Ex. No. : 03 **Date:**

Register No.: 221701033 **Name: Livia Mary Sebastian**

Graphical Primitives

Aim

Develop an android application to draw the circle, ellipse, rectangle and some text using Android Graphical primitives.

Procedure:

Step 1 : File -> NewProject

Provide the application name and Click "Next"

Step 2 : Select the target android devices

Select the minimum SDK to run the application. Click "Next".

Step 3 : Choose the activity for the application (By default choose "Blank Activity).

Click "Next".

Step 4 : Enter activity name and click "Finish".

Step 5 : Edit the program.

Step 6 : Run the application, 2-ways to run the application.

1. Running through emulator
2. Running through mobile device

AndroidManifest.xml

```
<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
  xmlns:tools="http://schemas.android.com/tools">

  <application
    android:allowBackup="true"
    android:dataExtractionRules="@xml/data_extraction_rules"
    android:fullBackupContent="@xml/backup_rules"
    android:icon="@mipmap/ic_launcher"
    android:label="@string/app_name"
    android:roundIcon="@mipmap/ic_launcher_round"
    android:supportsRtl="true"
    android:theme="@style/Theme.Primitives"
    tools:targetApi="31">
    <activity
      android:name=".MainActivity"
      android:exported="true">
      <intent-filter>
        <action android:name="android.intent.action.MAIN" />

        <category android:name="android.intent.category.LAUNCHER" />
      </intent-filter>
    </activity>
  </application>

</manifest>
```

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:id="@+id/main"
   android:layout_width="match_parent"
   android:layout_height="match_parent"
   tools:context=".SampleCanvas">
   <com.example.primitives.SampleCanvas
      android:layout_width="500dp"
      android:layout_height="500dp"
      app:layout_constraintBottom_toBottomOf="parent"
      app:layout_constraintEnd_toEndOf="parent"
      app:layout_constraintStart_toStartOf="parent"
      app:layout_constraintTop_toTopOf="parent"
      >

   </com.example.primitives.SampleCanvas>

</androidx.constraintlayout.widget.ConstraintLayout>
```

MainActivity.kt

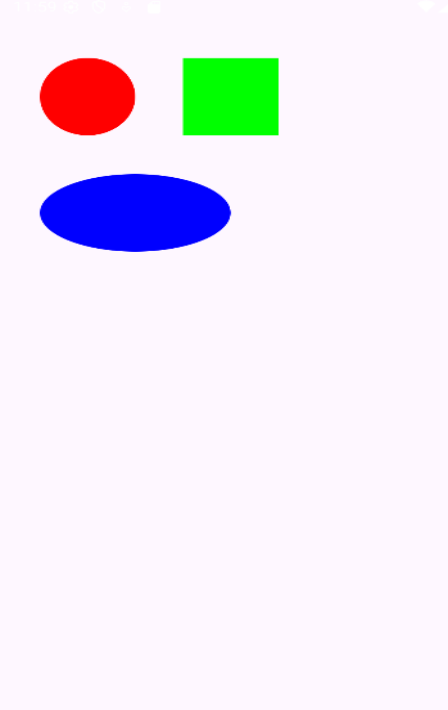
```
package com.example.primitives

import android.os.Bundle
import androidx.appcompat.app.AppCompatActivity

class MainActivity : AppCompatActivity() {
   override fun onCreate(savedInstanceState: Bundle?) {
      super.onCreate(savedInstanceState)
      setContentView(R.layout.activity_main)
   }
}
```

SampleCanvas.kt

```
package com.example.primitives
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

class SampleCanvas @JvmOverloads constructor(
    context: Context, attrs: AttributeSet? = null, defStyleAttr: Int = 0
) : View(context, attrs, defStyleAttr) {



    override fun onDraw(canvas: Canvas) {
        super.onDraw(canvas)
        val paint = Paint()

        // Draw a red circle
        paint.color = Color.RED
        val circleX = 200f
        val circleY = 200f
        val radius = 100f
        canvas.drawCircle(circleX, circleY, radius, paint)
```

```
// Draw a green square
    paint.color = Color.GREEN
    val left = 400f
    val top = 100f
    val right = 600f
    val bottom = 300f
    canvas.drawRect(left, top, right, bottom, paint)
    // Draw a blue ellipse
    paint.color = Color.BLUE
    val ovalLeft = 100f
    val ovalTop = 400f
    val ovalRight = 500f
    val ovalBottom = 600f
    val oval = RectF(ovalLeft, ovalTop, ovalRight, ovalBottom)
    canvas.drawOval(oval, paint)
```

Output



Result:

The experiment was conducted successfully