**UCS6611 - MOBILE APPLICATION DEVELOPMENT LABORATORY**

**Ex. No. 3 Create an application that uses graphical primitives**

**Date:** 12/8/21 **Name:** Srinath S

**Class:** CSE-C  **Roll:** 185001205

**Question:**

Create an application that uses graphical primitives

**Code:**

**MainActvity.java:**

package com.example.graphics;

import androidx.appcompat.app.AppCompatActivity;

import android.content.Intent;

import android.os.Bundle;

import android.view.View;

import android.view.animation.AnimationUtils;

import android.widget.Button;

import android.widget.ImageView;

public class MainActivity extends AppCompatActivity{

    @Override

    protected void onCreate(Bundle savedInstanceState) {

        super.onCreate(savedInstanceState);

        setContentView(R.layout.activity\_main);

        Button bt\_zoom=findViewById(R.id.bt\_zoom);

        Button bt\_fade=findViewById(R.id.bt\_fade);

        Button bt\_rotate=findViewById(R.id.bt\_rotate);

        Button bt\_down=findViewById(R.id.bt\_down);

        Button bt\_up=findViewById(R.id.bt\_up);

        Button bt\_forward=findViewById(R.id.bt\_forward);

        Button bt\_backward=findViewById(R.id.bt\_backward);

        final ImageView iv\_animate=findViewById(R.id.iv\_animate);

        bt\_zoom.setOnClickListener(new View.OnClickListener() {

            @Override

            public void onClick(View v) {

                iv\_animate.startAnimation(AnimationUtils.loadAnimation(getApplicationContext(),R.anim.zoom\_in));

            }

        });

        bt\_fade.setOnClickListener(new View.OnClickListener() {

            @Override

            public void onClick(View v) {

                iv\_animate.startAnimation(AnimationUtils.loadAnimation(getApplicationContext(),R.anim.fade\_in));

            }

        });

        bt\_rotate.setOnClickListener(new View.OnClickListener() {

            @Override

            public void onClick(View v) {

                iv\_animate.startAnimation(AnimationUtils.loadAnimation(getApplicationContext(),R.anim.rotate\_in));

            }

        });

        bt\_up.setOnClickListener(new View.OnClickListener() {

            @Override

            public void onClick(View v) {

                iv\_animate.animate().translationYBy(-300f).setDuration(600);

            }

        });

        bt\_down.setOnClickListener(new View.OnClickListener() {

            @Override

            public void onClick(View v) {

                iv\_animate.animate().translationYBy(300f).setDuration(600);

            }

        });

        bt\_forward.setOnClickListener(new View.OnClickListener() {

            @Override

            public void onClick(View v) {

                iv\_animate.animate().translationXBy(300f).setDuration(600);

            }

        });

        bt\_backward.setOnClickListener(new View.OnClickListener() {

            @Override

            public void onClick(View v) {

                iv\_animate.animate().translationXBy(-300f).setDuration(600);

            }

        });

    }

    public void nextPage(View view) {

        Intent intent = new Intent(this, ShapesActivity.class);

        startActivity(intent);

    }

}

**ShapeActivity.java:**

package com.example.graphics;

import androidx.appcompat.app.AppCompatActivity;

import android.content.Intent;

import android.graphics.Bitmap;

import android.graphics.Canvas;

import android.graphics.Color;

import android.graphics.Paint;

import android.graphics.drawable.BitmapDrawable;

import android.os.Bundle;

import android.widget.ImageView;

public class ShapesActivity extends AppCompatActivity {

    @Override

    protected void onCreate(Bundle savedInstanceState) {

        super.onCreate(savedInstanceState);

        setContentView(R.layout.activity\_shapes);

        Intent intent = getIntent();

        Bitmap bg = Bitmap.createBitmap(720, 1280, Bitmap.Config.ARGB\_8888);

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

        i.setBackgroundDrawable(new BitmapDrawable(bg));

        Canvas canvas = new Canvas(bg);

        Paint paint = new Paint();

        paint.setColor(Color.RED);

        paint.setTextSize(50);

