**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)**

 