                        imageView = new ImageView(mContext);imageView.setLayoutParams(new
                                        GridView.LayoutParams(85,85));

                         imageView.setScaleType(ImageView.ScaleType.CENTER_CROP);

                        imageView.setPadding(8,8,8,8);
                }
                else
                {
                        imageView = (ImageView) convertView;
                }


                imageView.setImageResource(picIds[position]);   return   imageView;
        }

 // Keep all Images in arraypublic Integer[] picIds = {R.drawable.sample2,
        R.drawable.sample3, R.drawable.sample4, R.drawable.sample5,
        R.drawable.sample6, R.drawable.sample7, R.drawable.sample0,
        R.drawable.sample1, R.drawable.sample2, R.drawable.sample3,
        R.drawable.sample4, R.drawable.sample5, R.drawable.sample6,
        R.drawable.sample7, R.drawable.sample0, R.drawable.sample1,
        R.drawable.sample2, R.drawable.sample3, R.drawable.sample4, R.drawable.sample5
```

R.drawable.*sample7*,R.drawable.*sample0*,R.drawable.*sample1*

};
}

OUTPUT :

PROGRAM 9:

Demonstrate ImageView and GridView

Procedure:

GridView

Step 1: Creating a New Project
Step 2: Add google repository in the build.gradle file of the application project.Step 3: Modify the activity_main.xml file
Step 4: Create an XML layout file for each item of GridViewStep
5: Create a Modal Class for storing Data
Step 6: Create an Adapter Class
Step 7: Modify the MainActivity.java file

Image View

Step 1: Create a New Project
Step 2: Working with the activity_main.xml fileStep
3: Working with the MainActivity file

MainActivity.java

```
package com.example.prgm9;
import androidx.appcompat.app.AppCompatActivity;import android.app.Activity; import
android.content.Intent;import android.os.Bundle; import android.view.View;import
android.widget.AdapterView;import android.widget.GridView;

public class MainActivity extends Activity {@Override protected
    void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState); setContentView(R.layout.activity_main);

        GridView gridview = (GridView) findViewById(R.id.gridview);
        gridview.setAdapter(new ImageAdapter(this));

        gridview.setOnItemClickListener(new AdapterView.OnItemClickListener() { public void
            onItemClick(AdapterView<?> parent, View v, intposition, long
id){

// Send intent to SingleViewActivity

            Intent i = new Intent(getApplicationContext(),SingleViewActivity.class);
// Pass image index

                i.putExtra("id", position);startActivity(i);
            }
        });
    }
}
```

Activity_main.xml

```
<?xml version="1.0" encoding="utf-8"?>
<GridView xmlns:android="http://schemas.android.com/apk/res/android"android:id="@+id/gridview"
    android:layout_width="fill_parent" android:layout_height="fill_parent"
    android:columnWidth="120dp" android:numColumns="3"
    android:verticalSpacing="10dp" android:horizontalSpacing="10dp"
    android:stretchMode="columnWidth"


    android:gravity="center"
    />
```

ImageAdapter.java

```
package com.example.prgm9;

import android.content.Context;import android.view.View; import
android.view.ViewGroup;
import android.widget.BaseAdapter;import android.widget.GridView; import
android.widget.ImageView;

class ImageAdapter extends BaseAdapter {private Context mContext;

    // Constructor

    public ImageAdapter(Context c) {mContext = c;
    }

    public int getCount() { return picIds.length;
    }

    public Object getItem(int position) {return null;
    }

    public long getItemId(int position) {


        return 0;
    }


    // create a new ImageView for each item referenced by the Adapter
```

```
        public View getView(int position, View convertView, ViewGroup parent) {ImageView
                imageView;

                if (convertView == null) {
                        imageView = new ImageView(mContext);imageView.setLayoutParams(new
                                        GridView.LayoutParams(85, 85));

                        imageView.setScaleType(ImageView.ScaleType.CENTER_CROP);  imageView.setPadding(8,  8,  8,
                        8);
                } else {
                        imageView = (ImageView) convertView;
                }

                imageView.setImageResource(picIds[position]);    return    imageView;


        }

// Keep all Images in arraypublic Integer[] picIds = {R.drawable.sample2,


                  R.drawable.sample3,
                  R.drawable.sample4,
                  R.drawable.sample5,
                  R.drawable.sample6,
                  R.drawable.sample7,
                  R.drawable.sample0,
                  R.drawable.sample1,
                  R.drawable.sample2,
                  R.drawable.sample3,
                  R.drawable.sample4,
                  R.drawable.sample5,
                  R.drawable.sample6,
                  R.drawable.sample7,
                  R.drawable.sample0,
                  R.drawable.sample1,
                  R.drawable.sample2,
                  R.drawable.sample3,
                  R.drawable.sample4,
                  R.drawable.sample5,
                  R.drawable.sample6,
                  R.drawable.sample7, R.drawable.sample0,
                  R.drawable.sample1
        };
 }
```

SingleViewActivity.java

