**20CYS404**

**Android Application Development**

**End Sem Lab Exam**

**Ragul M**

**CH.EN.U4CYS21062**

**AIM:**

**To develop a Drawing application on android studio with required elements.**

**“activity\_main.xml”**

<LinearLayout  
 xmlns:android="http://schemas.android.com/apk/res/android"  
 android:layout\_width="match\_parent"  
 android:layout\_height="match\_parent"  
 android:orientation="vertical">  
  
 <!-- College Logo -->  
 <!-- College Logo -->  
 <ImageView  
 android:id="@+id/collegeLogo"  
 android:layout\_width="150dp"  
 android:layout\_height="150dp"  
 android:layout\_gravity="center"  
 android:src="@drawable/amritalogo"  
 android:contentDescription="College Logo"  
 android:adjustViewBounds="true"  
 android:layout\_marginTop="2dp"/>  
  
 <!-- Name TextView -->  
 <TextView  
 android:id="@+id/nameTextView"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:text="Ragul M"  
 android:textSize="14sp"  
 android:layout\_marginTop="4dp"  
 android:layout\_gravity="center" />  
  
 <!-- Roll Number TextView -->  
 <TextView  
 android:id="@+id/rollNumberTextView"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:text="Roll: Ch.en.u4cys21062"  
 android:textSize="14sp"  
 android:layout\_marginTop="4dp"  
 android:layout\_gravity="center" />  
  
 <!-- Drawing view -->  
 <com.example.freehanddrawingapp.PaintView  
 android:id="@+id/paintView"  
 android:layout\_width="match\_parent"  
 android:layout\_height="0dp"  
 android:layout\_weight="1"/>  
  
 <!-- Color selection panel -->  
 <GridLayout  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:rowCount="2"  
 android:columnCount="5"  
 android:layout\_marginTop="10dp"  
 android:layout\_marginBottom="10dp"  
 android:padding="5dp">  
  
 <!-- Color Buttons -->  
 <Button  
 android:id="@+id/colorRed"  
 android:layout\_width="0dp"  
 android:layout\_height="50dp"  
 android:layout\_columnWeight="1"  
 android:background="@android:color/holo\_red\_light"/>  
  
 <Button  
 android:id="@+id/colorGreen"  
 android:layout\_width="0dp"  
 android:layout\_height="50dp"  
 android:layout\_columnWeight="1"  
 android:background="@android:color/holo\_green\_light"/>  
  
 <Button  
 android:id="@+id/colorBlue"  
 android:layout\_width="0dp"  
 android:layout\_height="50dp"  
 android:layout\_columnWeight="1"  
 android:background="@android:color/holo\_blue\_light"/>  
  
 <Button  
 android:id="@+id/colorYellow"  
 android:layout\_width="0dp"  
 android:layout\_height="50dp"  
 android:layout\_columnWeight="1"  
 android:background="@android:color/holo\_orange\_light"/>  
  
 <Button  
 android:id="@+id/colorPurple"  
 android:layout\_width="0dp"  
 android:layout\_height="50dp"  
 android:layout\_columnWeight="1"  
 android:background="#8E24AA"/>  
  
 <Button  
 android:id="@+id/colorOrange"  
 android:layout\_width="0dp"  
 android:layout\_height="50dp"  
 android:layout\_columnWeight="1"  
 android:background="@android:color/holo\_orange\_dark"/>  
  
 <Button  
 android:id="@+id/colorCyan"  
 android:layout\_width="0dp"  
 android:layout\_height="50dp"  
 android:layout\_columnWeight="1"  
 android:background="@android:color/holo\_blue\_bright"/>  
  
 <Button  
 android:id="@+id/colorBlack"  
 android:layout\_width="0dp"  
 android:layout\_height="50dp"  
 android:layout\_columnWeight="1"  
 android:background="@android:color/black"/>  
  
 <Button  
 android:id="@+id/colorWhite"  
 android:layout\_width="0dp"  
 android:layout\_height="50dp"  
 android:layout\_columnWeight="1"  
 android:background="@android:color/white"/>  
  
 <Button  
 android:id="@+id/colorGrey"  
 android:layout\_width="0dp"  
 android:layout\_height="50dp"  
 android:layout\_columnWeight="1"  
 android:background="@android:color/darker\_gray"/>  
 </GridLayout>  
  
 <!-- Tool buttons like pen, eraser, and clear -->  
 <LinearLayout  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:orientation="horizontal"  
 android:layout\_gravity="bottom"  
 android:padding="10dp">  
  
 <Button  
 android:id="@+id/buttonPen"  
 android:layout\_width="0dp"  
 android:layout\_height="wrap\_content"  
 android:layout\_weight="1"  
 android:text="Pen"/>  
  
 <Button  
 android:id="@+id/buttonEraser"  
 android:layout\_width="0dp"  
 android:layout\_height="wrap\_content"  
 android:layout\_weight="1"  
 android:text="Eraser"/>  
  
 <Button  
 android:id="@+id/buttonClear"  
 android:layout\_width="0dp"  
 android:layout\_height="wrap\_content"  
 android:layout\_weight="1"  
 android:text="Clear"/>  
 </LinearLayout>  
  
</LinearLayout>

**“MainActivity.java”**

package com.example.freehanddrawingapp;  
  
import android.graphics.Color;  
import android.os.Bundle;  
import android.view.View;  
import android.widget.Button;  
import androidx.appcompat.app.AppCompatActivity;  
  
public class MainActivity extends AppCompatActivity {  
  
 private PaintView paintView;  
  
