

Ex4 – Application Development using Basic Graphical Primitives

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Generate the following using graphical primitives. a. Draw shapes such as Line, Circle, Rectangle and Arc b. Perform animation using any Image (Gif, Jpeg) c. Perform transformation – Rotation, Zooming d. Draw a car and animate the car.

Ex3

MainActivity.java:

```
package com.example.ex3_graphics;

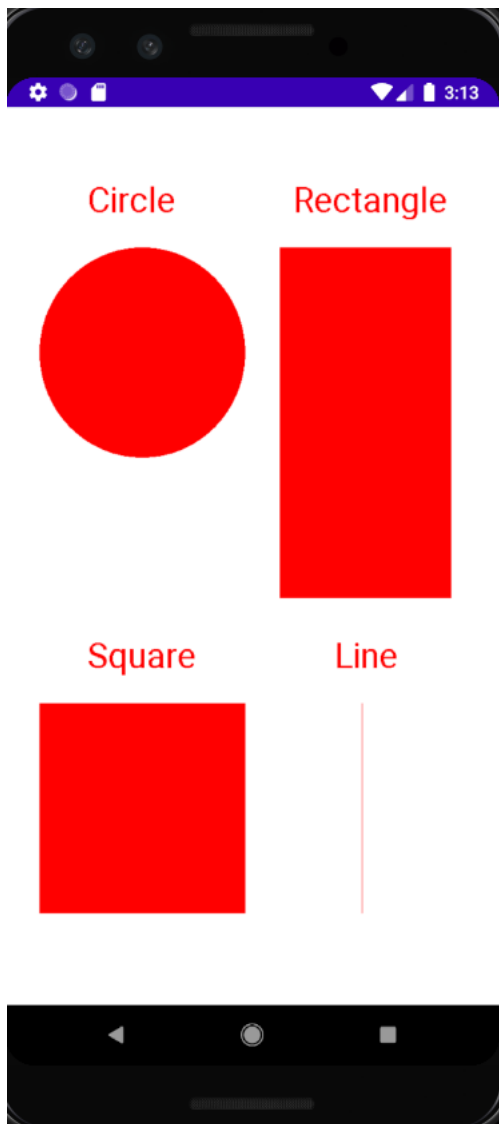
import android.app.Activity;
import android.graphics.Bitmap;
import android.graphics.Canvas;
import android.graphics.Color;
import android.graphics.Paint;
import android.graphics.drawable.BitmapDrawable;
import android.os.Bundle;
import android.widget.ImageView;
public class MainActivity extends Activity {
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        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 a Square
        canvas.drawText("Square", 120, 800, paint);
        canvas.drawRect(50, 850, 350, 1150, paint);
        //To draw a Line
        canvas.drawText("Line", 480, 800, paint);
        canvas.drawLine(520, 850, 520, 1150, paint);
    }
}
```

```
}  
}
```

Activity_main.xml :

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

OUTPUT:



Ex4

MainActivity.java:

```
package com.example.ex4_graphical_primitives;

import android.graphics.Bitmap;
import android.graphics.Canvas;
import android.graphics.Color;
import android.graphics.Paint;
import android.graphics.RectF;
import android.graphics.drawable.BitmapDrawable;
import androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle;
import android.view.View;
import android.view.animation.Animation;
import android.view.animation.AnimationUtils;
import android.widget.Button;
import android.widget.ImageView;

public class ex4_main extends AppCompatActivity {
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.ex4_main);
        Button bt_fade=findViewById(R.id.bt_fade);
        Button bt_rotate=findViewById(R.id.bt_rotate);
        Button bt_animate=findViewById(R.id.bt_animate);
        Button bt_car=findViewById(R.id.bt_car);
        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_fade.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {

                iv_animate.startAnimation(AnimationUtils.loadAnimation(getApplicationContext()
                t(),R.anim.fade_in));
            }
        });
        bt_rotate.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {

                iv_animate.startAnimation(AnimationUtils.loadAnimation(getApplicationContext()
                t(),R.anim.rotate_in));
            }
        });
        bt_animate.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {

                iv_animate.startAnimation(AnimationUtils.loadAnimation(getApplicationContext()
                t(),R.anim.zoom_in));
            }
        });
        bt_car.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
```

```

        Bitmap b=Bitmap.createBitmap(720,1280,
Bitmap.Config.ARGB_8888);
        iv_animate.setBackgroundDrawable(new BitmapDrawable(b));
        Canvas canvas=new Canvas(b);
        Paint p=new Paint();
        p.setStrokeWidth(10);
        p.setColor(Color.RED);
        RectF r=new RectF(100,100,400,300);
        canvas.drawRect(r,p);
    }
});
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);
    }
});
}
}
}

```

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.ex4_graphical_primitives.MainActivity">
    <Button
        android:id="@+id/bt_fade"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Fade In"
        android:layout_centerHorizontal="true"/>
    <Button
        android:id="@+id/bt_rotate"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Rotate"
        android:layout_below="@+id/bt_fade"
        android:layout_centerHorizontal="true"/>
    <Button
        android:id="@+id/bt_animate"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Animate"
        android:layout_below="@+id/bt_rotate"
        android:layout_centerHorizontal="true"/>
    <Button
        android:id="@+id/bt_car"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"

```

```
        android:text="Car"
        android:layout_below="@+id/bt_animate"
        android:layout_centerHorizontal="true"/>
    <Button
        android:id="@+id/bt_forward"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Forward"
        android:layout_below="@+id/bt_car"
        android:layout_centerHorizontal="true"/>
    <Button
        android:id="@+id/bt_backward"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Backward"
        android:layout_below="@+id/bt_forward"
        android:layout_centerHorizontal="true"/>

    <ImageView
        android:id="@+id/iv_animate"
        android:layout_width="321dp"
        android:layout_height="195dp"
        android:layout_below="@+id/bt_backward"
        android:layout_marginLeft="30dp"
        android:layout_marginTop="89dp"
        android:layout_marginRight="30dp"
        android:background="@drawable/car" />
</RelativeLayout>
```

OUTPUT:

