# Android 高手进阶教程

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#### Android 常用名令集锦

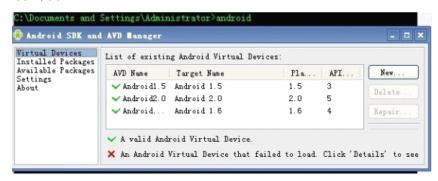
大家好,今天我们要讲的是 android 开发中,比较常用的名令集锦, 在我们开发中难 免用到 Android 命令,有些确实命令确实很有用处。

特别对于一些初学者来说,命令根本没有想过用也不会用,比如他们想安装一个. apk 文件到模拟器上面,但是他们不会启动模拟器,他们只会先启动 Eclipse,然后在启动模拟器,这样不但浪费时间,而且 Eclipse 又占用你的内存。这也是我为什么总结这篇文章的原因了,希望对大家有所帮助。

如果想让系统认识你输入的命令(如:输入 android 命令)有两种方法: 1. 设置环境变量. (和设置 java 路径一样,具体网上查哦!); 2. 直接进 入你 SDK 里 tools 目录 (cd:sdkpath/tools)这样也 OK. 不过在此建议使用第一种!下面就是自己的小小总结:

#### 1. android:

对你只要输入 android 就会出来, SDK and AVD manager 我们可以更新 SDK, 增删修改 AVD. 效果如下图:



2. android list avds:

这条命令将会列出所有我们创建的 android 模拟器. 效果如下图:

```
:\Documents and Settings\Administrator>android list avds
Available Android Virtual Devices:
   Name: Android1.5
   Path: C:\Documents and Settings\Administrator\. android\avd\Android1. 5. avd
 Target: Android 1.5 (API level 3)
   Skin: HVGA
 Sdcard: 64M
   Name: Android2.0
Path: C:\Documents and Settings\Administrator\.android\avd\Android2.0.avd Target: Android 2.0 (API level 5)
  Skin: HVGA
 Sdcard: 64M
   Name: AndroidSdcard
   Path: C:\Documents and Settings\Administrator\. android\avd\AndroidSdcard. avd
 Target: Android 1.6 (API level 4)
   Skin: HVGA
 Sdcard: F:\android-sdk-1.5_r2\tools\sdcard.img
```

#### 3. android list targets:

这条命令是列出我们所有的 SDK 可用版本, 效果如下图:

```
C:\Documents and Settings\Administrator>android list targets
Available Android targets:
id: 1 or "android-2"
Name: Android 1.1
Type: Platform
API level: 2
Revision: 1
Skins: HVGA (default), HVGA-L, HVGA-P, QVGA-L, QVGA-P
id: 2 or "android-3"
Name: Android 1.5
Type: Platform
API level: 3
Revision: 1
Skins: HVGA (default), HVGA-L, HVGA-P, QVGA-L, QVGA-P
```

#### 4. adb devices:

这条命令是列出所有装载的设置,效果如下图(一个是模拟器,一个是真机):

```
C:\Documents and Settings\Administrator>adb devices
List of devices attached
0403766C1701A013 device
emulator-5554 device
```

#### 5. adb shell:

这条命令是进入设备根目录/,取得对设备的控制权,如输入 1s 命令等。

```
C:\Documents and Settings\Administrator>adb shell

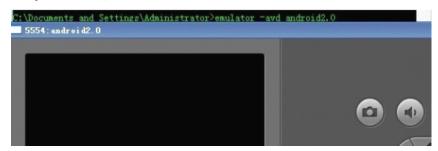
$ ls
ls
tmp
pds
sqlite_stmt_journals
config
cache
sdcard
```

6. adb install XXX. apk.

这条命令是安装 apk 文件,如果你有多个设备(而你想把 apk 安装到 emulator-5554 这个模拟器上)则要输入:adb install -s emulator-5554 D:/XXX.apk.

7. emulator -avd avdname

这条命令将启动一个模拟器,初学者学会这条,就不用下次启动模拟器的时候还要打开 Eclipse 了。用法如下:



#### 8. mksdcard 256M d:\sdcard.img

对于模拟器当然要创建 sdcard 了,这条命令是将在 D 盘下生成 256M 的 sdcard.

9. adb pull <remote> <local>/adb push <local> <remote>.

