

Practical No. 07

TITLE: GRAPHICAL PRIMITIVES USING ANDROID STUDIO

AIM: IMPLEMENT GRAPHICAL PRIMITIVES USING ANDROID STUDIO

APPARATUS: ANDROID STUDIO

THEORY:

- **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"
        android:background="@drawable/bg22"
        tools:context=".MainActivity">
    <androidx.appcompat.widget.Toolbar
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:background="#000133"
        android:elevation="4dp">
    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:textSize="27dp"
        android:gravity="center"
        android:layout_marginStart="4dp"
        android:padding="2dp"
```

```
        android:textStyle="bold"
        android:text="@string/app_name"
        android:textColor="#f1e1cc">
    </TextView>
    <ImageView
        android:layout_width="57dp"
        android:layout_height="55dp"
        android:layout_gravity="center"
        android:layout_marginStart="57dp"
        android:layout_marginEnd="20dp"
        android:src="@drawable/bg12221"
        android:padding="10dp">
    </ImageView>
</androidx.appcompat.widget.Toolbar>
    <ImageView
        android:layout_width="match_parent"
        android:layout_height="match_parent"
        android:layout_marginTop="55dp"
        android:id="@+id/image">
    </ImageView>
</RelativeLayout>
```

- **MainActivity.java**

```
package com.example.graphicalprimitives;

import androidx.appcompat.app.AppCompatActivity;

import android.graphics.Bitmap;
import android.graphics.Canvas;
import android.graphics.Color;
import android.graphics.Paint;
import android.graphics.Path;
import android.graphics.drawable.BitmapDrawable;
import android.os.Bundle;
import android.widget.ImageView;

public class MainActivity extends AppCompatActivity {

    @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.image);
        i.setBackgroundDrawable(new BitmapDrawable(bg));
        Canvas canvas= new Canvas(bg);
        Paint paint= new Paint();
        paint.setColor(Color.CYAN);
        paint.setTextSize(50);
        canvas.drawText("Rectangle",420, 80, paint );
        canvas.drawRect(400, 130, 650, 500, paint);
        canvas.drawText("Circle", 120, 80, paint);
```

```

        canvas.drawCircle(200, 230, 90, paint);
        canvas.drawText("Square", 120, 450, paint);
        canvas.drawRect(100, 690, 290, 490, paint);
        canvas.drawText("Line", 480, 600, paint);
        canvas.drawLine(540, 630, 540, 930, paint);
        canvas.drawText("Triangle", 100, 820, paint);
        drawTriangle(canvas, paint, 200, 980, 200);
        canvas.drawText("Rhombus", 430, 1000, paint);
        drawRhombus(canvas, paint, 540, 1130, 200); }

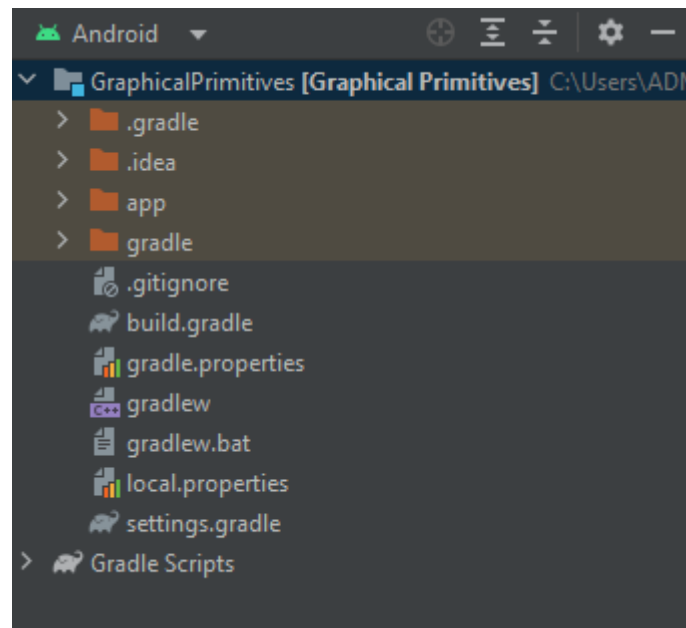
    public void drawRhombus(Canvas canvas, Paint paint, int x, int
y, int width) {
        int halfWidth = width / 2;
        Path path = new Path();
        path.moveTo(x, y + halfWidth); // Top
        path.lineTo(x - halfWidth, y); // Left
        path.lineTo(x, y - halfWidth); // Bottom
        path.lineTo(x + halfWidth, y); // Right
        path.lineTo(x, y + halfWidth); // Back to Top
        path.close();
        canvas.drawPath(path, paint); }

    public void drawTriangle(Canvas canvas, Paint paint, int x,
int y, int width) {
        int halfWidth = width / 2;
        Path path = new Path();
        path.moveTo(x, y - halfWidth); // Top
        path.lineTo(x - halfWidth, y + halfWidth); // Bottom left
        path.lineTo(x + halfWidth, y + halfWidth); // Bottom right
        path.lineTo(x, y - halfWidth); // Back to Top
        path.close();
        canvas.drawPath(path, paint);

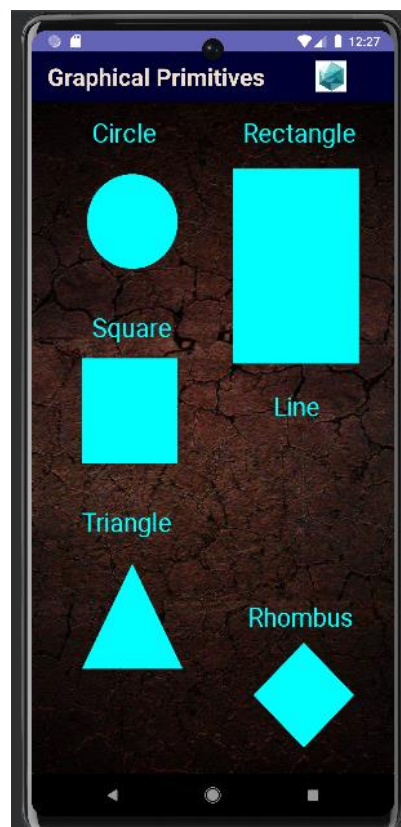
    }
}

```

- **Project Files –**



- **Output on Emulator –**



Conclusion: Thus we studied the implementation of Easy GUI in Android Studio.