**activity\_main.xml**

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

<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"

 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="match\_parent"

 android:layout\_height="match\_parent"

 android:text="Shake to switch color" />

</RelativeLayout>

**MainActivity.java**

**package in.edu.vpt.sensorbackground;**

**import android.app.Activity;**

**import android.graphics.Color;**

**import android.hardware.Sensor;**

**import android.hardware.SensorEvent;**

**import android.hardware.SensorEventListener;**

**import android.hardware.SensorManager;**

**import android.os.Bundle;**

**import android.view.View;**

**import android.widget.Toast;**

**public class MainActivity extends Activity implements SensorEventListener {**

 **private SensorManager sensorManager;**

 **private boolean isColor = false;**

 **private View view;**

 **private long lastUpdate;**

 **@Override**

 **protected void onCreate(Bundle savedInstanceState) {**

 **super.onCreate(savedInstanceState);**

 **setContentView(R.layout.activity\_main);**

 **view = findViewById(R.id.textView);**

 **view.setBackgroundColor(Color.GREEN);**

 **sensorManager = (SensorManager) getSystemService(SENSOR\_SERVICE);**

 **lastUpdate = System.currentTimeMillis();**

 **}**

 **@Override**

 **public void onAccuracyChanged(Sensor sensor, int accuracy) {}**

 **@Override**

 **public void onSensorChanged(SensorEvent event) {**

 **if (event.sensor.getType() == Sensor.TYPE\_ACCELEROMETER) {**

 **getAccelerometer(event);**

 **}**

 **}**

 **private void getAccelerometer(SensorEvent event) {**

 **float[] values = event.values;**

 **// Movement**

 **float x = values[0];**

 **float y = values[1];**

 **float z = values[2];**

 **float accelationSquareRoot = (x \* x + y \* y + z \* z)**

 **/ (SensorManager.GRAVITY\_EARTH \* SensorManager.GRAVITY\_EARTH);**

 **long actualTime = System.currentTimeMillis();**

 **Toast.makeText(getApplicationContext(),String.valueOf(accelationSquareRoot)+" "+**

 **SensorManager.GRAVITY\_EARTH,Toast.LENGTH\_SHORT).show();**

 **if (accelationSquareRoot >= 2) //it will be executed if you shuffle**

 **{**

 **if (actualTime - lastUpdate < 200) {**

 **return;**

 **}**

 **lastUpdate = actualTime;//updating lastUpdate for next shuffle**

 **if (isColor) {**

 **view.setBackgroundColor(Color.GREEN);**

 **} else {**

 **view.setBackgroundColor(Color.RED);**

 **}**

 **isColor = !isColor;**

 **}**

 **}**

 **@Override**

 **protected void onResume() {**

 **super.onResume();**

 **// register this class as a listener for the orientation and**

 **// accelerometer sensors**

 **sensorManager.registerListener(this,sensorManager.getDefaultSensor(Sensor.TYPE\_ACCELEROMETER),**

 **SensorManager.SENSOR\_DELAY\_NORMAL);**

 **}**

 **@Override**

 **protected void onPause() {**

 **// unregister listener**

 **super.onPause();**

 **sensorManager.unregisterListener(this);**

 **}**

**}**

**Output**

****