我们创建完 sdcard 以后,要向里面放东西,或者把里面的东西弄出来,就用到以上命令了。以 adb push(将 sdcard 外的东西存放进去.)为例,用法如下:adb push foo.txt/sdcard/foo.txt

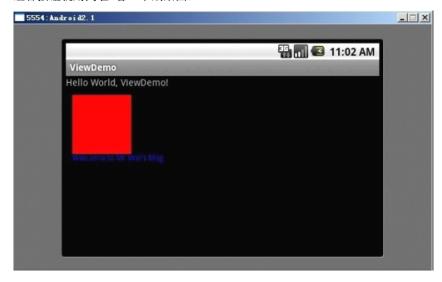
10. android create avd --name Android2.0 --target 5

这是创建 avd 的命令。—name 后面就是 avd 的名称, target 是 SDK 的版本。这条语句是创建名称为 Android2. 0 并且版本为 5 的 avd.

创建完可以用 android list avds。查看是否已经创建成功。

#### 11. ctrl + F11 键的使用

当我们启动模拟器的时候,通常是 port 模式,如果我们想在 land 下看效果,这个组合按钮就用到啦.看一下效果图:

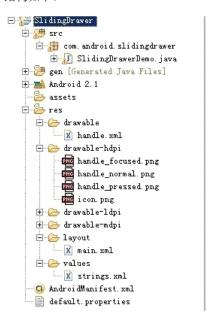


#### Android Launcher 抽屉类 SlidingDrawer 的使用

最近在研究 Lanucher,看了源码,发现了 SlidingDrawer 这个类,也就是所谓的 "抽屉"类。它的用法很简单,要包括 handle,和 content .

handle 就是当你点击它的时候,content 要么抽抽屉要么关抽屉。别的不多说了,具体步骤如下.

- 1. 新建 Android 工程, 命名为 SlidingDrawer.
- 2. 准备素材, 在这里我的图标是用 Launcher2 里面的图标, 放在 drawable-hdpi 文件夹目录结构如下:



3. 设置 main. xml 布局:代码如下:

view plaincopy to clipboardprint?

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

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

android:orientation="vertical"

```
android:layout_width="fill_parent"
      android:layout_height="fill_parent"
      android:background="#808080"
<SlidingDrawer
      android:id="@+id/slidingdrawer"
      android:layout_width="fill_parent"
      android:layout_height="fill_parent"
      android:orientation="vertical"
      android:handle="@+id/handle"
      android:content="@+id/content">
      <Button
                     android:id="@+id/handle"
                     android:layout_width="88dip"
                    android:layout_height="44dip"
                    android:background="@drawable/handle"
              />
      \langle Linear Layout \rangle
              android:id="@+id/content"
              android:layout_width="fill_parent"
              android:layout_height="fill_parent"
              android:background="#00ff00">
              <Button
                     android:id="@+id/button"
                    android:layout_width="wrap_content"
                    android:layout_height="wrap_content"
                     android:text="Button"
              />
              <EditText
```

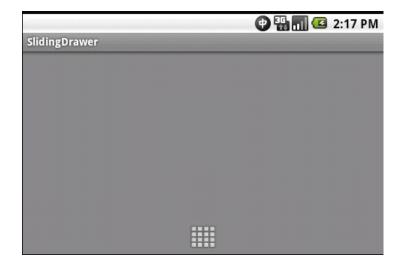
```
android:id="@+id/editText"
                     android:layout_width="fill_parent"
                     android:layout_height="wrap_content"
              />
      </LinearLayout>
</SlidingDrawer>
</LinearLayout>
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"</pre>
      android:orientation="vertical"
      android:layout width="fill parent"
      android:layout_height="fill_parent"
      android:background="#808080"
<SlidingDrawer
      android:id="@+id/slidingdrawer"
      android:layout_width="fill_parent"
      android:layout_height="fill_parent"
      android:orientation="vertical"
      android:handle="@+id/handle"
      android:content="@+id/content">
      <Button
                     android:id="@+id/handle"
                     android:layout_width="88dip"
                     android:layout_height="44dip"
                     android:background="@drawable/handle"
              />
      \langle Linear Layout \rangle
              android:id="@+id/content"
```

```
android:layout_width="fill_parent"
             android:layout_height="fill_parent"
             android:background="#00ff00">
             <Button
                   android:id="@+id/button"
                   android:layout_width="wrap_content"
                   android:layout_height="wrap_content"
                   android:text="Button"
             />
             <EditText
                   android:id="@+id/editText"
                   android:layout_width="fill_parent"
                   android:layout_height="wrap_content"
             />
     </LinearLayout>
</SlidingDrawer>
</LinearLayout>
4. 设置 handle 图标的样式,在 drawable 里添加 handle.xml,代码如下:
view plaincopy to clipboardprint?
<?xml version="1.0" encoding="utf-8"?>
<selector xmlns:android="http://schemas.android.com/apk/res/android">
     android:drawable="@drawable/handle_normal" />
     <item android:state_pressed="true"</pre>
android:drawable="@drawable/handle_pressed" />
     <item android:state_focused="true" android:state_enabled="true"</pre>
android:drawable="@drawable/handle_focused" />
     <item android:state_enabled="true"</pre>
android:drawable="@drawable/handle_normal" />
```

```
<item android:state_focused="true"</pre>
android:drawable="@drawable/handle_focused" />
</selector>
<?xml version="1.0" encoding="utf-8"?>
<selector xmlns:android="http://schemas.android.com/apk/res/android">
      <item android:state_window_focused="false" android:state_enabled="true"</pre>
android:drawable="@drawable/handle_normal" />
      <item android:state_pressed="true"</pre>
android:drawable="@drawable/handle_pressed" />
      <item android:state_focused="true" android:state_enabled="true"</pre>
android:drawable="@drawable/handle_focused" />
      <item android:state_enabled="true"</pre>
android:drawable="@drawable/handle_normal" />
      \verb| item and roid: state_focused="true" |
android:drawable="@drawable/handle_focused" />
</selector>
```

