

**FEDERAL INSTITUTE OF  
SCIENCE AND TECHNOLOGY  
(FISAT)<sup>TM</sup>**

**HORMIS NAGAR, MOOKKANNOOR**

**ANGAMALY-683577**



**'FOCUS ON EXCELLENCE'**

**MOBILE APPLICATION  
DEVELOPMENT**

.....  
**LABORATORY RECORD**

**Name: ANGEL MARY JOLY**

**Branch: MASTER OF COMPUTER APPLICATION**

**Semester: 3**

**Batch: MCA - A**

**Roll No: 23**

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**University Exam.Reg. No:**

## **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 **ANGEL MARY JOLY** in the **MOBILE APPLICATION DEVELOPMENT** Laboratory of the Federal Institute of Science and Technology during the academic year 2021-2022.*

Signature of Staff in Charge

Signature of H.O.D

Name:

Name:

Date:

**Date of University practical examination .....**

Signature of

Signature of

Internal Examiner

External Examiner

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**AIM**

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

**Programming Code:****XML CODE**

```

<?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>
```

### **JAVA CODE**

```
package com.example.calculator;
import androidx.appcompat.app.AppCompatActivity;
//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;
import androidx.appcompat.app.AppCompatActivity;
public class MainActivity extends AppCompatActivity implements
View.OnClickListener{

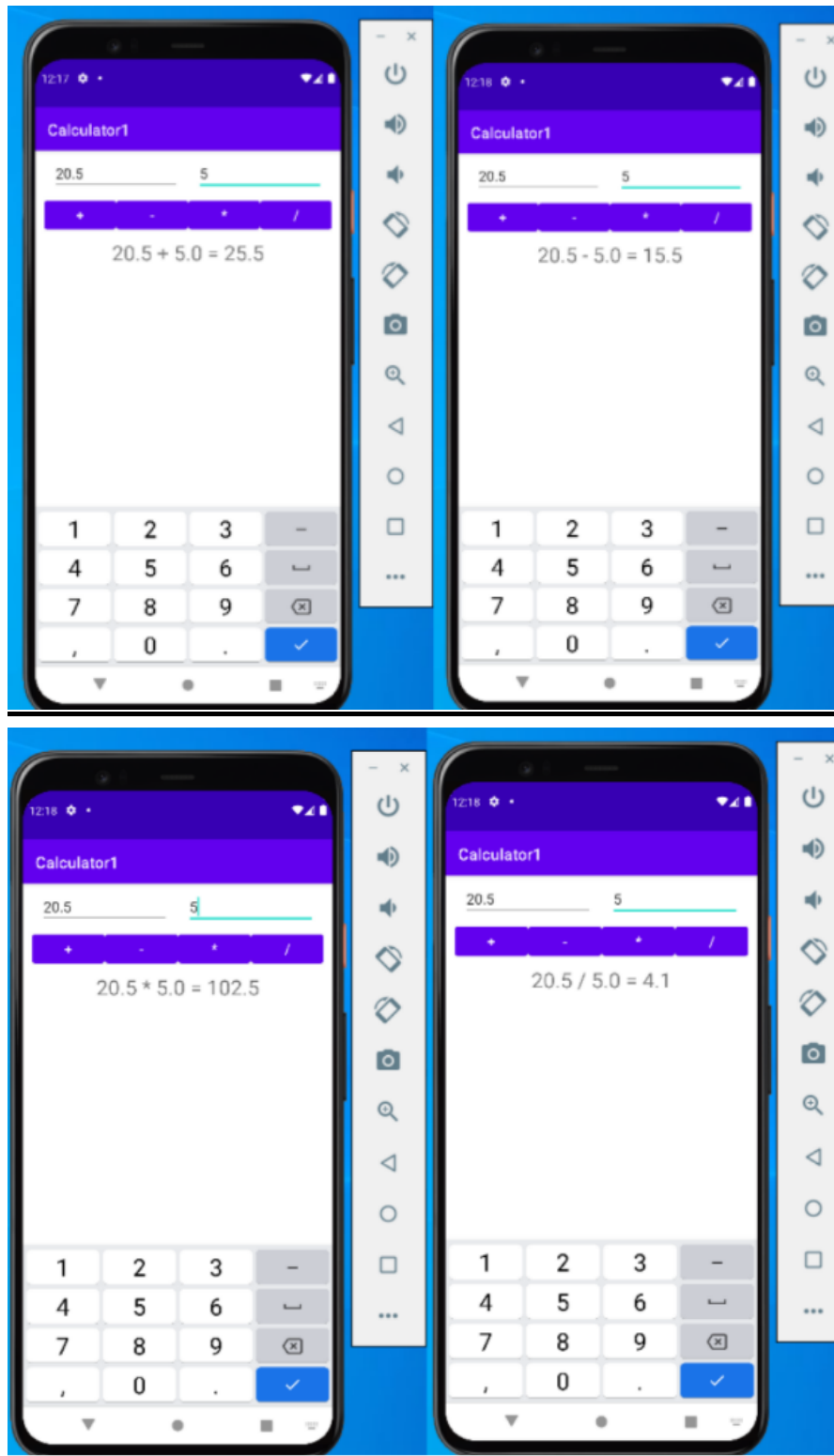
    EditText etNum1;
    EditText etNum2;
    Button btnAdd;
    Button btnSub;
    Button btnMult;
```



```
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);
}
}
```

**OUTPUT:**



**AIM**

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

**Programming Code:****XML CODE**

```

<?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/etStr1"
            android:hint="Enter first string"
            android:layout_width="match_parent"
            android:inputType="text">
        </EditText>
        <EditText
            android:layout_height="wrap_content"
            android:layout_weight="1"
            android:layout_marginLeft="5pt"
            android:id="@+id/etStr2"
            android:hint="Enter second string"
            android:layout_width="match_parent"
            android:inputType="text">
        </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/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:textColor="@color/green"
    android:layout_marginTop="3pt"
    android:id="@+id/tvResult"
    android:gravity="center_horizontal"
    android:layout_weight="0.07">
</TextView>
</LinearLayout>

```

### **JAVA CODE**

```

package com.example.stringconcat;

//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;

import androidx.appcompat.app.AppCompatActivity;

public class MainActivity extends AppCompatActivity implements
View.OnClickListener{

    EditText etStr1;
    EditText etStr2;
    Button btnConcat;
    TextView tvResult;

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

