PROGRAM 5

XML File1

```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.smily.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>
```

XML File 2

```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.smily.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>
```

Java File1

```java
package com.example.smily;

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

```java
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);
    }

}
```

Java File2

```java
package com.example.smily;
import android.content.Intent;
import android.os.Bundle; import
android.view.View; import
android.widget.Button;

import com.example.smily.databinding.ActivityMain2Binding;
import androidx.appcompat.app.AppCompatActivity; import
androidx.navigation.ui.AppBarConfiguration;

public class MainActivity2 extends AppCompatActivity {
Button button1;

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

}
```

Face View1

```java
package com.example.smily;
 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 FaceView extends View {

    private static final String COLOR_HEX = "WHITE";
private final Paint mPaint;       private float
xPosition;       private float yPosition;       private
float radius;       private float strokeWidth = 20;
private float defaultScale = 0.90f;       private
float 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 right
bottom            canvas.drawArc(oval, 10, 150, false, mPaint); // happy face.
    }
}
```

FaceView2

```
package com.example.smily;
 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 FaceView2 extends View {

    private static final String COLOR_HEX = "WHITE";
private final Paint mPaint;      private float
xPosition;       private float yPosition;       private
float radius;        private float strokeWidth = 20;
private float defaultScale = 0.90f;        private
float 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);
```

```java
        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 / 5,
rightEyeXPosition, (float) (yPosition + yPosition / 2)); // left top right
bottom        canvas.drawArc(oval, 200, 140, false, mPaint); // sad face.
    }
}
```

<u>Output</u>