#### 5. 运行之。将会得到如下效果:





的比较简单呵呵,如果想深入了解,大家看 Launcher 源码吧!

#### Android 中自定义 View 的应用

```
大家好我们今天的教程是在 Android 教程中自定义 View 的学习,对于初学着来说,他
们习惯了 Android 传统的页面布局方式,如下代码:
view plaincopy to clipboardprint?
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"</pre>
     android:orientation="vertical"
     android:layout_width="fill_parent"
     android:layout_height="fill_parent"
     >
<TextView
     android:layout width="fill parent"
     android:layout_height="wrap_content"
     android:text="@string/hello"
     />
</LinearLayout>
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"</pre>
     android:orientation="vertical"
     android:layout_width="fill_parent"
     android:layout_height="fill_parent"
<TextView
     android:layout_width="fill_parent"
     android:layout_height="wrap_content"
     android:text="@string/hello"
```

#### </LinearLayout>

```
当然上面的布局方式可以帮助我们完成简单应用的开发了,但是如果你想写一个复杂的应用,这样就有点牵强了,大家不信可以下源码都研究看看,高手写的布局方式,如上面的布局高手通常是这样写的:
view plaincopy to clipboardprint?
<?xml version="1.0" encoding="utf-8"?>
<A>
```

<B></B>

</A>

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

<A>

<B></B>

</A>

view plaincopy to clipboardprint?

其中 A extends LinerLayout, B extends TextView.

其中 A extends LinerLayout, B extends TextView.

为了帮助大家更容易理解,我写了一个简单的 Demo,具体步骤如下:

首先新建一个 Android 工程 命名为 ViewDemo .

然后自定义一个 View 类, 命名为 My View (extends View) . 代码如下:

view plaincopy to clipboardprint?

package com. android. tutor;

import android.content.Context;

import android. graphics. Canvas;

import android.graphics.Color;

import android.graphics.Paint;

import android.graphics.Rect;

import android.graphics.Paint.Style;

import android.util.AttributeSet;

import android.view.View;