```
package com.example.prgm9;
import androidx.appcompat.app.AppCompatActivity;import android.app.Activity;import
android.content.Intent;import android.os.Bundle;
import android.widget.ImageView;
public class SingleViewActivity extends AppCompatActivity {@Override
        protected void onCreate(Bundle savedInstanceState) {
                super.onCreate(savedInstanceState);
                setContentView(R.layout.activity_single_view);
                // Get intent data

                Intent i = getIntent();

// Selected image id

                int position = i.getExtras().getInt("id"); ImageAdapter imageAdapter = newImageAdapter(this);

                ImageView imageView = (ImageView) findViewById(R.id.SingleView);



                imageView.setImageResource(imageAdapter.picIds[position]);
        }
}
```

Activity_single_view.xml

```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout
        xmlns:android="http://schemas.android.com/apk/res/android"
        android:layout_width="match_parent" android:layout_height="match_parent"
        android:orientation="vertical" >

        <ImageView android:id="@+id/SingleView" android:layout_width="fill_parent"
                android:layout_height="fill_parent"/>

</LinearLayout>
```

OUTPUT:


6:34
prgm9

PROGRAM 10:

Demonstration of Toggle Button

Procedure:

Step 1: START

Step 2: Create Xml file and Java file.

Step 2: Open activity_main.xml file and one Image View to display image andone button to change images in a frame layout.

Step 3: Download three images and name it piq1.jpg, buttonback.jpg, andpic2.jpg etc and paste it in /src/drawable/ folder.

Step 4: Open MainActivity.java file and import the libraries that are needed.

Step 5: Instantiate the button and Image View created in the xml file using findViewById() method. This method binds the created object to the UI components with the help of assigned ID.

Step 6: By clicking the button with buttonback.jpg, it changes the images between piq1.jpg and pic2.jpg.

Step 7: STOP

MAINACTIVITY.JAVA

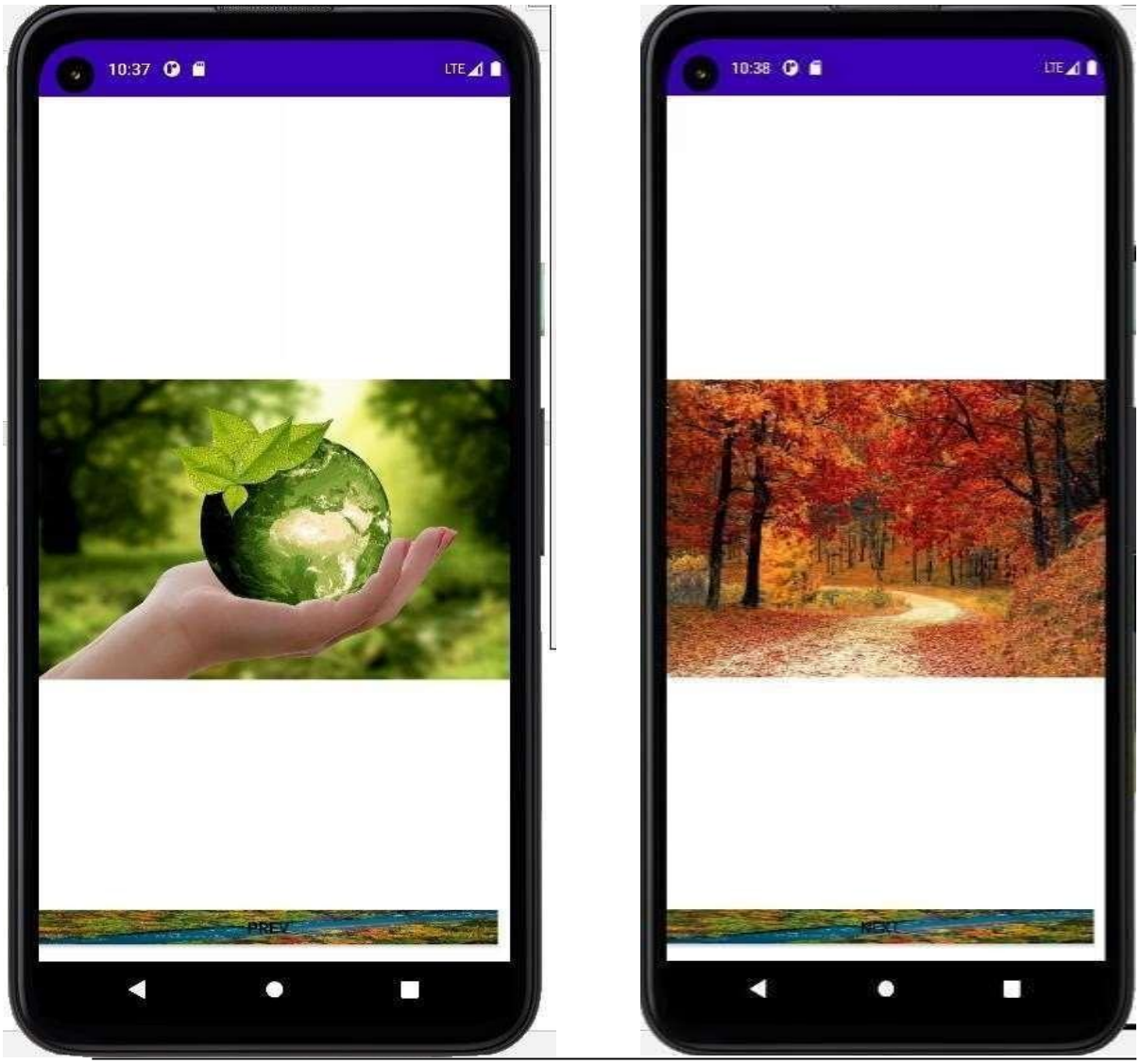
```
package com.example.togglebutton;