```

```
// find the elements
etStr1 = (EditText) findViewById(R.id.etStr1); etStr2 =
(EditText) findViewById(R.id.etStr2);

btnConcat = (Button) findViewById(R.id.btnConcat);

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

// set a listener

btnConcat.setOnClickListener(this);

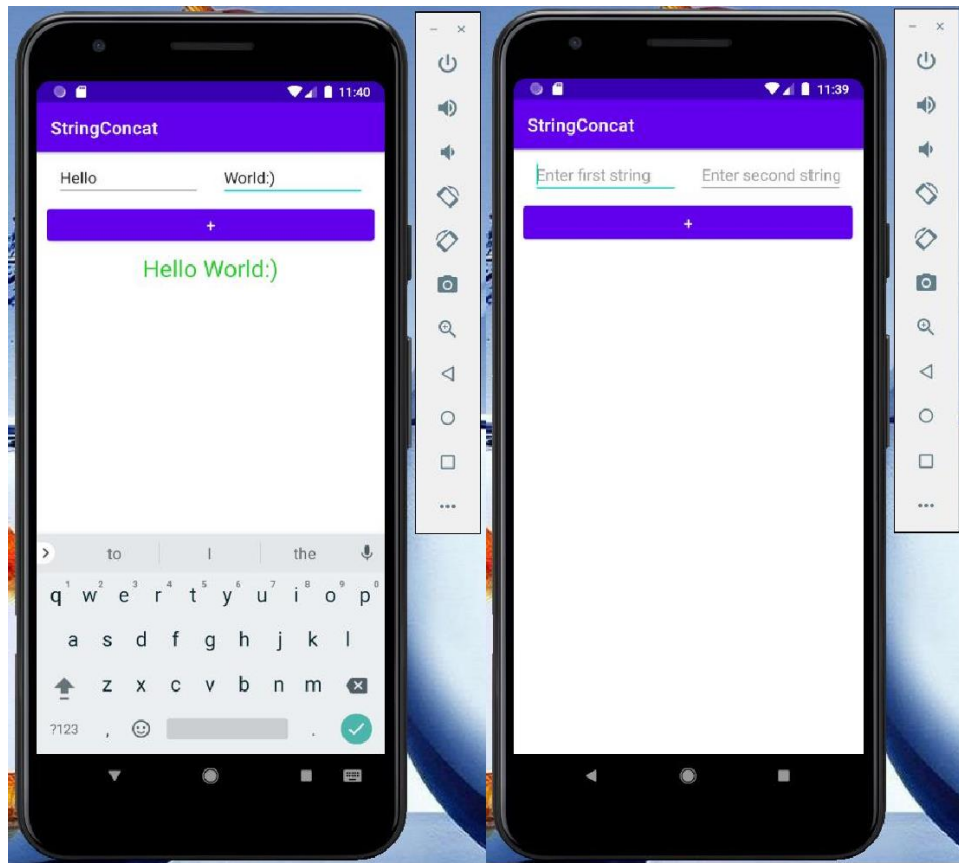
}

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

    // check if the fields are empty
    if (TextUtils.isEmpty(etStr1.getText().toString())
        || TextUtils.isEmpty(etStr2.getText().toString())) { return;
    }

    tvResult.setText(etStr1.getText().toString() + " " +
etStr2.getText().toString());
}
}
```

**OUTPUT:**



**AIM**

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

**Programming Code:****XML CODE**

```
<?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="wrap_content"
    android:layout_height="wrap_content"
    android:id="@+id/linearLayout1"
    android:layout_marginLeft="50pt"
    android:layout_marginRight="10pt"
    android:layout_marginTop="3pt">
    <EditText
      android:layout_height="wrap_content"
      android:layout_weight="1"
      android:layout_marginLeft="5pt"
      android:id="@+id/ip1"
      android:hint="Enter a number"
      android:layout_width="wrap_content"
      android:inputType="number">
    </EditText>
  </LinearLayout>
  <LinearLayout
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:id="@+id/linearLayout2"
    android:layout_marginTop="5pt"
    android:layout_marginLeft="57pt"
    android:layout_marginRight="5pt">
    <Button
      android:id="@+id/fact"
      style="@style/Widget.AppCompat.Button.Borderless.Colored"
      android:layout_width="match_parent"
      android:layout_height="wrap_content"
      android:layout_weight="1"
      android:background="@color/red"
      android:backgroundTint="#450707"
      android:outlineProvider="background"
      android:text="Factorial"
```



```

android:textAppearance="@style/TextAppearance.AppCompat.Large"
android:textSize="8pt"
android:textStyle="bold|italic"
android:typeface="serif">
</Button>
</LinearLayout>
<TextView
android:layout_height="wrap_content"
android:layout_width="match_parent"
android:layout_marginLeft="3pt"
android:layout_marginRight="5pt"
android:textSize="12pt"
android:textColor="@color/black"
android:layout_marginTop="3pt"
android:id="@+id/tvResult"
android:gravity="center_horizontal"
android:layout_weight="0.07">
</TextView>
</LinearLayout>

```

### **JAVA CODE**

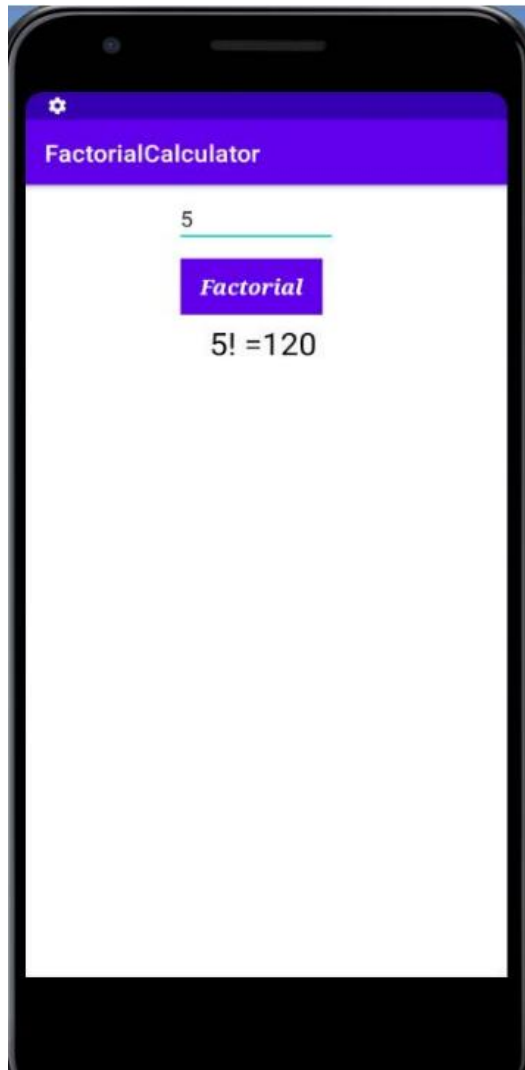
```

package com.example.factorialcalculator;
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;
//import android.support.v7.app.AppCompatActivity;
public class MainActivity extends AppCompatActivity implements
    View.OnClickListener{
    EditText ip1;
    Button fact;
    TextView tvResult;
    //int factorial=1;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        ip1=(EditText) findViewById(R.id.ip1);
        fact=(Button) findViewById(R.id.fact);
        tvResult=(TextView) findViewById(R.id.tvResult);
        fact.setOnClickListener(this);
    }
    public void onClick(View v) {
        if (TextUtils.isEmpty(ip1.getText().toString())){
            return;
        }
        int num=0;
        int factorial=1;
    }

```

```
num = Integer.parseInt(ip1.getText().toString());  
for(int i=1; i<=num; i++){  
    factorial=factorial*i;  
  
}  
tvResult.setText(num+"! =" +factorial);  
}  
}
```

**OUTPUT:**



## **AIM**

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

## **Programming Code:**

### **JAVA CODE**

#### **Mainactivity.java**

```
package com.example.shapes;

import androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle;
//import android.support.v7.app.AppCompatActivity; public

class MainActivity extends AppCompatActivity {

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(new com.example.shapes.CustomView(this));
    }

}
```

#### **CustomView.java**

```
package com.example.shapes;

import android.content.Context;
import android.graphics.Canvas;
import android.graphics.Color;
import android.graphics.Paint;
import android.graphics.Rect;

import android.graphics.RectF;
import android.view.View;

public class CustomView extends View {

    private Rect rectangle;
    private Paint paint, p1,p2,p3,p4;

    public CustomView(Context context) {
        super(context);
        int x = 30; int y = 80;
        int width = 1500; int height = 1200;

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

```

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

p1 = new Paint();
p1.setColor(Color.YELLOW);

p2 = new Paint();
p2.setColor(Color.BLACK);

p3 = new Paint();
p3.setColor(Color.WHITE);

p4 = new Paint();
p4.setColor(Color.RED);
}

@Override
protected void onDraw(Canvas canvas) {
    canvas.drawColor(Color.WHITE);

    canvas.drawRect(rectangle, paint);

    canvas.drawCircle(550,600,500,p1);

    canvas.drawCircle(350,450,50,p2);
    canvas.drawCircle(750,450,50,p2);
    canvas.drawCircle(350,450,20,p3);
    canvas.drawCircle(750,450,20,p3);

    RectF oval = new RectF(220, 400, 900, 1000);
    canvas.drawArc(oval,0,180,false,p2);
    RectF oval1 = new RectF(350, 500, 750, 900);
    canvas.drawArc(oval1,0,180,false,p4); // create the
    Paint and set its color paint = new Paint();
    paint.setColor(Color.CYAN);

    p1 = new Paint(); p1.setColor(Color.YELLOW);

    p2 = new Paint(); p2.setColor(Color.BLACK);

    p3 = new Paint(); p3.setColor(Color.WHITE);

    p4 = new Paint(); p4.setColor(Color.RED);
}

```

```
@Override
protected void onDraw(Canvas canvas) {
    canvas.drawColor(Color.WHITE);

    canvas.drawRect(rectangle, paint);

    canvas.drawCircle(550,600,500,p1);

    canvas.drawCircle(350,450,50,p2);
    canvas.drawCircle(750,450,50,p2);
    canvas.drawCircle(350,450,20,p3);
    canvas.drawCircle(750,450,20,p3);

    RectF oval = new RectF(220, 400, 900, 1000);
    canvas.drawArc(oval,0,180,false,p2);
    RectF oval1 = new RectF(350, 500, 750, 900);
    canvas.drawArc(oval1,0,180,false,p4);

    }

}

}
```

**OUTPUT:**



## **AIM**

5. Create an application to show happy face smiley and sad face smiley to demonstrate button click events.

## **Programming Code:**

### **XML CODE**

#### **mainactivity.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.smiley.HappyFace
        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="Change to Sad Face" />

</RelativeLayout>
```

### **JAVA CODE**

#### **MainActivity.java**

```
package com.example.smiley;

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);
}

}

```

### **MainActivity2.java**

```

package com.example.smiley;

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);
    }

}

```

**Happyface.java**

```

package com.example.smiley;
import android.content.Context; import
android.graphics.Canvas; import
android.graphics.Color;
import android.graphics.Paint;
import android.graphics.RectF;
import android.util.AttributeSet;
import android.view.View;

public class HappyFace extends View {

    private Paint p1;
    private static final String COLOR_HEX = "WHITE";private
    final Paint mPaint;
    private float xPosition;
    private float yPosition;
    private float radius;
    private float strokeWidth = 10; private
    float defaultScale = 0.90f;private float
    eyeRadius = 60; private float
    eyeYPosition;
    private float leftEyeXPosition; private
    float rightEyeXPosition;

    public HappyFace(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);

        xPosition = getMeasuredWidth() / 2; yPosition = getMeasuredHeight() / 2;
        radius = xPosition < yPosition ? xPosition : yPosition;radius *= defaultScale;
        p1 = new Paint();
        p1.setColor(Color.MAGENTA);

        canvas.drawCircle(xPosition, yPosition, radius, p1);

        eyeYPosition = (float) (yPosition / 1.2);
        leftEyeXPosition = xPosition < yPosition ? xPosition / 2 : (float)
xPosition / 1.3);

```

```

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

canvas.drawCircle(leftEyeXPosition, eyeYPosition, eyeRadius,
mPaint);

canvas.drawCircle(rightEyeXPosition, eyeYPosition, eyeRadius,
mPaint);

        RectF oval = new RectF(leftEyeXPosition, yPosition + yPosition /12,
rightEyeXPosition, (float) (yPosition + yPosition / 3));

canvas.drawArc(oval, -1, 180, false, mPaint);
}
}

```

### **SadFace.java**

```

package com.example.smiley;

import android.content.Context;
import android.graphics.Canvas;
import android.graphics.Color;
import android.graphics.Paint;
import android.graphics.RectF;
import android.util.AttributeSet;
import android.view.View;

public class SadFace extends View {

    private Paint p1;
    private static final String COLOR_HEX = "White";
    private final Paint mPaint;
    private float xPosition;
    private float yPosition;
    private float radius;
    private float strokeWidth = 10;
    private float defaultScale = 0.90f;
    private float eyeRadius = 60;
    private float eyeYPosition;
    private float leftEyeXPosition;
    private float rightEyeXPosition;

    public SadFace(Context context, AttributeSet attrs) {

        super(context, attrs);

        mPaint = new Paint();
        mPaint.setAntiAlias(true);
    }
}

```

```

@Override
protected void onDraw(Canvas canvas) {

    canvas.drawColor(Color.WHITE);
    super.onDraw(canvas);
    mPaint.setColor(Color.parseColor(COLOR_HEX));
    mPaint.setStrokeWidth(strokeWidth);
    mPaint.setStyle(Paint.Style.STROKE);
    canvas.drawPaint(mPaint);

    xPosition = getMeasuredWidth() / 2; yPosition =
    getMeasuredHeight() / 2;
    radius = xPosition < yPosition ? xPosition : yPosition ;radius *=
    defaultScale;
    p1 = new Paint();
    p1.setColor(Color.BLACK);
    canvas.drawCircle(xPosition, yPosition, radius, p1);

    eyeYPosition = (float) (yPosition / 1.2);

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

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

    canvas.drawCircle(leftEyeXPosition, eyeYPosition, eyeRadius,
    mPaint);

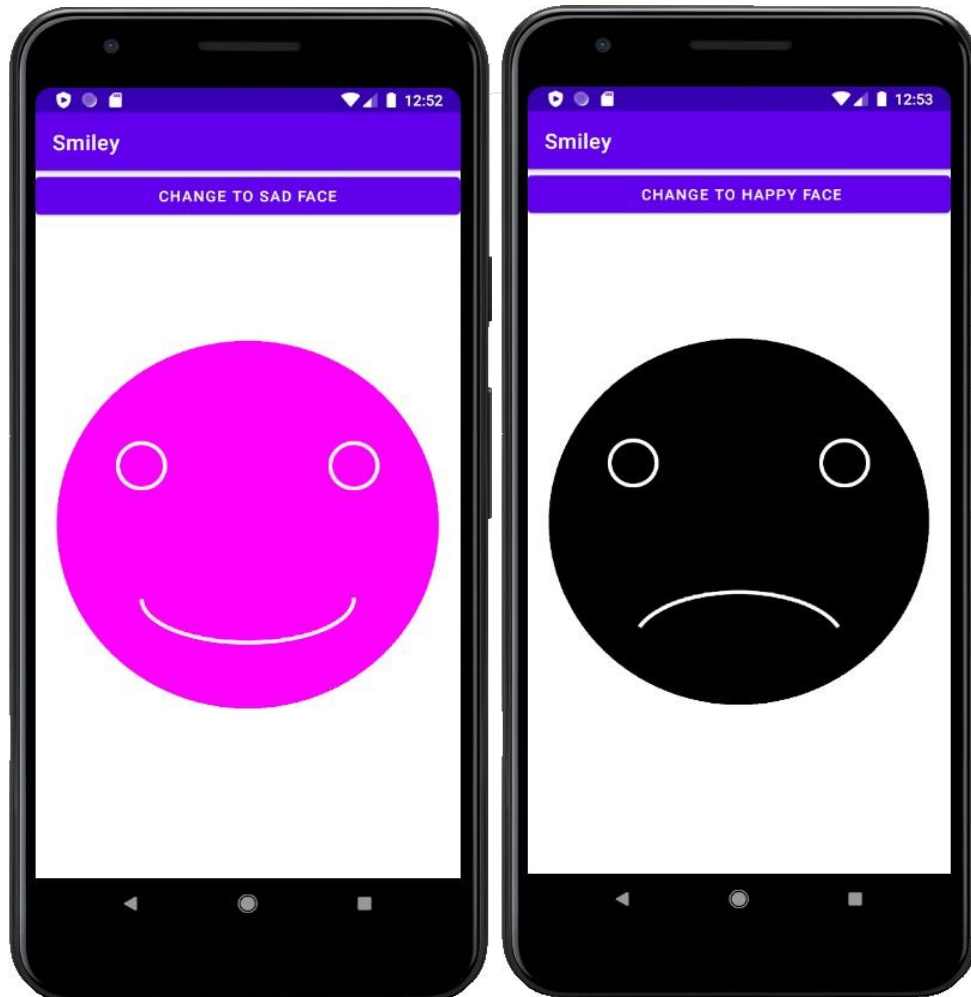
    canvas.drawCircle(rightEyeXPosition, eyeYPosition, eyeRadius,
    mPaint);

    RectF oval = new RectF(leftEyeXPosition, yPosition + yPosition / 5,
    rightEyeXPosition, (float) (yPosition + yPosition / 2));

    canvas.drawArc(oval, 200, 140, false, mPaint);
}

```

**OUTPUT:**



**AIM**

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

**Programming Code:****XML CODE****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"
ent"

```

```

app:layout_constraintTop_toTopOf="paren
t" />
<Button
android:id="@+id/bu
tton3"
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"
tools:ignore="MissingConstraints" />
</androidx.constraintlayout.widget.ConstraintLayout>

```

### **Activitysecond.xml**

```

<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout
xmlns:android="http://schemas.android.com/apk/res/andro
id" 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">
<Button
android:id="@+id/button
2"
android:layout_width="2
63dp"
android:layout_height="
53dp"
android:text="go back to 1st
activity"
tools:layout_editor_absoluteX="7
4dp"
tools:layout_editor_absoluteY="2
19dp"
tools:ignore="MissingConstraints"
/>
</androidx.constraintlayout.widget.ConstraintLayout>

```

### **JAVA CODE**

#### **MainActivity.java**

```

package com.example.intents;
import androidx.appcompat.app.AppCompatActivity;
import android.net.Uri;
import android.os.Bundle;
import android.view.View;
import android.content.Intent;

```

```

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);
}
}

```

### **MainActivity2.java**