        //To draw a Rectangle

        canvas.drawText("Rectangle", 420, 150, paint);

        canvas.drawRect(400, 200, 650, 700, paint);

        //To draw a Circle

        canvas.drawText("Circle", 120, 150, paint);

        canvas.drawCircle(200, 350, 150, paint);

        //To draw an arc

        canvas.drawText("Arc", 120, 800, paint);

        canvas.drawArc(50, 850, 350, 1150, 135, 120, true, paint);

        //To draw a Line

        canvas.drawText("Line", 480, 800, paint);

        canvas.drawLine(520, 850, 520, 1150, paint);

    }

}

**mainactivity.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">-->

<!--    <TextView-->

<!--        android:layout\_width="wrap\_content"-->

<!--        android:layout\_height="wrap\_content"-->

<!--        android:text="Hello World!"-->

<!--        app:layout\_constraintBottom\_toBottomOf="parent"-->

<!--        app:layout\_constraintLeft\_toLeftOf="parent"-->

<!--        app:layout\_constraintRight\_toRightOf="parent"-->

<!--        app:layout\_constraintTop\_toTopOf="parent" />-->

<!--</androidx.constraintlayout.widget.ConstraintLayout>-->

<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">

    <Button

        android:id="@+id/bt\_fade"

        android:layout\_width="wrap\_content"

        android:layout\_height="wrap\_content"

        android:layout\_alignParentStart="true"

        android:layout\_alignParentLeft="true"

        android:layout\_alignParentTop="true"

        android:layout\_centerHorizontal="true"

        android:layout\_marginStart="161dp"

        android:layout\_marginLeft="161dp"

        android:layout\_marginTop="198dp"

        android:text="Fade" />

    <Button

        android:id="@+id/bt\_rotate"

        android:layout\_width="wrap\_content"

        android:layout\_height="wrap\_content"

        android:layout\_alignParentStart="true"

        android:layout\_alignParentLeft="true"

        android:layout\_alignParentTop="true"

        android:layout\_marginStart="278dp"

        android:layout\_marginLeft="278dp"

        android:layout\_marginTop="195dp"

        android:text="Rotate" />

    <Button

        android:id="@+id/bt\_down"

        android:layout\_width="wrap\_content"

        android:layout\_height="wrap\_content"

        android:layout\_alignParentTop="true"

        android:layout\_centerHorizontal="true"

        android:layout\_marginTop="127dp"

        android:text="Down" />

    <Button

        android:id="@+id/bt\_zoom"

        android:layout\_width="wrap\_content"

        android:layout\_height="wrap\_content"

        android:layout\_alignParentStart="true"

        android:layout\_alignParentLeft="true"

        android:layout\_alignParentTop="true"

        android:layout\_marginStart="46dp"

        android:layout\_marginLeft="46dp"

        android:layout\_marginTop="200dp"

        android:text="Zoom" />

    <Button

        android:id="@+id/bt\_up"

        android:layout\_width="wrap\_content"

        android:layout\_height="wrap\_content"

        android:layout\_below="@+id/bt\_zoom"

        android:layout\_alignParentEnd="true"

        android:layout\_alignParentRight="true"

        android:layout\_centerHorizontal="true"

        android:layout\_marginTop="-238dp"

        android:layout\_marginEnd="163dp"

        android:layout\_marginRight="163dp"

        android:text="Up" />

    <Button

        android:id="@+id/bt\_forward"

        android:layout\_width="wrap\_content"

        android:layout\_height="wrap\_content"

        android:layout\_below="@+id/bt\_up"

        android:layout\_alignParentStart="true"

        android:layout\_marginStart="216dp"

        android:layout\_marginTop="4dp"

        android:text="Forward" />

    <Button

        android:id="@+id/bt\_backward"

        android:layout\_width="wrap\_content"

        android:layout\_height="wrap\_content"

        android:layout\_below="@+id/bt\_forward"

        android:layout\_alignParentStart="true"

        android:layout\_alignParentLeft="true"

        android:layout\_marginStart="74dp"

        android:layout\_marginLeft="74dp"