import android.app.Activity; import android.view.View; import android.widget.Button;import
android.widget.ImageView; import android.os.Bundle;
public class MainActivity extends Activity { String s = "Next";
   @Override
   protected void onCreate(Bundle
                           savedInstanceState) {
// TODO Auto-generated method stub super.onCreate(savedInstanceState);
      setContentView(R.layout.activity_main); Button next= (Button)

            findViewById(R.id.next); next.setText(s); next.setOnClickListener(newView.OnClickListener()
                        {@Override
                           public void onClick(View v) { if (s.equals("Next")) {
// TODO Auto-generated method stub


                              ImageView img = (ImageView) findViewById(R.id.imageview);
                              img.setImageResource(R.drawable.pic1); Button next= (Button)
                                    findViewById(R.id.next); s = "Prev";
                              next.setText(s);
                           } else {
                              ImageView img = (ImageView) findViewById(R.id.imageview);

                              img.setImageResource(R.drawable.pic2); Button next= (Button)
                                    findViewById(R.id.next); s = "Next";
                              next.setText(s);
```

```
                                    };

}
});
    }
 }
```

ACTIVITY_MAIN.XML

```
<?xml version="1.0" encoding="utf-8"?>
<FrameLayout xmlns:android="http://schemas.android.com/apk/res/android"
   android:layout_width="fill_parent"
   android:layout_height="fill_parent">
   <ImageView android:id="@+id/imageview" android:layout_width="fill_parent"
      android:layout_height="fill_parent" android:scaleType="fitCenter"
      android:src="@drawable/pic1" />
   <Button android:id="@+id/next" android:layout_width="wrap_content"
      android:layout_height="30dp"
      android:layout_marginBottom="15dp" android:layout_marginRight="10dp"
      android:layout_gravity="bottom|right" android:paddingTop="2dp" android:paddingBottom="2dp"
      android:background="@drawable/buttonback"android:textColor="#000000" android:text="Next"
      />

</FrameLayout>
```

OUTPUT



PROGRAM 11:

Demonstration of options menu

Procedure:

Step 1: Start
Step 2: Create xml and java file Step 3:
Create optionsmenu.xml file
Step 4: Open optionsmenu.xml file, and add one or more items to your optionsmenu depending on the needs.
Step 5: Open main_activity.java file and import necessary libraries
Step 6: Inflate the menu resources using onCreateOptionsMenu() method.
Step 7: Detect user interaction by add the onOptionsItemSelected methodoutline after the onCreateOptionsMenu() method.
Step 8: Respond to Menu Item Selection by using switch statement to yourmethod.
Step 9: Stop

MAINACTIVITY.JAVA

```
import androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle;
import android.view.Menu; import
android.view.MenuItem; import
android.widget.TextView;import
android.widget.Toast;
import androidx.appcompat.app.AppCompatActivity;
public class MainActivity extends AppCompatActivity {
// TextView tvMsg;
@Override
protected void onCreate(Bundle savedInstanceState) {

super.onCreate(savedInstanceState);
setContentView(R.layout.activity_main);
// tvMsg= (TextView) findViewById(R.id.textView);
}
// Overriding onCreateoptionMenu() to make Option menu
@Override
public boolean onCreateOptionsMenu(Menu menu) {
//Inflating menu by overriding inflate() method of
MenuInflater class.
//Inflating here means parsing layout XML to views.
getMenuInflater().inflate(R.menu.menucontext, menu);return
true;
}
//Overriding onOptionsItemSelected to perform event on menu
```