```

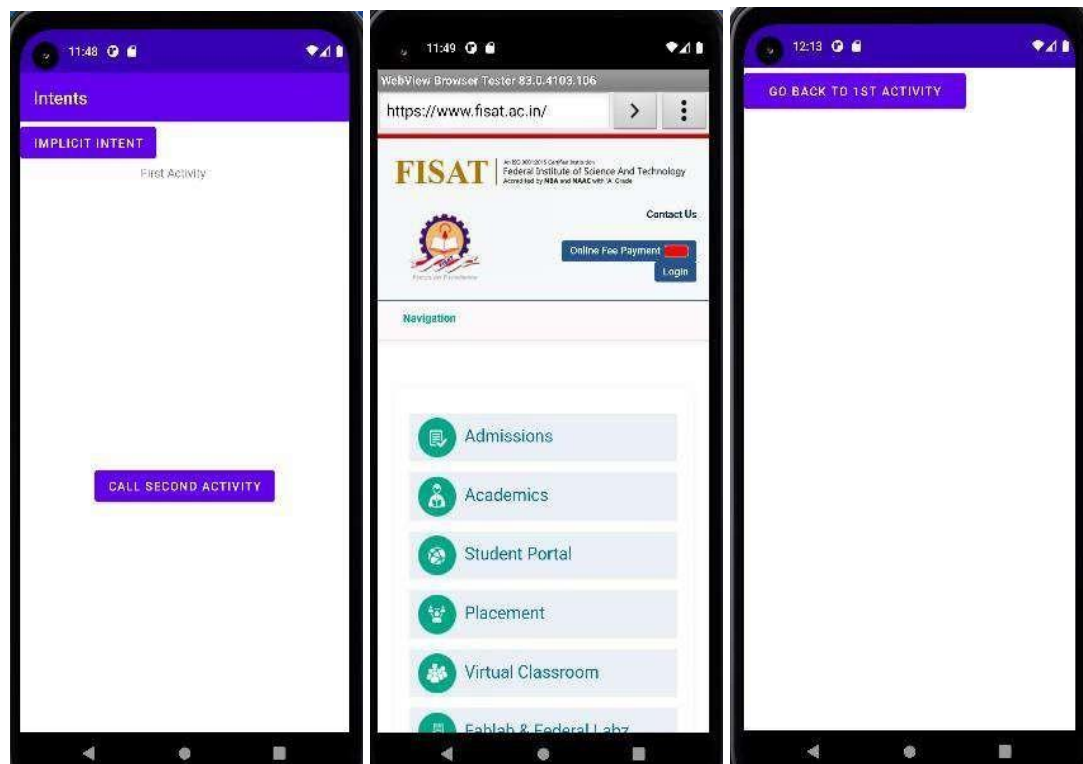
package com.example.intents;
import android.content.Intent;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import androidx.appcompat.app.AppCompatActivity;

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

```



## **OUTPUT:**



**AIM**

7. Create an android application to demonstrate storing data into internal phone memory.

**Programming Code:****XML CODE****mainactivity.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.internalstorage.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>

```

### **secondactivity.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.internalstorage.SecondActivity">

```

```

<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>

```

## **JAVA CODE**

### **Mainactivity.java**

```

package com.example.internalstorage;

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, SecondActivity.class); startActivity(intent);

}
}

```

### **Secondactivity.java**

```

package com.example.internalstorage;

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 SecondActivity extends AppCompatActivity {

    TextView getname, getpass;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState); setContentView(R.layout.activity_second);
        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){

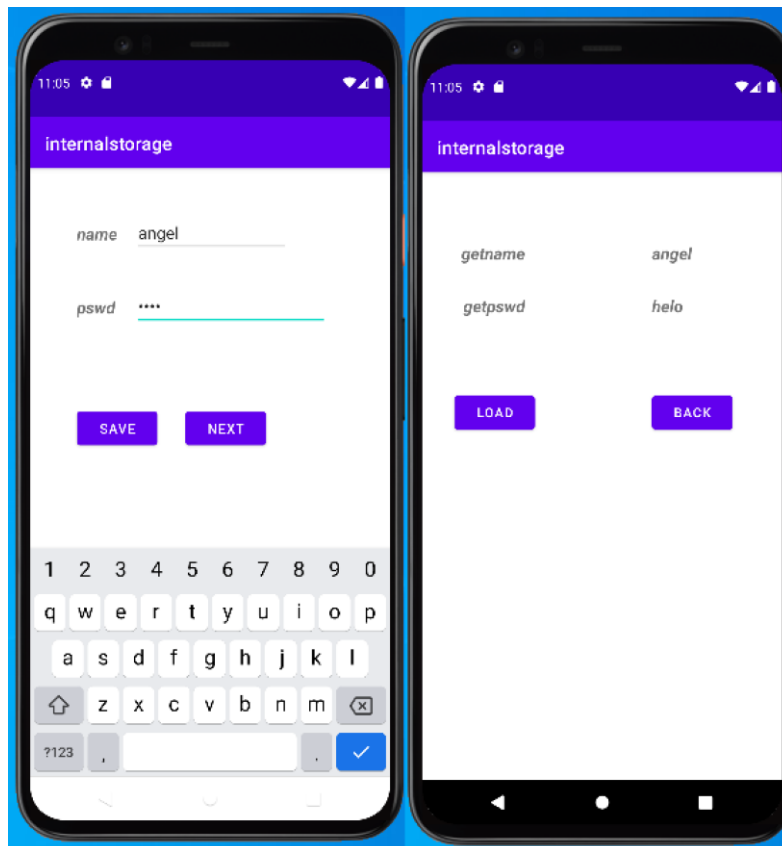
```

```
        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= new Intent(this, MainActivity.class); startActivity(intent);
}
}
```

## OUTPUT:





**AIM**

8. Create an android application to demonstrate GridView.

**Programming Code:****XML CODE****Mainactivity.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"
/>
```

**JAVA CODE****Mainactivity.java**

```
package com.example.gridview_angelly;
import
androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle;
import android.app.Activity;
import android.view.Menu;
import android.widget.GridView;

import com.example.gridview_angelly.R;

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));
    }
}
```

**ImageAdaptor.java**

```

package com.example.gridview_angelmmary;

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 Adapterpublic
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  
        };  
    }
```