 @Override  
 protected void onCreate(Bundle savedInstanceState) {  
 super.onCreate(savedInstanceState);  
 setContentView(R.layout.*activity\_main*);  
  
 paintView = findViewById(R.id.*paintView*);  
  
 // Set up color buttons  
 setupColorButtons();  
  
 // Set up tool buttons  
 setupToolButtons();  
 }  
  
 private void setupColorButtons() {  
 Button colorRed = findViewById(R.id.*colorRed*);  
 Button colorGreen = findViewById(R.id.*colorGreen*);  
 Button colorBlue = findViewById(R.id.*colorBlue*);  
 Button colorYellow = findViewById(R.id.*colorYellow*);  
 Button colorPurple = findViewById(R.id.*colorPurple*);  
 Button colorOrange = findViewById(R.id.*colorOrange*);  
 Button colorCyan = findViewById(R.id.*colorCyan*);  
 Button colorBlack = findViewById(R.id.*colorBlack*);  
 Button colorWhite = findViewById(R.id.*colorWhite*);  
 Button colorGrey = findViewById(R.id.*colorGrey*);  
  
 // Setting click listeners for all color buttons  
 colorRed.setOnClickListener(v -> paintView.setColor(Color.*RED*));  
 colorGreen.setOnClickListener(v -> paintView.setColor(Color.*GREEN*));  
 colorBlue.setOnClickListener(v -> paintView.setColor(Color.*BLUE*));  
 colorYellow.setOnClickListener(v -> paintView.setColor(Color.*YELLOW*));  
 colorPurple.setOnClickListener(v -> paintView.setColor(Color.*parseColor*("#8E24AA"))); // Purple color  
 colorOrange.setOnClickListener(v -> paintView.setColor(Color.*parseColor*("#FFA500"))); // Orange color  
 colorCyan.setOnClickListener(v -> paintView.setColor(Color.*CYAN*));  
 colorBlack.setOnClickListener(v -> paintView.setColor(Color.*BLACK*));  
 colorWhite.setOnClickListener(v -> paintView.setColor(Color.*WHITE*));  
 colorGrey.setOnClickListener(v -> paintView.setColor(Color.*GRAY*));  
 }  
  
 private void setupToolButtons() {  
 Button buttonPen = findViewById(R.id.*buttonPen*);  
 Button buttonEraser = findViewById(R.id.*buttonEraser*);  
 Button buttonClear = findViewById(R.id.*buttonClear*);  
  
 buttonPen.setOnClickListener(v -> paintView.setPenMode());  
 buttonEraser.setOnClickListener(v -> paintView.setEraserMode());  
 buttonClear.setOnClickListener(v -> paintView.clearCanvas());  
 }  
}

**“color\_palette.xml”**

<?xml version="1.0" encoding="utf-8"?>  
<GridLayout  
 xmlns:android="http://schemas.android.com/apk/res/android"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:rowCount="2"  
 android:columnCount="5"  
 android:layout\_marginTop="10dp"  
 android:layout\_marginBottom="10dp"  
 android:padding="5dp">  
  
 <!-- Color Buttons with Different IDs -->  
 <Button  
 android:id="@+id/colorRed"  
 android:layout\_width="0dp"  
 android:layout\_height="50dp"  
 android:layout\_columnWeight="1"  
 android:background="@android:color/holo\_red\_light" />  
  
 <Button  
 android:id="@+id/colorGreen"  
 android:layout\_width="0dp"  
 android:layout\_height="50dp"  
 android:layout\_columnWeight="1"  
 android:background="@android:color/holo\_green\_light" />  
  
 <Button  
 android:id="@+id/colorBlue"  
 android:layout\_width="0dp"  
 android:layout\_height="50dp"  
 android:layout\_columnWeight="1"  
 android:background="@android:color/holo\_blue\_light" />  
  
 <Button  
 android:id="@+id/colorYellow"  
 android:layout\_width="0dp"  
 android:layout\_height="50dp"  
 android:layout\_columnWeight="1"  
 android:background="@android:color/holo\_orange\_light" />  
  
 <Button  
 android:id="@+id/colorPurple"  
 android:layout\_width="0dp"  
 android:layout\_height="50dp"  
 android:layout\_columnWeight="1"  
 android:background="#8E24AA" />  
  
 <Button  
 android:id="@+id/colorOrange"  
 android:layout\_width="0dp"  
 android:layout\_height="50dp"  
 android:layout\_columnWeight="1"  
 android:background="@android:color/holo\_orange\_dark" />  
  
 <Button  
 android:id="@+id/colorCyan"  
 android:layout\_width="0dp"  
 android:layout\_height="50dp"  
 android:layout\_columnWeight="1"  
 android:background="@android:color/holo\_blue\_bright" />  
  
 <Button  
 android:id="@+id/colorBlack"  
 android:layout\_width="0dp"  
 android:layout\_height="50dp"  
 android:layout\_columnWeight="1"  
 android:background="@android:color/black" />  
  
 <Button  
 android:id="@+id/colorWhite"  
 android:layout\_width="0dp"  
 android:layout\_height="50dp"  
 android:layout\_columnWeight="1"  
 android:background="@android:color/white" />  
  
 <Button  
 android:id="@+id/colorGrey"  
 android:layout\_width="0dp"  
 android:layout\_height="50dp"  
 android:layout\_columnWeight="1"  
 android:background="@android:color/darker\_gray" />  
  
</GridLayout>

**Output:**