```
items
@Override
public boolean onOptionsItemSelected(MenuItem menuItem) {

Toast.makeText(this, "The MENU ITEM Selected : " +
menuItem.getTitle(), Toast.LENGTH_LONG).show(); switch
(menuItem.getItemId()) {
case R.id.search:
//Your code here
return true;
case R.id.find:
//Your code here
return true;
case R.id.edit:
//Your code here
return true;
case R.id.relocate:
//Your code here
return true;
case R.id.exit:
//Your code here
return true;
default:
return super.onOptionsItemSelected(menuItem);
}
}
}}
```

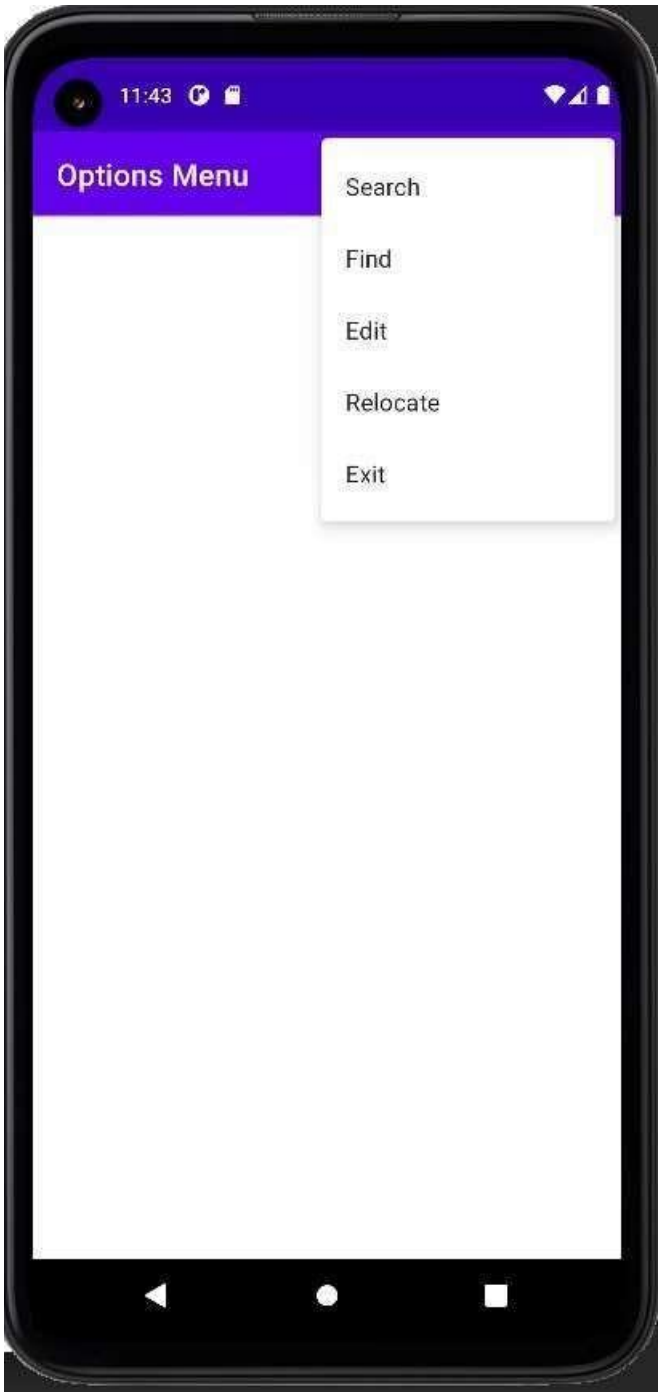
ACTIVITY_MAIN.XML

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

<androidx.constraintlayout.widget.ConstraintLayout

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

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

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

android:layout_width="match_parent"

android:layout_height="match_parent"

tools:context=".MainActivity">

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

MENUCONTEXT.XML

```
<?xml version="1.0" encoding="utf-8"?>
<menu xmlns:android="http://schemas.android.com/apk/res/android">
<item
android:id="@+id/search"
android:title="Search" />
<item
android:id="@+id/find"
android:title="Find" />
<item
android:id="@+id/edit"
android:title="Edit" />
<item android:id="@+id/relocate"
android:title="Relocate" />
<item
android:id="@+id/exit"
android:title="Exit" /> </menu>
```

OUTPUT:



PROGRAM 12:

Use of Spinner widget in android application demonstration.

Procedure:

Step 1 : Start
Step 2 : Create xml and java file
Step 3 : Open activity_main.xml file and add a spinner object inside relativelayout and one textview
Step 4 : Create strings.xml file
Step 5 : Open strings.xml file and add string under resource element with fewitems using string-array
Step 6 : Open main_activity.java file and import necessary libraries
Step 7 : Getting the instance of spinner using findViewById() and applyingOnItemSelectedListener on it
Step 8 : We use array adapter to fill the data in spinner, also we use toast todisplay when the item in spinner is selected.
Step 9 : Performing action OnItemSelected and OnNothingSelectedStep10 :
Stop

MainActivity.java

```
package com.example.a12spinnerwidget;import android.os.Bundle;import
android.view.View;
import android.widget.AdapterView;import android.widget.Spinner; importandroid.widget.Toast;

import androidx.appcompat.app.AppCompatActivity;import android.widget.ArrayAdapter;public
class MainActivity extends AppCompatActivity {
    // these are the global variables

    Spinner classSpinner, divSpinner;
    // string variable to store selected values

    String selectedClass, selectedDiv;

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

        classSpinner = (Spinner) findViewById(R.id.classSpinner);divSpinner = (Spinner)
        findViewById(R.id.divSpinner);

        // Class Spinner implementing onItemSelectedListener

        classSpinner.setOnItemSelectedListener(new      AdapterView.OnItemSelectedListener()
{
            @Override
            public void onItemSelected(AdapterView<?> parent, View view,int position,
```

```
long id) {

                String selectedClass = parent.getItemAtPosition(position).toString();switch
                (selectedClass) {case "Class 1":
                        // assigning div item list defined in XMLto the div

Spinner

                        divSpinner.setAdapter(new
                                ArrayAdapter<String>(MainActivity.this,

android.R.layout.simple_spinner_dropdown_item,


getResources().getStringArray(R.array.items_div_class_1)));

                        break;

                case "Class 2": divSpinner.setAdapter(new
                                ArrayAdapter<String>(MainActivity.this,


android.R.layout.simple_spinner_dropdown_item,


getResources().getStringArray(R.array.items_div_class_2)));

                        break;

                case "Class 3": divSpinner.setAdapter(new
                                ArrayAdapter<String>(MainActivity.this,
android.R.layout.simple_spinner_dropdown_item,
getResources().getStringArray(R.array.items_div_class_3)));

                        Toast.makeText(MainActivity.this, "\n Class: \t " +selectedClass,
Toast.LENGTH_LONG).show();

                        break;

                case "Class 4": divSpinner.setAdapter(new
                                ArrayAdapter<String>(MainActivity.this,
android.R.layout.simple_spinner_dropdown_item,
getResources().getStringArray(R.array.items_div_class_4)));

                        Toast.makeText(MainActivity.this, "\n Class: \t " +selectedClass,
Toast.LENGTH_LONG).show();

                        break;
                }
                //set divSpinner Visibility to Visible

                divSpinner.setVisibility(View.VISIBLE);
        }
```

```
            @Override
            public void onNothingSelected(AdapterView<?> parent) {
                // can leave this empty

            }
        });
        // Div Spinner implementing onItemSelectedListener

        divSpinner.setOnItemSelectedListener(new AdapterView.OnItemSelectedListener() { @Override
            public void onItemSelected(AdapterView<?> parent, Viewview, int position,long
                    id)
                { selectedDiv =
                        parent.getItemAtPosition(position).toString();
                // create a Toast to show the values on screen

                Toast.makeText(MainActivity.this,


                        "\n Div: \t" + selectedDiv,Toast.LENGTH_LONG).show();

                        }


            @Override
            public void onNothingSelected(AdapterView<?> parent) {
                // can leave this empty

            }


        });


    }
}
```

activity_main.xml

```
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools" android:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:context="com.example.a12spinnerwidget.MainActivity">

    <TextView
        android:id="@+id/tvDemo" android:layout_width="match_parent"
        android:layout_height="wrap_content" android:layout_alignParentStart="true"
        android:layout_alignParentTop="true" android:gravity="center" android:text="SPINNER
        DEMO" android:layout_alignParentLeft="true" />
```

```
    <Spinner
        android:id="@+id/classSpinner" android:layout_width="match_parent"
        android:layout_height="wrap_content" android:layout_below="@+id/tvDemo"
        android:layout_marginTop="25dp"  android:entries="@array/items_class"/>

    <Spinner
        android:id="@+id/divSpinner"    android:visibility="gone"

        android:layout_width="match_parent" android:layout_height="wrap_content"
        android:layout_below="@id/classSpinner" android:layout_toLeftOf="@id/classSpinner"
        android:layout_marginTop="10dp"
        />
</RelativeLayout>
```

strings.xml

```
<resources>
<string name="app_name">SpinnerDemo</string>

<string-array name="items_class">
    <item>Class 1</item>
    <item>Class 2</item>
    <item>Class 3</item>
    <item>Class 4</item>
</string-array>

<string-array name="items_div_class_1">
    <item>Div 1-A</item>
    <item>Div 1-B</item>


    <item>Div 1-C</item>
    <item>Div 1-D</item>
</string-array>

<string-array name="items_div_class_2">
    <item>Div 2-A</item>
    <item>Div 2-B</item>

    <item>Div 2-C</item>
    <item>Div 2-D</item>
</string-array>

<string-array name="items_div_class_3">
    <item>Div 3-A</item>
    <item>Div 3-B</item>
    <item>Div 3-C</item>
```

```
        <item>Div 3-D</item>
 </string-array>

 <string-array name="items_div_class_4">
        <item>Div 4-A</item>
        <item>Div 4-B</item>
        <item>Div 4-C</item>
        <item>Div 4-D</item>
 </string-array>