**OUTPUT:**



**AIM**

9. Demonstrate ImageView and GridView.

**Programming Code:****XML CODE****activity\_main.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">
<!--
GridView with 3 value for numColumns attribute
-->
<GridView
    android:id="@+id/simpleGridView"
    android:layout_width="fill_parent"
    android:layout_height="wrap_content"
    android:footerDividersEnabled="false"
    android:padding="1dp" android:numColumns="3" />
</LinearLayout>
```

**activity\_gridview.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="wrap_content"
    android:padding="1dp" android:orientation="vertical">
<ImageView
    android:id="@+id/icon"
    android:layout_width="match_parent"
    android:layout_height="120dp"
    android:scaleType="fitXY"
    android:layout_gravity="center_horizontal"
    android:src="@drawable/logo1" />
</LinearLayout>
```

**activity\_second.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"

android:background="#fff" tools:context="com.example.imagegridview.SecondActivity">
<ImageView
android:id="@+id/selectedImage"
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:layout_centerInParent="true"
android:scaleType="fitXY" />
</RelativeLayout>

```

## **JAVA CODE**

### **Mainactivity.java**

```

package com.example.imagegridview;

import android.content.Intent;
import android.os.Bundle;
//import android.support.v7.app.AppCompatActivity;
import android.view.View;
import android.widget.AdapterView;
import android.widget.GridView;

import androidx.appcompat.app.AppCompatActivity;

public class MainActivity extends AppCompatActivity {
    GridView simpleGrid;
    int logos[] = {R.drawable.logo1, R.drawable.logo2, R.drawable.logo3,R.drawable.logo4,
R.drawable.logo5, R.drawable.logo6, R.drawable.logo7,R.drawable.logo8, R.drawable.logo9,
R.drawable.logo10, R.drawable.logo11, R.drawable.logo12,R.drawable.logo13};
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        simpleGrid = (GridView) findViewById(R.id.simpleGridView); // initGridView
        // Create an object of CustomAdapter and set Adapter to GirdViewCustomAdapter
        customAdapter = new
        CustomAdapter(getApplicationContext(), logos);
        simpleGrid.setAdapter(customAdapter);
        // implement setOnItemClickListener event on GridView
        simpleGrid.setOnItemClickListener(new
        AdapterView.OnItemClickListener() {
            @Override
                public void onItemClick(AdapterView<?> parent, View view, int
                position, long id) {
                // set an Intent to Another Activity
                Intent intent = new Intent(MainActivity.this,SecondActivity.class);
                intent.putExtra("image", logos[position]);

                startActivity(intent);
            }
        }
    }
}

```

```
});
}
}
```

### **ImageAdapter.java**

```
package com.example.imagegridview;

import android.content.Context; import
android.view.LayoutInflater;import
android.view.View;
import android.view.ViewGroup;
import android.widget.BaseAdapter;
import android.widget.ImageView;
public class ImageAdapter extends BaseAdapter {
Context context;int
logos[];
LayoutInflater inflater;
public ImageAdapter(Context applicationContext, int[] logos) {this.context =
    applicationContext;
this.logos = logos;
inflater = (LayoutInflater.from(applicationContext));
}
@Override
public int getCount() { return
    logos.length;
}
@Override
public Object getItem(int i) {return
    null;
}
@Override
public long getItemId(int i) {return 0;
}
@Override
public View getView(int i, View view, ViewGroup viewGroup) { view =
    inflater.inflate(R.layout.activity_gridview, null); //
inflater.inflate the layout
    ImageView icon = (ImageView) view.findViewById(R.id.icon); // get the
reference of ImageView
icon.setImageResource(logos[i]); // set logo imagesreturn view;
}
}
```

### **SecondActivity.java**

```
package com.example.imagegridview;

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

```
import android.widget.ImageView;

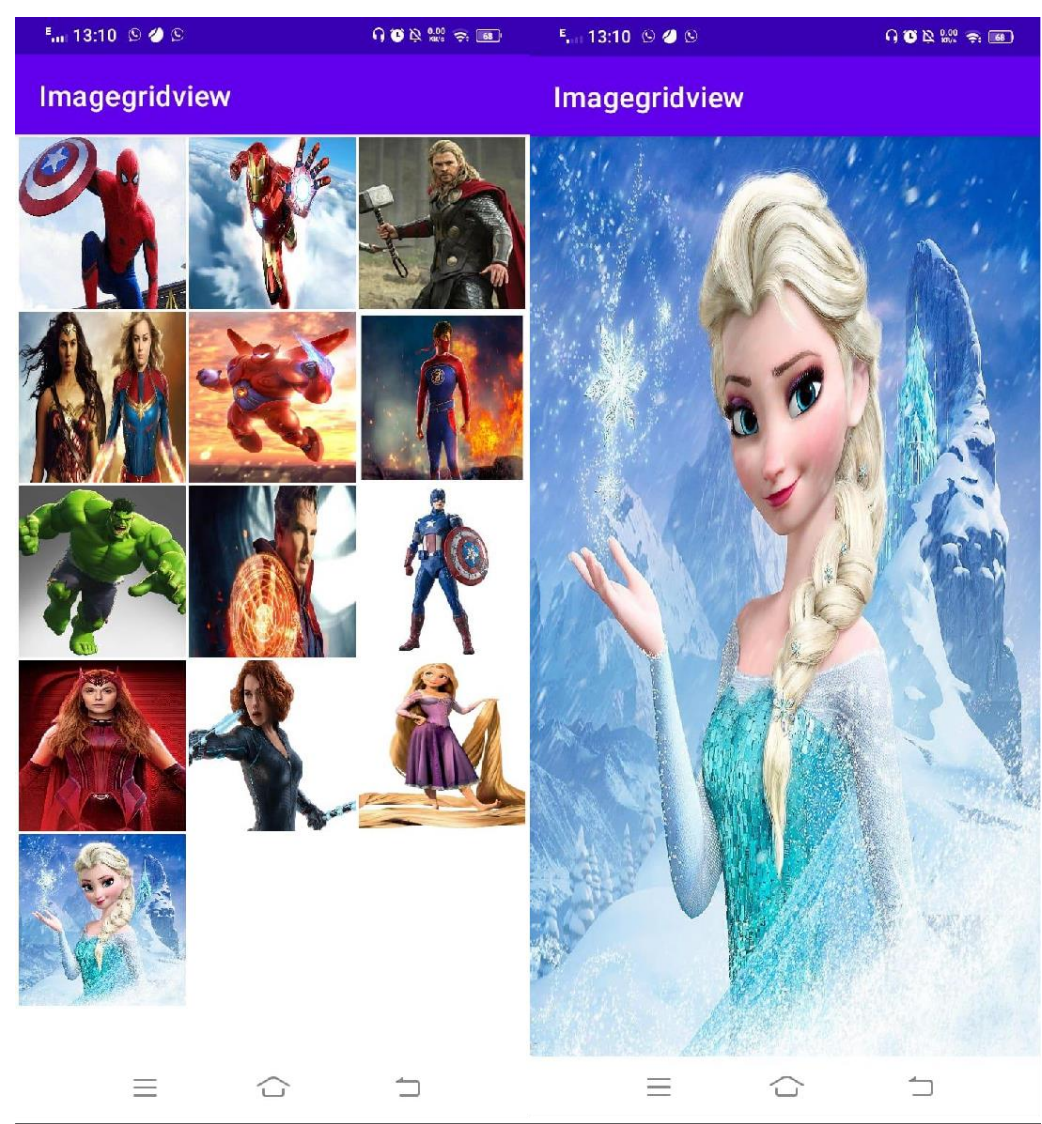
import androidx.appcompat.app.AppCompatActivity; public

class SecondActivity extends AppCompatActivity {
    ImageView selectedImage;

    @Override
    protected void onCreate(Bundle savedInstanceState) { super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_second);
        selectedImage = (ImageView) findViewById(R.id.selectedImage); //init a
        ImageView
        Intent intent = getIntent(); // get Intent which we set fromPrevious
        Activity
        selectedImage.setImageResource(intent.getIntExtra("image", 0)); //get image
        from Intent and set it in ImageView
    }
}
```