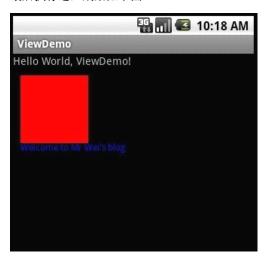
```
public class MyView extends View {
     private Paint mPaint;
     private Context mContext;
     private static final String mString = "Welcome to Mr Wei's blog";
     public MyView(Context context) {
             super(context);
     public MyView(Context context, AttributeSet attr)
             super(context, attr);
     @Override
     protected void onDraw(Canvas canvas) {
             //\ \mbox{TODO} Auto-generated method stub
             super.onDraw(canvas);
             mPaint = new Paint();
             //设置画笔颜色
             mPaint.setColor(Color.RED);
             //设置填充
             mPaint.setStyle(Style.FILL);
             //画一个矩形,前俩个是矩形左上角坐标,后面俩个是右下角坐标
             canvas.drawRect(new Rect(10, 10, 100, 100), mPaint);
```

```
mPaint.setColor(Color.BLUE);
              //绘制文字
              canvas.drawText(mString, 10, 110, mPaint);
      }
package com. android. tutor;
import android.content.Context;
import android.graphics.Canvas;
import android.graphics.Color;
import android.graphics.Paint;
import android.graphics.Rect;
import android.graphics.Paint.Style;
import android.util.AttributeSet;
import android.view.View;
public class MyView extends View {
private Paint mPaint;
private Context mContext;
private static final String mString = "Welcome to Mr Wei's blog";
public MyView(Context context) {
    super(context);
public MyView(Context context, AttributeSet attr)
    super(context, attr);
@Override
```

```
protected void onDraw(Canvas canvas) {
   // TODO Auto-generated method stub
   super. onDraw(canvas);
   mPaint = new Paint();
   //设置画笔颜色
   mPaint.setColor(Color.RED);
   //设置填充
   mPaint.setStyle(Style.FILL);
   //画一个矩形,前俩个是矩形左上角坐标,后面俩个是右下角坐标
   canvas.drawRect(new Rect(10, 10, 100, 100), mPaint);
   mPaint.setColor(Color.BLUE);
   //绘制文字
   canvas.drawText(mString, 10, 110, mPaint);
然后将我们自定义的 View 加入到 main. xml 布局文件中,代码如下:
view plaincopy to clipboardprint?
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"</pre>
     android:orientation="vertical"
     android:layout_width="fill_parent"
     android:layout_height="fill_parent"
<TextView
```

```
android:layout_width="fill_parent"
      android:layout_height="wrap_content"
      android:text="@string/hello"
<com. android. tutor. MyView
      android:layout_width="fill_parent"
      android:layout_height="fill_parent"
/>
</LinearLayout>
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"</pre>
      android:orientation="vertical"
      android:layout_width="fill_parent"
      android:layout_height="fill_parent"
<TextView
      android:layout_width="fill_parent"
      android:layout_height="wrap_content"
      android:text="@string/hello"
<com. android. tutor. MyView</pre>
android:layout_width="fill_parent"
      android:layout_height="fill_parent"
/>
\verb| \langle /LinearLayout \rangle| \\
```

# 最后执行之,效果如下图:



OK, 大功告成, 今天就写到这里

#### Android 中自定义属性(attr.xml,TypedArray)的使用

```
今天我们的教程是根据前面一节扩展进行的,如果你没有看,请点击 Android 高
手进阶教程(三) 查看第三课, 这样跟容易方便你的理解!
在 xml 文件里定义控件的属性,我们已经习惯了 android:attrs="",那么我们能不能定义
自己的属性能,比如:test:attrs="" 呢?答案是肯定的.
好了我就不卖关子了,直接进入主题。大致以下步骤:
一、 在 res/values 文件下定义一个 attrs. xml 文件. 代码如下:
view plaincopy to clipboardprint?
一、在 res/values 文件下定义一个 attrs. xml 文件. 代码如下:
<?xml version="1.0" encoding="utf-8"?>
<resources>
     <declare-styleable name="MyView">
           <attr name="textColor" format="color" />
           <attr name="textSize" format="dimension" />
     </declare-styleable>
</resources>
一、在 res/values 文件下定义一个 attrs. xml 文件. 代码如下:
<?xml version="1.0" encoding="utf-8"?>
<resources>
     <declare-styleable name="MyView">
           <attr name="textColor" format="color" />
           <attr name="textSize" format="dimension" />
     </declare-styleable>
</resources>
二、 我们在 MyView. java 代码修改如下,其中下面的构造方法是重点,我们获取定义的属
性我们 R. sytleable. MyView_textColor, 获取方法中后面通常设定默认值(float textSize
= a.getDimension(R.styleable.MyView_textSize, 36);), 防止我们在 xml 文件中没
```