 </resources>
```

OUTPUT:

PROGRAM 13:

Database application using SQLite.

Procedure:

Step 1: Start
Step 2: Create xml and java files
Step 3: Open activity_main.xml file and add four textview, edittext and addfour buttons to perform add, view, delete and update
Step 4: Open main_activity.java file and import the libraries that are neededStep 5: Create mydb object for the databasehelper class
Step 6: Instantiate the buttons and edittext created in the xml file using findViewById() method. This method binds the created object to the UIcomponents with the help of assigned ID.
Step 7: Define methods deletedata(), adddata(), updatedata() ,viewall(), which returns delete particular data, insert data, update data, and view all dataoperations respectively
Step 8: OnCreateOptionsMenu() method specify the options menu for the activity. It inflates the menu resource defined in xml into menu provided.
Step 9: By using OnOptionsItemSelected() method we can handle action baritems that clicks.
Step 10: Create databasehelper.java file to handle database operations thatare defined using sqliteopenhelper
Step 11: Mention all database informations such as database, table, columns etc.
Step 12: Call methods inorder to handle the database opertions such as creation, upgrading, reading, writing, deleting
Step 13: Stop

ACTIVITY_MAIN.XML

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

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

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

android:layout_width="match_parent"

android:layout_height="match_parent"

tools:context=".MainActivity">

<TextView android:layout_width="wrap_content"

android:layout_height="wrap_content"
```

```
android:textAppearance="?android:attr/textAppearanceLarge" android:text="Name"
android:id="@+id/textView"
android:layout_alignParentTop="true"
android:layout_alignParentLeft="true"
android:layout_alignParentStart="true" />
<TextView android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:textAppearance="?android:attr/textAppearanceLarge"
android:text="Surname"
android:id="@+id/textView2"
android:layout_below="@+id/editText_name"
android:layout_alignParentLeft="true"
android:layout_alignParentStart="true" />
<TextView android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:textAppearance="?android:attr/textAppearanceLarge"

android:text="Marks" android:id="@+id/textView3"
android:layout_below="@+id/editText_surname"
android:layout_alignParentLeft="true"
android:layout_alignParentStart="true" />
<EditText
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:id="@+id/editText_name"
android:layout_alignTop="@+id/textView"
```

```
android:layout_toRightOf="@+id/textView" android:layout_toEndOf="@+id/textView"
/>
<EditText android:layout_width="match_parent"
android:layout_height="wrap_content"
android:id="@+id/editText_surname"
android:layout_alignTop="@+id/textView2"
android:layout_toRightOf="@+id/textView2"
android:layout_toEndOf="@+id/textView2" />
<EditText android:layout_width="match_parent"
android:layout_height="wrap_content"
android:id="@+id/editText_Marks"
android:layout_below="@+id/editText_surname"
android:layout_toRightOf="@+id/textView3"
android:layout_toEndOf="@+id/textView3" />
<Button
android:layout_width="wrap_content"
android:layout_height="wrap_content"

android:text="Add Data"
android:id="@+id/button_add"
android:layout_below="@+id/editText_Marks"
android:layout_alignParentLeft="true"
android:layout_alignParentStart="true"
android:layout_marginTop="76dp" />
<Button
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:text="View All"
```

```
android:id="@+id/button_viewAll" android:layout_above="@+id/button_update"
android:layout_centerHorizontal="true" />
<Button android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:text="Update"
android:id="@+id/button_update"
android:layout_below="@+id/button_add"
android:layout_alignParentLeft="true"
android:layout_alignParentStart="true" />
<Button android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:text="Delete"
android:id="@+id/button_delete"
android:layout_centerVertical="true"
android:layout_below="@+id/button_viewAll"
android:layout_alignLeft="@+id/button_viewAll"

android:layout_alignStart="@+id/button_viewAll" />
<TextView android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:textAppearance="?android:attr/textAppearanceLarge"
android:text="id"
android:id="@+id/textView_id"
android:layout_below="@+id/editText_Marks"
android:layout_alignParentLeft="true"
android:layout_alignParentStart="true" />
```

```
<EditText android:layout_width="match_parent"
android:layout_height="wrap_content"
android:id="@+id/editText_id"
android:layout_alignTop="@+id/textView_id"
android:layout_toRightOf="@+id/textView3"
android:layout_toEndOf="@+id/textView3" />
</RelativeLayout>
```