**OUTPUT:**



## **AIM**

**10. Demonstration of Toggle Button.**

## **Programming Code:**

### **XML CODE**

#### **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/piq1" />
    <Button
        android:id="@+id/next" android:layout_width="wrap_content"
        android:layout_height="100dp"
        android:layout_marginBottom="12dp"
        android:layout_marginRight="10dp"
        android:layout_gravity="bottom|right"
        android:paddingStart="61dp"
        android:paddingTop="24dp"
        android:paddingBottom="2dp"
        android:background="@drawable/buttonback1"
        android:textColor="#FFFFFF"
        android:text="Next"
    />
</FrameLayout>
```

### **JAVA CODE**

#### **Mainactivity.java**

```
package com.example.toggle;

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(new
    View.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.piq1);
    Button next= (Button)

    findViewById(R.id.next);
    s = "Prev"; next.setText(s);
    } else {
    ImageView img =
    (ImageView)

    findViewById(R.id.imageview);

    img.setImageResource(R.drawable.piq2);
    Button next= (Button)

    findViewById(R.id.next);
    s = "Next";
    next.setText(s);
    };

    }

    });

    }
}

```

**OUTPUT:**



**AIM**

11.. Demonstration of options menu.

**Programming Code:****XML CODE****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>
```

**JAVA CODE****Mainactivity.java**

```
package com.example.option_angelmarty;
import androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle;
import android.view.Menu;
import android.view.MenuInflater;
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 onCreateOptionsMenu() 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:

        return true;case
R.id.find:

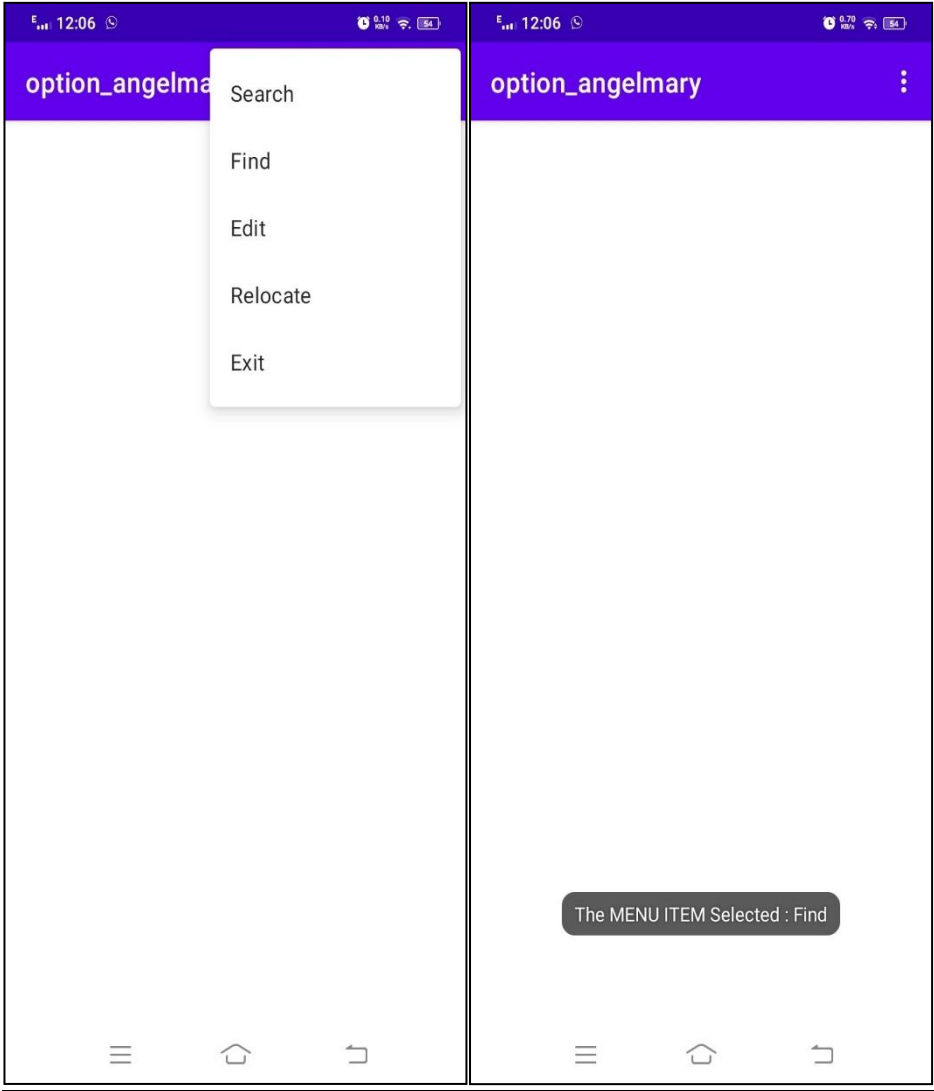
        return true; case R.id.edit:

        return true; case
R.id.relocate:

        return true;case
R.id.exit:
        return true;default:
return super.onOptionsItemSelected(menuItem);
}
}
}

