

MainActivity.java

```
package com.example.a3dprimitives;

import androidx.appcompat.app.AppCompatActivity;
import android.graphics.Bitmap;
import android.graphics.Canvas;
import android.graphics.Paint;
import android.graphics.Color;
import android.widget.ImageView;
import android.os.Bundle;

public class MainActivity extends AppCompatActivity {

    ImageView img;
    Bitmap bg;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        bg = Bitmap.createBitmap(720, 1280, Bitmap.Config.ARGB_8888);
        img = findViewById(R.id.imageView);
        img.setImageBitmap(bg);
        Canvas canvas = new Canvas(bg);
        Paint p1 = new Paint();
        p1.setStrokeWidth(5);
        p1.setColor(Color.BLACK);
        p1.setTextSize(50);
        canvas.drawText("Cube", 300, 100, p1);

        //CUBE
        canvas.drawText("Cube", 300, 100, p1);
        canvas.drawLine(100, 200, 600, 200, p1);
        canvas.drawLine(100, 200, 100, 400, p1);
        canvas.drawLine(100, 400, 600, 400, p1);
        canvas.drawLine(600, 200, 600, 400, p1);

        // CUBOID
        canvas.drawLine(200, 300, 700, 300, p1);
        canvas.drawLine(200, 300, 200, 500, p1);
        canvas.drawLine(200, 500, 700, 500, p1);
        canvas.drawLine(700, 300, 700, 500, p1);
```

```

// SPHERE
canvas.drawLine(100, 200, 200, 300, p1);
canvas.drawLine(100, 400, 200, 500, p1);
canvas.drawLine(600, 400, 700, 500, p1);
canvas.drawLine(600, 200, 700, 300, p1);

//PYRAMID
canvas.drawText("Cone", 300, 800, p1);
canvas.drawLine(400, 900, 500, 1100, p1);
canvas.drawLine(400, 900, 300, 1100, p1);
canvas.drawOval(300, 1050, 500, 1150, p1);

}
}

```

ic_launcher_foreground.xml

```

<vector xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:aapt="http://schemas.android.com/aapt"
    android:width="108dp"
    android:height="108dp"
    android:viewportWidth="108"
    android:viewportHeight="108">
    <path android:pathData="M31,63.928c0,0 6.4,-11 12.1,-13.1c7.2,-2.6 26,-1.4
26,-1.4l38.1,38.1l107,108.928l-32,-1l31,63.928z">
        <aapt:attr name="android:fillColor">
            <gradient
                android:endX="85.84757"
                android:endY="92.4963"
                android:startX="42.9492"
                android:startY="49.59793"
                android:type="linear">
                <item
                    android:color="#44000000"
                    android:offset="0.0" />
                <item
                    android:color="#00000000"
                    android:offset="1.0" />
            </gradient>
        </aapt:attr>
    </path>
    <path
        android:fillColor="#FFFFFF"
        android:fillType="nonZero"
        android:pathData="M65.3,45.828l3.8,-6.6c0.2,-0.4 0.1,-0.9 -0.3,-1.1c-
0.4,-0.2 -0.9,-0.1 -1.1,0.3l-3.9,6.7c-6.3,-2.8 -13.4,-2.8 -19.7,0l-3.9,-6.7c-
0.2,-0.4 -0.7,-0.5 -1.1,-0.3c38.8,38.328 38.7,38.828
38.9,39.228l3.8,6.6c36.2,49.428 31.7,56.028 31,63.928h46c76.3,56.028

```

```

71.8,49.428 65.3,45.828zM43.4,57.328c-0.8,0 -1.5,-0.5 -1.8,-1.2c-0.3,-0.7 -
0.1,-1.5 0.4,-2.1c0.5,-0.5 1.4,-0.7 2.1,-0.4c0.7,0.3 1.2,1 1.2,1.8C45.3,56.528
44.5,57.328 43.4,57.328L43.4,57.328zM64.6,57.328c-0.8,0 -1.5,-0.5 -1.8,-1.2s-
0.1,-1.5 0.4,-2.1c0.5,-0.5 1.4,-0.7 2.1,-0.4c0.7,0.3 1.2,1 1.2,1.8C66.5,56.528
65.6,57.328 64.6,57.328L64.6,57.328z"
        android:strokeWidth="1"
        android:strokeColor="#00000000" />
</vector>

```

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:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:context=".MainActivity">

    <TextView
        android:id="@+id/textView"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="2D Primitives"
        android:textSize="24sp"
        android:textStyle="bold"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.07" />

