**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**

****