MAINACTIVITY.JAVA

```
package com.example.dbtest;


import androidx.appcompat.app.AlertDialog;
import androidx.appcompat.app.AppCompatActivity;
import android.database.Cursor;
import android.os.Bundle; import
android.view.Menu; import
android.view.MenuItem;import
android.view.View; import
android.widget.Button; import
android.widget.EditText;import
android.widget.Toast;


public class MainActivity extends AppCompatActivity
{DatabaseHelper myDb;
EditText editName,editSurname,editMarks ,editTextId;
Button btnAddData;
Button btnviewAll;
Button btnDelete; Button
btnviewUpdate;
```

```
@Override
protected void onCreate(Bundle savedInstanceState)
{super.onCreate(savedInstanceState);
setContentView(R.layout.activity_main);
myDb = new DatabaseHelper(this);
editName = (EditText)findViewById(R.id.editText_name);
editSurname = (EditText)findViewById(R.id.editText_surname);

editMarks = (EditText)findViewById(R.id.editText_Marks);
editTextId = (EditText)findViewById(R.id.editText_id); btnAddData
= (Button)findViewById(R.id.button_add); btnviewAll =
(Button)findViewById(R.id.button_viewAll); btnviewUpdate=
(Button)findViewById(R.id.button_update);btnDelete=
(Button)findViewById(R.id.button_delete); AddData();
viewAll();
UpdateData();
DeleteData();
}
public void DeleteData()
{ btnDelete.setOnClickListener(new
View.OnClickListener() { @Override
public void onClick(View v)
{ Integer deletedRows =
myDb.deleteData(editTextId.getText().toString());
if(deletedRows > 0)
Toast.makeText(MainActivity.this,"Data
Deleted",Toast.LENGTH_LONG).show();
```

```
else Toast.makeText(MainActivity.this,"Data
not Deleted",Toast.LENGTH_LONG).show();
}
}
);
}
public void UpdateData()
{ btnviewUpdate.setOnClickListener(

new View.OnClickListener()
{@Override
public void onClick(View v)
{boolean isUpdate =
myDb.updateData(editTextId.getText().toString(),
editName.getText().toString(),

editSurname.getText().toString(),editMarks.getText().toString());
if(isUpdate == true)
Toast.makeText(MainActivity.this,"Data
Update",Toast.LENGTH_LONG).show(); else
Toast.makeText(MainActivity.this,"Data
not Updated",Toast.LENGTH_LONG).show();
}
}
);
}
public void AddData()
{ btnAddData.setOnClickListene
r(
```

```
new View.OnClickListener()
{@Override
public void onClick(View v)
{boolean isInserted =
myDb.insertData(editName.getText().toString(),
editSurname.getText().toString(),
editMarks.getText().toString() );

if(isInserted == true)
Toast.makeText(MainActivity.this,"Data
Inserted",Toast.LENGTH_LONG).show();else

Toast.makeText(MainActivity.this,"Data
not Inserted",Toast.LENGTH_LONG).show();
}
}
);
}

public void viewAll()
{ btnviewAll.setOnClickListener(ne
w View.OnClickListener()
{ @Overridepublic void
onClick(View v) {
Cursor res = myDb.getAllData();
if(res.getCount() == 0) {
// show message showMessage("Error","Nothing
found");
```

```
return;
}

StringBuffer buffer = new StringBuffer();while
(res.moveToNext()) { buffer.append("Id :"+
res.getString(0)+"\n"); buffer.append("Name
:"+ res.getString(1)+"\n");
buffer.append("Surname :"+
res.getString(2)+"\n"); buffer.append("Marks
:"+ res.getString(3)+"\n\n");
}

// Show all data
showMessage("Data",buffer.toString());
}
}
);
}

public void showMessage(String title,String
Message){ AlertDialog.Builder builder = new
AlertDialog.Builder(this);builder.setCancelable(true);
builder.setTitle(title);
builder.setMessage(Message);
builder.show();
}
```

```
@Override
public boolean onCreateOptionsMenu(Menu menu) {
// Inflate the menu; this adds items to the action bar ifit is
present.
//getMenuInflater().inflate(R.menu.menu_main, menu);return
true;
}

@Override
public boolean onOptionsItemSelected(MenuItem item) {
// Handle action bar item clicks here. The action bar will

// automatically handle clicks on the Home/Up button, solong
// as you specify a parent activity in
AndroidManifest.xml.
int id = item.getItemId();

//noinspection SimplifiableIfStatement
/* if (id == R.id.action_settings)
{return true;
}*/

return super.onOptionsItemSelected(item);
}
}
```