#### 有定义. 从而使用默认值!

```
获取, MyView 就是定义在<declare-styleable name="MyView"
"></declare-styleable> 里的名字, 获取里面属性用 名字_ 属性 连接起来就可
以. TypedArray 通常最后调用.recycle()方法,为了保持以后使用该属性一致性!
view plaincopy to clipboardprint?
public MyView(Context context, AttributeSet attrs)
             super(context, attrs);
             mPaint = new Paint();
             TypedArray a = context.obtainStyledAttributes(attrs,
                        R. styleable. MyView);
             int textColor = a.getColor(R.styleable.MyView_textColor,
                        OXFFFFFFF);
             float textSize = a.getDimension(R.styleable.MyView_textSize,
36);
             mPaint.setTextSize(textSize);
             mPaint.setColor(textColor);
             a.recycle();
public MyView(Context context, AttributeSet attrs)
   super(context, attrs);
   mPaint = new Paint();
   TypedArray a = context.obtainStyledAttributes(attrs,
```

```
R. styleable. MyView);
    int textColor = a.getColor(R.styleable.MyView_textColor,
      OXFFFFFFF);
    float textSize = a.getDimension(R.styleable.MyView_textSize, 36);
    mPaint.setTextSize(textSize);
    mPaint.setColor(textColor);
    a.recycle();
}
MyView. java 全部代码如下:
view plaincopy to clipboardprint?
package com. android. tutor;
import android.content.Context;
import android.content.res.TypedArray;
import android.graphics.Canvas;
import android.graphics.Color;
import android.graphics.Paint;
import android.graphics.Rect;
import android.graphics.Paint.Style;
import android.util.AttributeSet;
import android.view.View;
public class MyView extends View {
      private Paint mPaint;
      private Context mContext;
      private static final String mString = "Welcome to Mr Wei's blog";
      public MyView(Context context) {
```

```
super(context);
             mPaint = new Paint();
     public MyView(Context context, AttributeSet attrs)
             super(context, attrs);
             mPaint = new Paint();
             TypedArray a = context.obtainStyledAttributes(attrs,
                         R. styleable. MyView);
             int textColor = a.getColor(R.styleable.MyView_textColor,
                         OXFFFFFFF);
             float textSize = a.getDimension(R.styleable.MyView_textSize,
36);
             mPaint.setTextSize(textSize);
             mPaint.setColor(textColor);
             a.recycle();
     @Override
     protected void onDraw(Canvas canvas) {
             // TODO Auto-generated method stub
             super.onDraw(canvas);
             //设置填充
             mPaint.setStyle(Style.FILL);
             //画一个矩形,前俩个是矩形左上角坐标,后面俩个是右下角坐标
```

```
canvas.drawRect(new Rect(10, 10, 100, 100), mPaint);
              mPaint.setColor(Color.BLUE);
              //绘制文字
              canvas.drawText(mString, 10, 110, mPaint);
      }
package com. android. tutor;
import android.content.Context;
import android.content.res.TypedArray;
import android.graphics.Canvas;
import android.graphics.Color;
import android.graphics.Paint;
import android.graphics.Rect;
import android.graphics.Paint.Style;
import android.util.AttributeSet;
import android.view.View;
public class MyView extends View {
private Paint mPaint;
private Context mContext;
private static final String mString = "Welcome to Mr Wei's blog";
public MyView(Context context) {
    super(context);
    mPaint = new Paint();
}
public MyView(Context context, AttributeSet attrs)
{
    super(context, attrs);
```

```
mPaint = new Paint();
   TypedArray a = context.obtainStyledAttributes(attrs,
     R. styleable. MyView);
    int textColor = a.getColor(R.styleable.MyView_textColor,
     OXFFFFFFF);
   float textSize = a.getDimension(R.styleable.MyView_textSize, 36);
   mPaint.setTextSize(textSize);
   mPaint.setColor(textColor);
   a.recycle();
@Override
protected void onDraw(Canvas canvas) {
   //\ \mbox{TODO} Auto-generated method stub
    super.onDraw(canvas);
   //设置填充
   mPaint.setStyle(Style.FILL);
   //画一个矩形,前俩个是矩形左上角坐标,后面俩个是右下角坐标
   canvas.drawRect(new Rect(10, 10, 100, 100), mPaint);
   mPaint.setColor(Color.BLUE);
   //绘制文字
   canvas.drawText(mString, 10, 110, mPaint);
}
```

三、将我们自定义的 MyView 加入布局 main. xml 文件中,平且使用自定义属性,自定义属性 必须加上: xmlns:test ="http://schemas.android.com/apk/res/com.android.tutor"蓝 色 是自定义属性的前缀,红色 是我们包名. main.xml 全部代码如下: view plaincopy to clipboardprint? <?xml version="1.0" encoding="utf-8"?> <LinearLayout</pre> xmlns:android="http://schemas.android.com/apk/res/android" xmlns:test="http://schemas.android.com/apk/res/com.android.tutor" android:orientation="vertical" android:layout\_width="fill\_parent" android:layout\_height="fill\_parent" <TextView android:layout\_width="fill\_parent" android:layout\_height="wrap\_content" android:text="@string/hello" <com. android. tutor. MyView</pre> android:layout\_width="fill\_parent" android:layout\_height="fill\_parent"

test:textSize="20px"
test:textColor="#ffff"

