EXPERIMENT - 02

CODE:

```
package com.example.myapplication;
import androidx.appcompat.app.AppCompatActivity;

import android.graphics.Bitmap;
import android.graphics.Canvas;
import android.graphics.Color;
import android.graphics.Paint;
import android.os.Bundle;
import android.widget.ImageView;

public class MainActivity extends AppCompatActivity {
    Bitmap bg;
    ImageView img;

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);

        // create bitmap
        bg = Bitmap.createBitmap(720, 1280, Bitmap.Config.RGB_565);
        img = findViewById(R.id.imageView);
        img.setImageBitmap(bg);

        // canvas creation
        Canvas canvas = new Canvas(bg);
        canvas.drawColor(Color.WHITE);

        // paint object creation
        Paint paint1 = new Paint();
        paint1.setColor(Color.GREEN);
        paint1.setStrokeWidth(5); // Set the line thickness
        paint1.setStyle(Paint.Style.STROKE); // Set to stroke (no fill)

        Paint paint2 = new Paint();
        paint2.setColor(Color.BLACK);
        paint2.setTextSize(30);

        canvas.drawText("Pratham Rohra - 210315", 60, 80, paint2);
        // draw 3D cube
        draw3DCube(canvas, 450, 200, 650, 400, paint1);
```

```java
        draw3DCuboid(canvas, 50, 200, 250, 600, paint1);
        draw3DCylinder(canvas, 50, 800, 250, 1100, paint1);
        draw3Dcone(canvas, 450, 800, 650, 1000, paint1);
    }

    private void draw3DCube(Canvas canvas, float left, float top, float right, float bottom, Paint
paint) {
        // Draw front face border
        canvas.drawRect(left, top, right, bottom, paint);

        // Draw back face border
        canvas.drawRect(left + 50, top + 50, right + 50, bottom + 50, paint);

        // Draw connecting lines for perspective
        canvas.drawLine(left, top, left + 50, top + 50, paint);
        canvas.drawLine(right, top, right + 50, top + 50, paint);
        canvas.drawLine(left, bottom, left + 50, bottom + 50, paint);
        canvas.drawLine(right, bottom, right + 50, bottom + 50, paint);
    }

    private void draw3DCuboid(Canvas canvas, float left, float top, float right, float bottom, Paint
paint) {
        // Draw front face border
        canvas.drawRect(left, top, right, bottom, paint);

        // Draw back face border
        canvas.drawRect(left + 50, top + 50, right + 50, bottom + 50, paint);

        // Draw connecting lines for perspective
        canvas.drawLine(left, top, left + 50, top + 50, paint);
        canvas.drawLine(right, top, right + 50, top + 50, paint);
        canvas.drawLine(left, bottom, left + 50, bottom + 50, paint);
        canvas.drawLine(right, bottom, right + 50, bottom + 50, paint);
    }

    private void draw3DCylinder(Canvas canvas, float left, float top, float right, float bottom, Paint
paint) {
        // Draw top ellipse
        canvas.drawOval(left, top, right, top + 50, paint);

        // Draw bottom ellipse
        canvas.drawOval(left, bottom - 50, right, bottom, paint);

        // Draw connecting lines
```

```java
            canvas.drawLine(left, top + 25, left, bottom - 25, paint);
            canvas.drawLine(right, top + 25, right, bottom - 25, paint);
    }

    private void draw3Dcone(Canvas canvas, float left, float top, float right, float bottom, Paint
paint) {
        // Draw top ellipse
        canvas.drawOval(left, top, right, top + 50, paint);

        // Draw connecting lines
        canvas.drawLine(left, top + 25, left+100, bottom - 25, paint);
        canvas.drawLine(right, top + 25, left+100, bottom - 25, paint);
    }
}
```

XML:

```xml
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout 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">

    <ImageView
        android:layout_width="match_parent"
        android:layout_height="match_parent"
        android:id="@+id/imageView"/>
</LinearLayout>
```

OUTPUT: