GUI Components

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
<?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.Ex3"
        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>
```

MainActivity.kt

```kotlin
package com.example.ex3

import android.graphics.*

import android.os.Bundle

import android.view.View

import
androidx.appcompat.app.A
ppCompatActivity

class MainActivity :
```

```kotlin
AppCompatActivity() {
    override fun
onCreate(savedInstanceSta
te: Bundle?) {

super.onCreate(savedInsta
nceState)

setContentView(MyCanvas
View(this))
    }

    class
MyCanvasView(context:
MainActivity) :
View(context) {
        private val paint =
Paint()

        override fun
onDraw(canvas: Canvas) {

super.onDraw(canvas)

        // Draw Circle
        paint.color =
Color.RED
        paint.style =
Paint.Style.FILL

canvas.drawCircle(200f,
200f, 100f, paint)
```

```kotlin
        // Draw Ellipse
(Oval in a RectF)
        paint.color =
Color.GREEN
        val oval =
RectF(350f, 150f, 600f,
300f)

canvas.drawOval(oval,
paint)

        // Draw Rectangle
        paint.color =
Color.BLUE
        val rect =
RectF(100f, 400f, 400f,
600f)

canvas.drawRect(rect,
paint)

        // Draw Text
        paint.color =
Color.BLACK
        paint.textSize = 60f

canvas.drawText("PRIMIT
IVES DAA!", 100f, 700f,
paint)
    }
  }
}
```

Activivty_main.xml

```xml
<?xml version="1.0"
encoding="utf-8"?>
<androidx.constraintlayo
ut.widget.ConstraintLay
out
xmlns:android="http://sc
hemas.android.com/apk/r
es/android"

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

xmlns:tools="http://sche
mas.android.com/tools"

android:id="@+id/main"

android:layout_width="
match_parent"

android:layout_height="
match_parent"

tools:context=".MainActi
vity">

    <TextView
```

```xml
        android:layout_width="wrap_content"

        android:layout_height="wrap_content"
        android:text="Hello World!"

        app:layout_constraintBottom_toBottomOf="parent"

        app:layout_constraintEnd_toEndOf="parent"

        app:layout_constraintStart_toStartOf="parent"

        app:layout_constraintTop_toTopOf="parent" />

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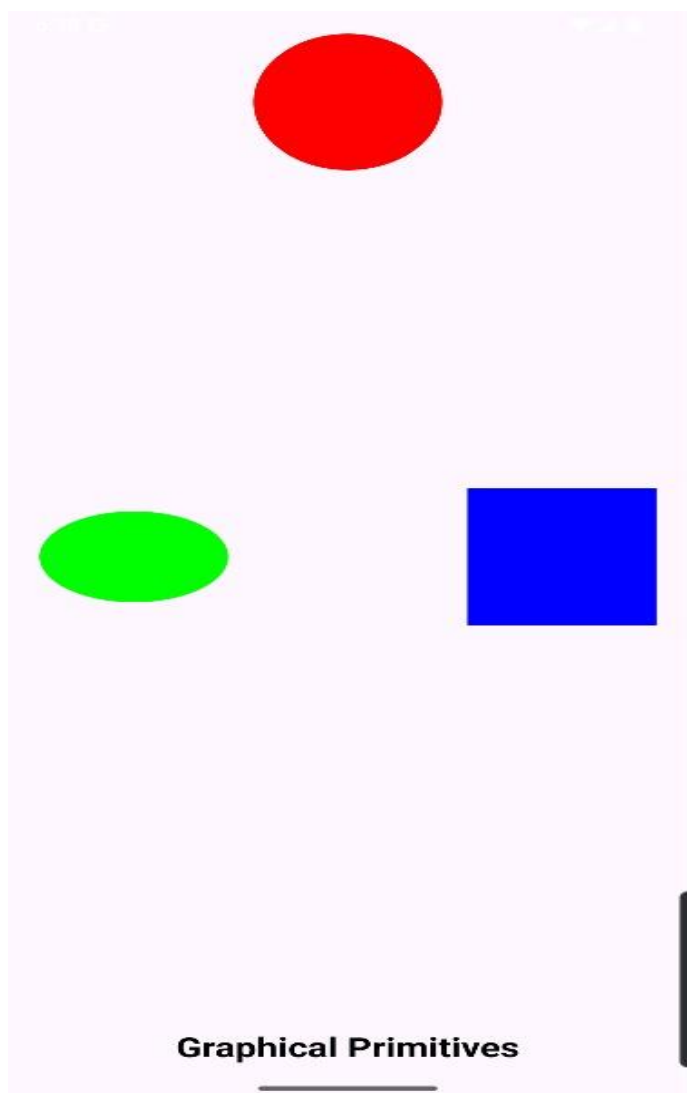
Output :

Graphical Primitives

Result:

The Application developed using Android Studio was done.