    <ImageView
        android:id="@+id/imageView"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.5"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toBottomOf="@+id/textView"
        app:srcCompat="@drawable/primitives_3d" />

</androidx.constraintlayout.widget.ConstraintLayout>

```

build.gradle

```
plugins {
    id 'com.android.application'
}

android {
    compileSdk 32

    defaultConfig {
        applicationId "com.example.expt2_3d_primitives"
        minSdk 21
        targetSdk 32
        versionCode 1
        versionName "1.0"

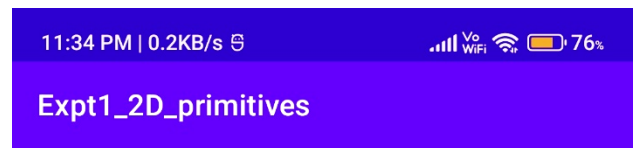
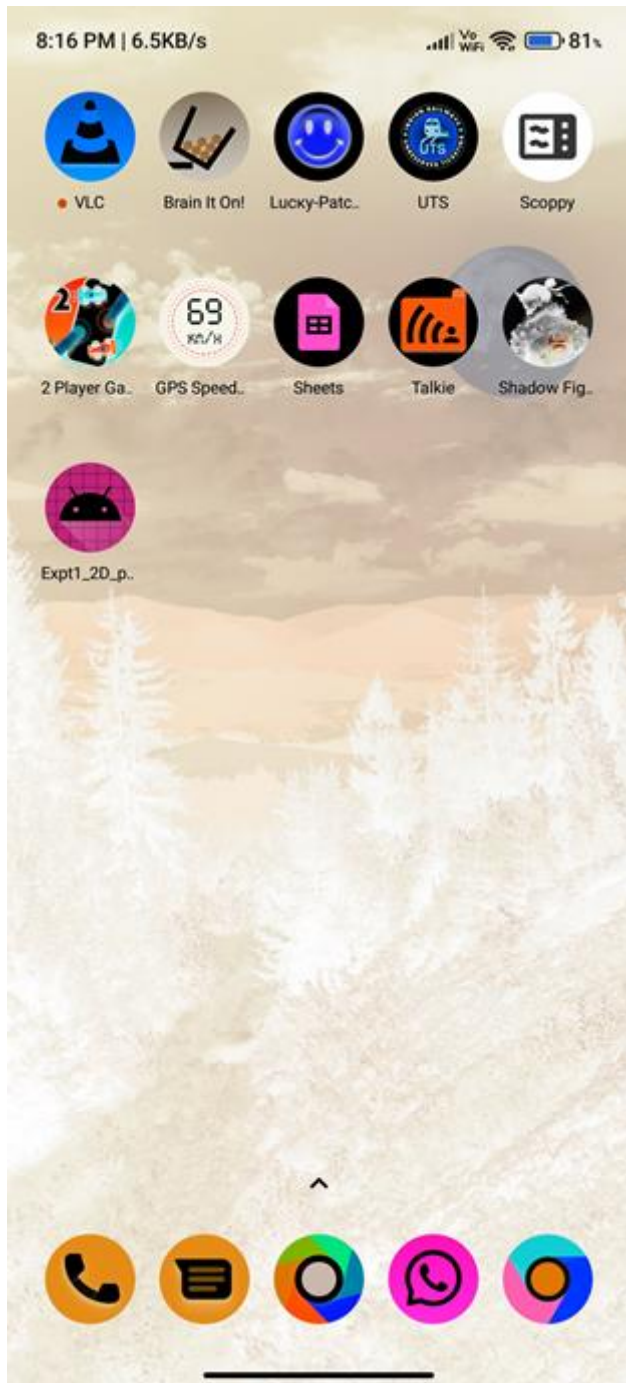
        testInstrumentationRunner "androidx.test.runner.AndroidJUnitRunner"
    }

    buildTypes {
        release {
            minifyEnabled false
            proguardFiles getDefaultProguardFile('proguard-android-optimize.txt'), 'proguard-rules.pro'
        }
    }
    compileOptions {
        sourceCompatibility JavaVersion.VERSION_1_8
        targetCompatibility JavaVersion.VERSION_1_8
    }
}

dependencies {

    implementation 'androidx.appcompat:appcompat:1.3.0'
    implementation 'com.google.android.material:material:1.4.0'
    implementation 'androidx.constraintlayout:constraintlayout:2.0.4'
    testImplementation 'junit:junit:4.13.2'
    androidTestImplementation 'androidx.test.ext:junit:1.1.3'
    androidTestImplementation 'androidx.test.espresso:espresso-core:3.4.0'
}
```

Output : (On Android device)



3D Primitives