</LinearLayout>

```
<?xm1
version="1.0" encoding="utf-8"?>
<LinearLayout</pre>
xmlns:android="http://schemas.android.com/apk/res/android"
xmlns:test="http://schemas.android.com/apk/res/com.android.tutor"
      android:orientation="vertical"
      android:layout_width="fill_parent"
      and roid: layout\_height="fill\_parent"
<TextView
      android:layout_width="fill_parent"
      android:layout_height="wrap_content"
      android:text="@string/hello"
<com. android. tutor. MyView</pre>
android:layout_width="fill_parent"
      android:layout_height="fill_parent"
      test:textSize="20px"
      test:textColor="#fff"
/>
</LinearLayout>
```

# 四、运行之效果如下图:



今天就到此结束

# Android 中 LayoutInflater 的使用

大家好我们这一节讲的是 LayoutInflater 的使用, 在实际开发种 LayoutInflater 这个类还是非常有用的, 它的作用类似于 findViewById(),

不同点是LayoutInflater是用来找layout下xml布局文件,并且实例化!而findViewById() 是找具体xml下的具体 widget 控件(如:Button, TextView 等)。

为了让大家容易理解我做了一个简单的 Demo, 主布局 main. xml 里有一个 TextView 和一个 Button, 当点击 Button, 出现 Dialog, 而这个 Dialog 的布局方式是我们在 layout 目录下定义的 custom\_dialog. xml 文件(里面左右分布, 左边 ImageView, 右边 TextView)。

效果图如下:



下面我将详细的说明 Demo 的实现过程:

```
1、新建一个 Android 工程, 我们命名为 Layout Inflater Demo.
2、修改 main. xml 布局, 里面主要在原来基础上增加了一个 Button. 代码如下:
view plaincopy to clipboardprint?
<?xml version="1.0"</pre>
encoding="utf-8"?>
<LinearLayout</pre>
xmlns:android="http://schemas.android.com/apk/res/android"
      android:orientation="vertical"
      android:layout_width="fill_parent"
      android:layout_height="fill_parent"
<TextView
      android:layout_width="fill_parent"
      android:layout_height="wrap_content"
      android:text="@string/hello"
\leq Button
      android:id="@+id/button"
      android:layout_width="wrap_content"
      android:layout_height="wrap_content"
      android:text="ShowCustomDialog"
      />
</LinearLayout>
<?xml version="1.0"</pre>
encoding="utf-8"?>
<LinearLayout</pre>
xmlns:android="http://schemas.android.com/apk/res/android"
      android:orientation="vertical"
      android:layout_width="fill_parent"
```

```
android:layout_height="fill_parent"
<TextView
      android:layout_width="fill_parent"
      android:layout_height="wrap_content"
      android:text="@string/hello"
<Button
android:id="@+id/button"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:text="ShowCustomDialog"
/>
</LinearLayout>
3. 定义对话框的布局方式, 我们在 layout 目录下, 新建一个名为 custom_dialog. xml 文件
具体代码如下:
view plaincopy to clipboardprint?
<?xml version="1.0"</pre>
encoding="utf-8"?>
<LinearLayout</pre>
xmlns:android="http://schemas.android.com/apk/res/android"
                        android:orientation="horizontal"
                        android:layout_width="fill_parent"
                        android:layout_height="fill_parent"
                        android:padding="10dp"
      <ImageView android:id="@+id/image"</pre>
                         android:layout_width="wrap_content"
```

```
android:layout_height="fill_parent"
                          android:layout_marginRight="10dp"
                          />
      <TextView android:id="@+id/text"
                         android:layout_width="wrap_content"
                         android:layout_height="fill_parent"
                         android:textColor="#FFF"
                         />
</LinearLayout>
<?xml version="1.0"
encoding="utf-8"?>
\langle Linear Layout \rangle
xmlns:android="http://schemas.android.com/apk/res/android"
                         android:orientation="horizontal"
                         android:layout_width="fill_parent"
                         android:layout_height="fill_parent"
                         android:padding="10dp"
      <ImageView android:id="@+id/image"</pre>
                          android:layout_width="wrap_content"
                          android:layout_height="fill_parent"
                          android:layout_marginRight="10dp"
      <TextView android:id="@+id/text"
                         android:layout_width="wrap_content"
                         android:layout_height="fill_parent"
                         android:textColor="#FFF"
                         />
</LinearLayout>
```

```
4. 修改主程序 LayouInflaterDemo. java 代码如下:
view plaincopy to clipboardprint?
package com. android. tutor;
import android.app.Activity;
import android.app.AlertDialog;
import android.content.Context;
import android.os. Bundle;
import android.view.LayoutInflater;
import android.view.View;
import android.view.View.OnClickListener;
import android.widget.Button;
import android.widget.ImageView;
import android.widget.TextView;
public class LayoutInflaterDemo extends Activity implements
OnClickListener {
      private Button button;
      public void onCreate(Bundle savedInstanceState) {
              super. onCreate(savedInstanceState);
              setContentView(R. layout.main);
              button = (Button)findViewById(R.id.button);
              button.setOnClickListener(this);
      @Override
      public void onClick(View v) {
              showCustomDialog();
```

```
}
      public void showCustomDialog()
              AlertDialog.Builder builder;
              AlertDialog alertDialog;
              Context mContext = LayoutInflaterDemo.this;
              //下面俩种方法都可以
              ///LayoutInflater inflater = getLayoutInflater();
              LayoutInflater inflater = (LayoutInflater)
{\tt mContext.getSystemService} \ ({\tt LAYOUT\_INFLATER\_SERVICE}) \ ;
              View layout = inflater.inflate(R.layout.custom_dialog, null);
              TextView text = (TextView) layout.findViewById(R.id.text);
              text.setText("Hello, Welcome to Mr Wei's blog!");
              ImageView image = (ImageView) layout.findViewById(R.id.image);
              image.setImageResource(R.drawable.icon);
              builder = new AlertDialog.Builder(mContext);
              builder.setView(layout);
              alertDialog = builder.create();
              alertDialog.show();
package com. android. tutor;
import android.app.Activity;
import android.app.AlertDialog;
import android.content.Context;
import android.os. Bundle;
```

```
import android.view.LayoutInflater;
import android.view.View;
import android.view.View.OnClickListener;
import android.widget.Button;
import android.widget.ImageView;
import android.widget.TextView;
public class LayoutInflaterDemo extends Activity implements
OnClickListener {
private Button button;
      public void onCreate(Bundle savedInstanceState) {
              super.onCreate(savedInstanceState);
              setContentView(R.layout.main);
              button = (Button)findViewById(R.id.button);
              button.setOnClickListener(this);
@Override
public void onClick(View v) {
    showCustomDialog();
}
public void showCustomDialog()
    AlertDialog.Builder builder;
    AlertDialog alertDialog;
    Context mContext = LayoutInflaterDemo.this;
```

