

张老师设计的 app “Gravity” 的源码 -----

调用手机内置重力加速度传感器测当地重力加速度

//activity_main.xml

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

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

android:layout_width="match_parent"

android:layout_height="match_parent"

android:orientation="vertical"

>

<TextView

android:layout_width="match_parent"

android:layout_height="wrap_content"

android:text="张老师帮你做实验——测重力加速度"/>

<EditText

android:id="@+id/editText"

android:layout_width="match_parent"

android:layout_height="wrap_content"

/>

<EditText

android:id="@+id/editText2"

android:layout_width="match_parent"

android:layout_height="wrap_content"

/>

<EditText

android:id="@+id/editText3"

android:layout_width="match_parent"

android:layout_height="wrap_content"

/>

<EditText

android:id="@+id/editText_g"

android:layout_width="match_parent"

android:layout_height="wrap_content"

/>

<ImageView

```
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:src="@mipmap/m1"/>
```

```
//MainActivity.java
```

```
</LinearLayout>
```

```
package com.example.acceler;
import static java.lang.Math.sqrt;
```

```
import android.app.Activity;
import android.content.Context;
import android.hardware.Sensor;
import android.hardware.SensorEvent;
import android.hardware.SensorEventListener;
import android.hardware.SensorManager;
import android.os.Bundle;
import android.view.Menu;
import android.widget.EditText;
```

```
public class MainActivity extends Activity implements SensorEventListener {
    SensorManager sensormanager;
    EditText editText;
    EditText editText2;
    EditText editText3;
    EditText editText_g;
```

```
@Override
```

```
public void onCreate(Bundle savedInstanceState) {
    super.onCreate(savedInstanceState);
    setContentView(R.layout.activity_main);
    editText=(EditText)findViewById(R.id.editText);
    editText2=(EditText)findViewById(R.id.editText2);
    editText3=(EditText)findViewById(R.id.editText3);
    editText_g=(EditText)findViewById(R.id.editText_g);
```

```
    sensormanager=(SensorManager) getSystemService(Context.SENSOR_SERVICE);
```

```
}
```

```
/* (non-Javadoc)
```

```
 * @see Android.app.Activity#onResume()
```

```
 */
```

```

@Override
protected void onResume() {
    // TODO Auto-generated method stub
    super.onResume();
    //注册监听器，监听加速度传感器的变化
    //SensorManager.SENSOR_DELAY_UI 表示灵敏度，这个是适合用户界面一般行为的
频率
    //还有 SENSOR_DELAY_GAME、 SENSOR_DELAY_FASTEST、SENSOR_DELAY_NORMAL
顾名思义，具体可以看 api。
    sensormanager.registerListener(this,
sensormanager.getDefaultSensor(Sensor.TYPE_ACCELEROMETER),
SensorManager.SENSOR_DELAY_UI);
}

/* (non-Javadoc)
 * @see android.app.Activity#onStop()
 */
@Override
protected void onStop() {
    // TODO Auto-generated method stub
    super.onStop();
    sensormanager.unregisterListener(this);
}

public void onAccuracyChanged(Sensor sensor, int accuracy) {
    // TODO Auto-generated method stub

}

@Override
public void onSensorChanged(SensorEvent event) {
    // TODO Auto-generated method stub
    float[] values=event.values;
    StringBuilder sb=new StringBuilder();
    StringBuilder s2=new StringBuilder();
    StringBuilder s3=new StringBuilder();
    sb.append("X 方向上的加速度");
    sb.append(values[0]+"\\n");
    s2.append("Y 方向上的加速度");
    s2.append(values[1]+"\\n");
    s3.append("z 方向上的加速度");
    s3.append(values[2]+"\\n");
}

```

```
editText.setText(sb.toString());
editText2.setText(s2.toString());
editText3.setText(s3.toString());
```

```
        editText_g.setText("    本地重力加速度是：
"+"\\n"+g(values[0],values[1],values[2]).toString());
    }
    public String g(float g_x,float g_y,float g_z){
        double g=sqrt(g_x*g_x+g_y*g_y+g_z*g_z);

        return String.valueOf(g);
    }
}
```