```

**OUTPUT:**



**AIM**

**12.** Use of Spinner widget in android application demonstration.

**Programming Code:****XML CODE****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.spinner_angelmmary.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>
```

**String.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>
```

## **JAVA CODE**

### **Mainactivity.java**

```
package com.example.spinner;
```

```
import android.os.Bundle;
import android.view.View;
import android.widget.AdapterView;
import android.widget.Spinner;
import android.widget.Toast;
import androidx.appcompat.app.AppCompatActivity;
import android.widget.ArrayAdapter;
```

```
public class MainActivity extends AppCompatActivity
{
// these are the global variablesSpinner classSpinner, divSpinner;
// string variable to store selected valuesString 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 XML to 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 + "\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, View view,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,

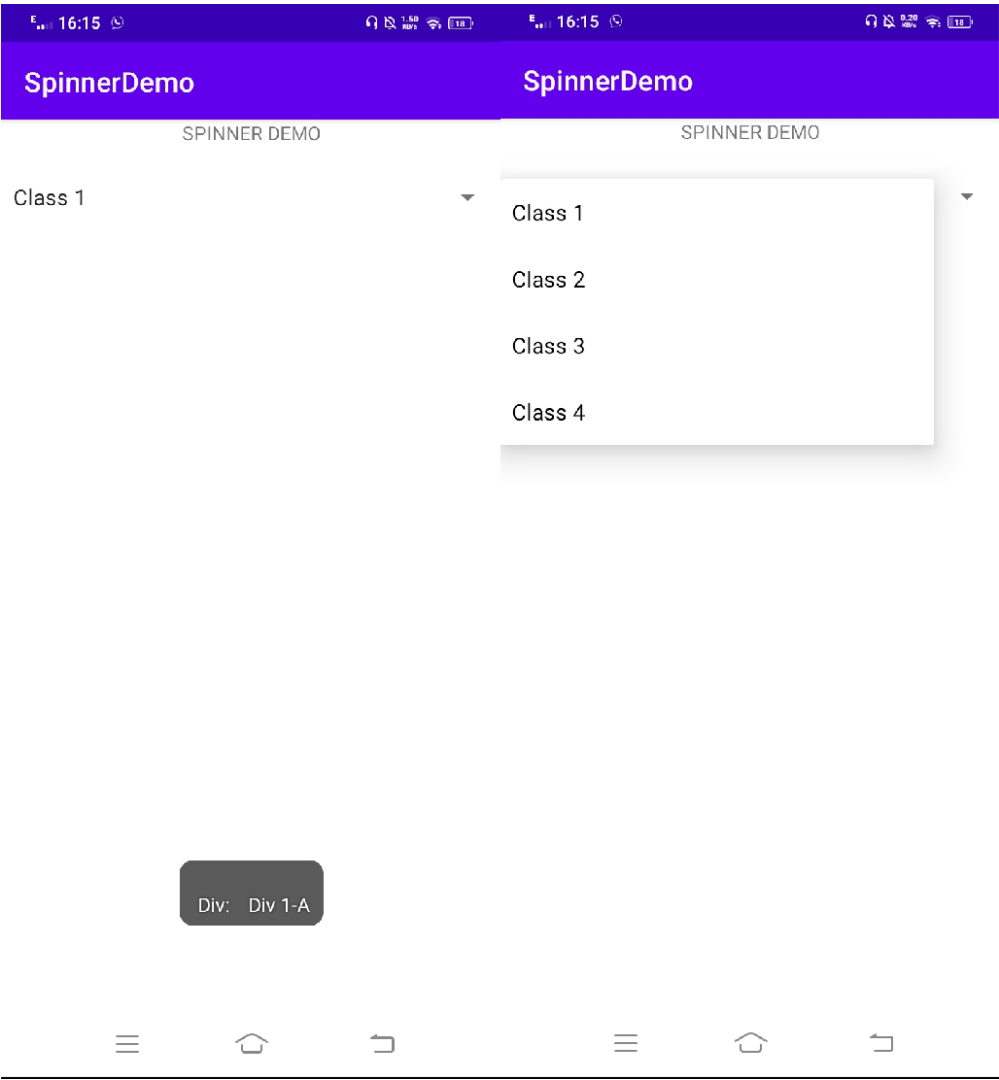
Toast.LENGTH_LONG).show();
}

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

});
}
}

```

**OUTPUT**



**AIM**

13. Database application using SQLite.

**Programming Code:****XML CODE****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>

```

## **JAVA CODE**

### **MainActivity.java**

```

package com.example.database_demo;

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 notDeleted",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.setOnClickListener(
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(
new View.OnClickListener() { @Override
public void onClick(View v) { Cursor res = myDb.getAllData();
if(res.getCount() == 0) {
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");
    }

    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 if it 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 willint id =

        item.getItemId();

//noinspection SimplifiableIfStatement
turn super.onOptionsItemSelected(item);
    }
}
```

**databasehelper.java**

```

package com.example.database_demo;
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
        KEYAUTOINCREMENT,NAME TEXT,SURNAME TEXT,MARKS INTEGER)");
    }

    @Override
    public void onUpgrade(SQLiteDatabase db, int oldVersion, intnewVersion) {
        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:**

The image displays two side-by-side screenshots of a mobile application interface for a database demo. The left screenshot shows the 'Add Data' screen with fields for Name, Surname, Marks, and id, and buttons for ADD DATA, VIEW ALL, UPDATE, and DELETE. The right screenshot shows the same interface with a 'Data' modal displayed, showing the details of the inserted record: Id :1, Name : Angel Mary, Surname :Joly, Marks :90. A 'Data Inserted' message is also visible at the bottom of the left screenshot.

**database\_demo**

Name Angel Mary

Surname Joly

Marks 90

id 23

**ADD DATA** **VIEW ALL**

**UPDATE** **DELETE**

**Data**

Id :1  
Name : Angel Mary  
Surname :Joly  
Marks :90

Data Inserted