        android:layout\_marginTop="-46dp"

        android:text="Backward" />

    <ImageView

        android:id="@+id/iv\_animate"

        android:layout\_width="match\_parent"

        android:layout\_height="200dp"

        android:layout\_below="@+id/bt\_backward"

        android:layout\_centerInParent="true"

        android:layout\_marginLeft="30dp"

        android:layout\_marginTop="214dp"

        android:layout\_marginRight="30dp"

        android:background="@drawable/car" />

    <Button

        android:id="@+id/bt\_next"

        android:layout\_width="wrap\_content"

        android:layout\_height="wrap\_content"

        android:layout\_alignParentEnd="true"

        android:layout\_alignParentRight="true"

        android:layout\_alignParentBottom="true"

        android:layout\_marginEnd="69dp"

        android:layout\_marginRight="69dp"

        android:layout\_marginBottom="60dp"

        android:onClick="nextPage"

        android:text="Next" />

</RelativeLayout>

**Shapeactivity.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=".ShapesActivity">-->

<!--</androidx.constraintlayout.widget.ConstraintLayout>-->

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

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

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

    android:layout\_width="match\_parent"

    android:layout\_height="match\_parent"

    tools:context=".MainActivity">

    <ImageView

        android:layout\_width="match\_parent"

        android:layout\_height="match\_parent"

        android:id="@+id/imageView"/>

</RelativeLayout>

**Fade\_in.xml:**

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

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

    <alpha

        android:fromAlpha="0.0"

        android:toAlpha="1.0"

        android:duration="2000"/>

</set>

**Zoom\_in.xml:**

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

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

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

        android:fromXScale="0.5"

        android:fromYScale="0.5"

        android:toXScale="1.0"

        android:toYScale="1.0"

        android:duration="3000"

        android:pivotX="50%"

        android:pivotY="50%"/>

</set>

**Rotate\_in.xml:**

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

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

    <rotate

        android:fromDegrees="0"

        android:toDegrees="360"

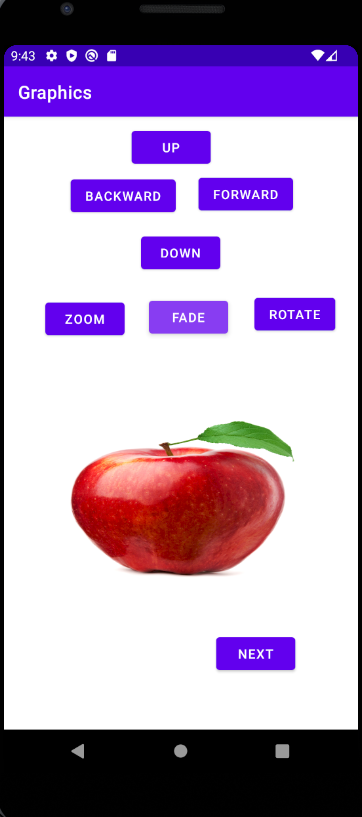
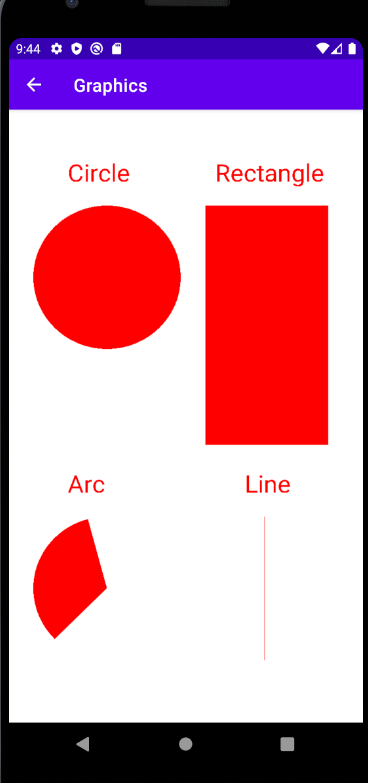
        android:pivotX="50%"

        android:pivotY="50%"

        android:duration="1000" />

</set>

**OUTPUTS:**

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