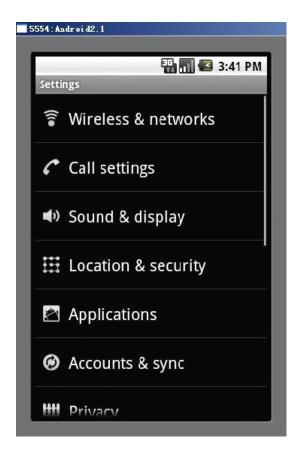
```
//下面俩种方法都可以
////LayoutInflater inflater = getLayoutInflater();
LayoutInflater inflater = (LayoutInflater)
mContext.getSystemService(LAYOUT_INFLATER_SERVICE);
View layout = inflater.inflate(R. layout.custom_dialog, null);
TextView text = (TextView) layout.findViewById(R. id. text);
text.setText("Hello, Welcome to Mr Wei's blog!");
ImageView image = (ImageView) layout.findViewById(R. id. image);
image.setImageResource(R. drawable.icon);
builder = new AlertDialog.Builder(mContext);
builder.setView(layout);
alertDialog = builder.create();
alertDialog.show();
}
}
5、最后执行之,点击Button,将得到上述效果。
```

# Android 中 MenuInflater 的使用(布局定义菜单)

大家好,我们上一节讲的是 Layout Inflater 的 使用,而这一节我将讲一下 MenuInflater,顾名思义,Layout Inflater 是用来解析定义在 layout 下的布局文件,那 么 MenuInflater 是不是用来解析定义在 menu 目录下的菜单布局文件呢? 恭喜你答对了! (\*^\_\_\*\*) 嘻嘻……

我们传统意义上的定义菜单感觉比较繁琐,当我们使用 MenuInflater 来生成菜单,你会发现是多么的爽朗,呵呵,我今天的小 Demo,是定义四个菜单,并且实现了一个菜单事件。就是我们点击设置(Setting)菜单,进入手机设置状态!下面看一下效果图:





