

MOBILE APPLICATION & DEVELOPMENT ASSIGNMENT

EX-03 ANDROID GRAPHICAL PRIMITIVES

AIM:

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

PROCEDURE:

1. Create a New Project:

- Open Android Studio → File → New Project
- Choose "Empty Activity", name the app, and finish setup.

2. Create a Custom View:

- Create a new Kotlin file (e.g., DrawView.kt) that extends View.
- Override the onDraw(canvas: Canvas) method.

3. Use Canvas & Paint to Draw Shapes:

- Use canvas.drawCircle(), canvas.drawOval(), canvas.drawRect(), canvas.drawText() in onDraw().

4. Update MainActivity.kt:

- Set the content view to your custom view:
setContentView(DrawView(this)).

5. Run the Application:

- Use an emulator or physical device to view the output.

CODE:

AndroidManifest.xml :

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

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```
<application
    android:allowBackup="true"
    android:label="ShapeDrawer"
    android:icon="@mipmap/ic_launcher"
    android:roundIcon="@mipmap/ic_launcher_round"
    android:supportsRtl="true"
    android:theme="@style/Theme.ShapeDrawer">
    <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"?>
<FrameLayout xmlns:android="http://schemas.android.com/apk/res/android"
    android:layout_width="match_parent"
    android:layout_height="match_parent">

    <com.example.drawshapes.ShapeCanvasView
        android:id="@+id/shapeCanvas"
```

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```
        android:layout_width="match_parent"
        android:layout_height="match_parent" />
</FrameLayout>
```

MainActivity.kt :

```
package com.example.drawshapes
```

```
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)
    }
}
```

```
package com.example.drawshapes
```

```
import android.content.Context
```

```
import android.graphics.*
```

```
import android.util.AttributeSet
```

```
import android.view.View
```

```
class ShapeCanvasView(context: Context, attrs: AttributeSet?) : View(context,
attrs) {
```

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```
private val paint = Paint(Paint.ANTI_ALIAS_FLAG)

override fun onDraw(canvas: Canvas) {
    super.onDraw(canvas)

    // Circle
    paint.color = Color.MAGENTA
    paint.style = Paint.Style.FILL
    canvas.drawCircle(200f, 200f, 100f, paint)

    // Ellipse
    paint.color = Color.CYAN
    val ellipse = RectF(350f, 100f, 650f, 250f)
    canvas.drawOval(ellipse, paint)

    // Rectangle
    paint.color = Color.YELLOW
    canvas.drawRect(100f, 400f, 500f, 600f, paint)

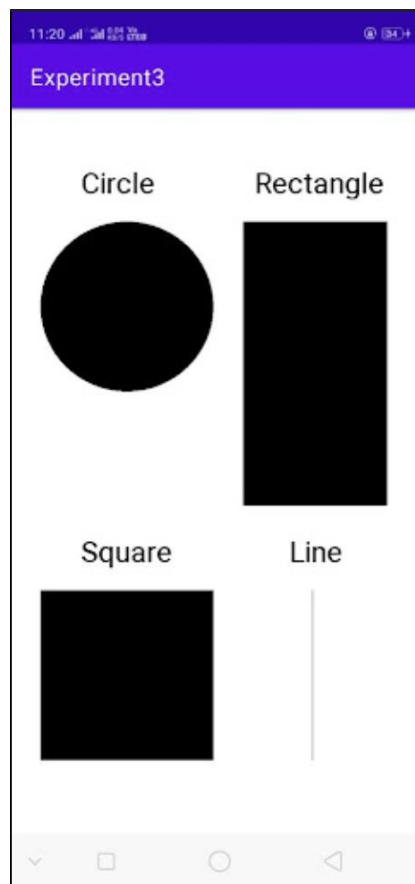
    // Text
    paint.color = Color.DKGRAY
    paint.textSize = 55f
    paint.typeface = Typeface.create(Typeface.SANS_SERIF,
    Typeface.BOLD)
    canvas.drawText("Drawing Shapes!", 120f, 720f, paint)
```

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```
}  
}
```

OUTPUT IMAGE:



RESULT:

The application has been successfully developed using Kotlin and android studio.