DATABASEHELPER.JAVA

```
package com.example.dbtest;


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


public class DatabaseHelper extends SQLiteOpenHelper { public
static final String DATABASE_NAME = "Student.db";public static
final String TABLE_NAME = "student_table"; public static final
String COL_1 = "ID";
public static final String COL_2 = "NAME"; public
static final String COL_3 = "SURNAME";public static
final String COL_4 = "MARKS";


public DatabaseHelper(Context context)
{super(context, DATABASE_NAME, null, 1);
}


@Override
public void onCreate(SQLiteDatabase db) {
db.execSQL("create table " + TABLE_NAME +" (ID INTEGER PRIMARY KEY
AUTOINCREMENT,NAME TEXT,SURNAME TEXT,MARKS INTEGER)");
}


@Override
public void onUpgrade(SQLiteDatabase db, int oldVersion, int
newVersion) {
```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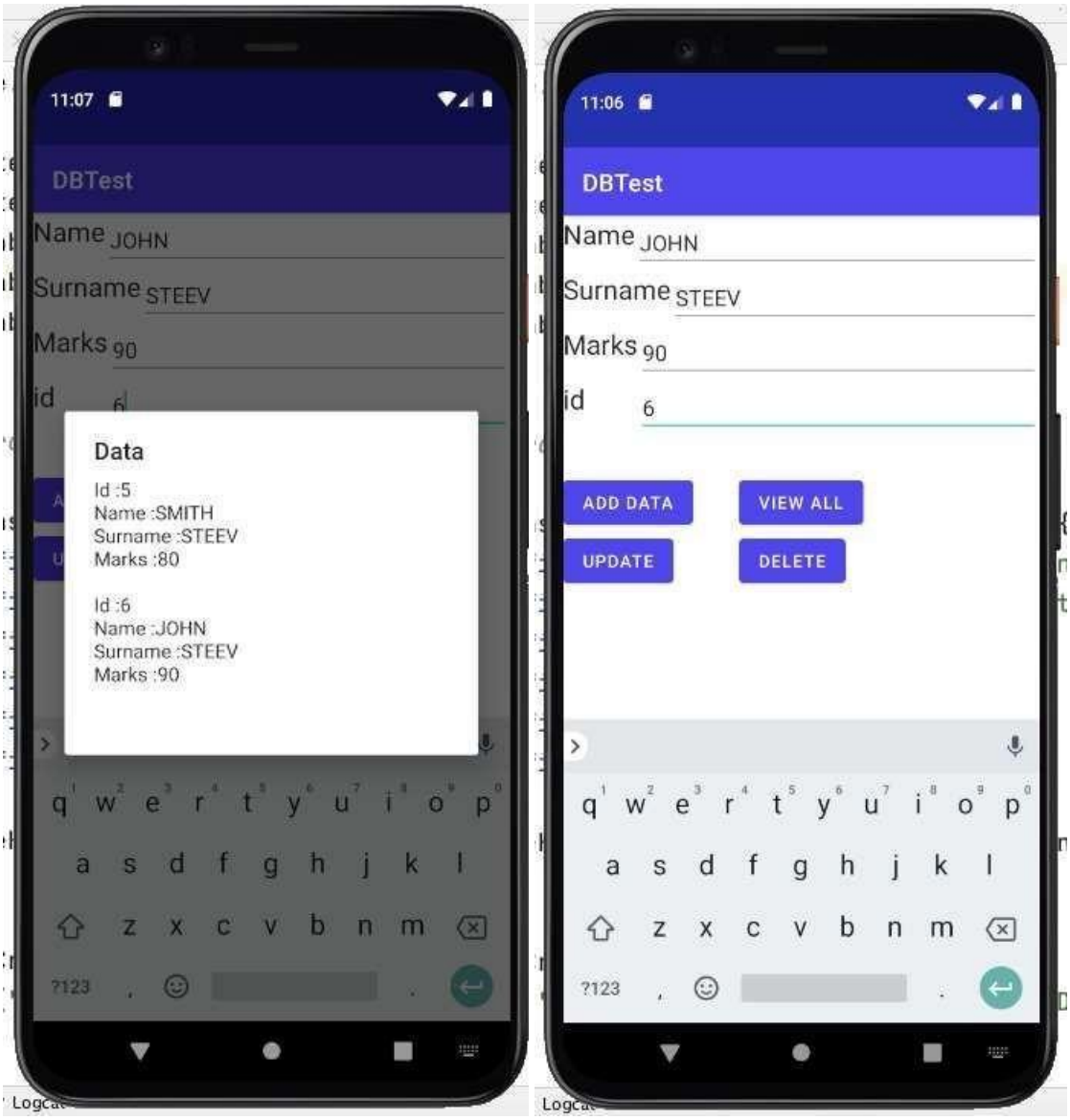
```
db.execSQL("DROP TABLE IF EXISTS "+TABLE_NAME);


onCreate(db);
}


public boolean insertData(String name,String surname,String marks) {SQLiteDatabase
db = this.getWritableDatabase();
ContentValues contentValues = new ContentValues();
contentValues.put(COL_2,name);
contentValues.put(COL_3,surname);
contentValues.put(COL_4,marks);
long result = db.insert(TABLE_NAME,null ,contentValues);
if(result == -1)
return false;
else
return true;
}


public Cursor getAllData() {
SQLiteDatabase db = this.getWritableDatabase();
Cursor res = db.rawQuery("select * from "+TABLE_NAME,null);
return res;
}


public boolean updateData(String id,String name,String surname,Stringmarks)
{SQLiteDatabase db = this.getWritableDatabase();
ContentValues contentValues = new ContentValues();
contentValues.put(COL_1,id);
contentValues.put(COL_2,name);
```

```
contentValues.put(COL_3,surname);
contentValues.put(COL_4,marks);
db.update(TABLE_NAME, contentValues, "ID = ?",new String[]
{ id });

return true;
}

public Integer deleteData (String id) { SQLiteDatabase
db = this.getWritableDatabase();
return db.delete(TABLE_NAME, "ID = ?",new String[] {id});
}
}
```

OUTPUT:


11:07
DBTest
Name JOHN
Surname STEEV
Marks 90
id 6
Data
Id :5
Name :SMITH
Surname :STEEV
Marks :80
Id :6
Name :JOHN
Surname :STEEV
Marks :90
11:06
DBTest
Name JOHN
Surname STEEV
Marks 90
id 6
ADD DATA
VIEW ALL
UPDATE
DELETE