### 下面是实现 Demo 的详细步骤:

- 一、建立一个 Android 工程我们命名为 MenuInflaterDemo .
- 二、在 res 目录下创建 menu 目录,并且创建 options\_menu.xml (我们定义的菜单)文件,

## 代码如下:

```
view plaincopy to clipboardprint?
```

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

### <menu

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

 $\verb| item and roid: id="@+id/menu_add"| \\$ 

```
android:title="Add"
                android:icon="@android:drawable/ic_menu_add"
      <item android:id="@+id/menu_wallaper"</pre>
                android:title="Wallpaper"
                android:icon="@android:drawable/ic_menu_gallery"
     <item android:id="@+id/menu_search"</pre>
                android:title="Search"
                android:icon="@android:drawable/ic_search_category_default"
     <item android:id="@+id/menu_setting"</pre>
                android:title="Settings"
                android:icon="@android:drawable/ic_menu_preferences"
</menu>
<?xml version="1.0" encoding="utf-8"?>
<menu
    xmlns:android="http://schemas.android.com/apk/res/android">
      <item android:id="@+id/menu_add"</pre>
                android:title="Add"
                android:icon="@android:drawable/ic_menu_add"
      <item android:id="@+id/menu_wallaper"</pre>
                android:title="Wallpaper"
                android:icon="@android:drawable/ic_menu_gallery"
     <item android:id="@+id/menu_search"</pre>
                android:title="Search"
```

```
android:icon="@android:drawable/ic_search_category_default"
     <item android:id="@+id/menu setting"</pre>
               android:title="Settings"
               android:icon="@android:drawable/ic_menu_preferences"
</menu>
三、主类 MenuInflaterDemo. java 的编码,这里写的代码很少哦,我这里只写了第四个菜
单(Settings)的响应事件.全部代码如下:
view plaincopy to clipboardprint?
package com. android. tutor;
import android.app.Activity;
import android.content.Intent;
import android.os.Bundle;
import android. view. Menu;
import android.view.MenuInflater;
import android.view.MenuItem;
public class MenuInflaterDemo extends Activity {
      @Override
      public void onCreate(Bundle savedInstanceState) {
             super.onCreate(savedInstanceState);
             setContentView(R.layout.main);
      @Override
      public boolean onCreateOptionsMenu(Menu menu) {
             MenuInflater inflater = getMenuInflater();
             inflater.inflate(R.menu.options_menu, menu);
```

```
return true;
      }
      @Override
      \verb"public boolean onOptionsItemSelected" (MenuItem item) \ \{
              switch (item.getItemId()) {
              case R.id.menu_add:
                    break;
              case R.id.menu_wallaper:
                    break;
              case R.id.menu_search:
                    break;
              case R.id.menu_setting:
                    showSettings();
                    break;
              }
              return super.onOptionsItemSelected(item);
      private void showSettings() {
                                  final
                                             Intent
                                                         settings
                                                                               new
Intent(android.provider.Settings.ACTION_SETTINGS);
                    settings.setFlags(Intent.FLAG_ACTIVITY_NEW_TASK |
                                   Intent.FLAG_ACTIVITY_RESET_TASK_IF_NEEDED);
```

```
startActivity(settings);
     }
}
package com. android. tutor;
import android.app.Activity;
import android.content.Intent;
import android.os.Bundle;
import android.view.Menu;
import android.view.MenuInflater;
import android.view.MenuItem;
public class MenuInflaterDemo extends Activity {
      @Override
      public void onCreate(Bundle savedInstanceState) {
              super. onCreate(savedInstanceState);
              setContentView(R.layout.main);
      @Override
      public boolean onCreateOptionsMenu(Menu menu) {
         MenuInflater inflater = getMenuInflater();
         inflater.inflate(R.menu.options_menu, menu);
         return true;
      @Override
      public boolean onOptionsItemSelected(MenuItem item) {
         switch (item.getItemId()) {
    case R.id.menu_add:
```

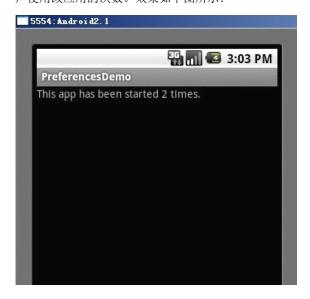
```
break;
   case R.id.menu_wallaper:
    break;
   case R.id.menu_search:
    break;
   case R.id.menu_setting:
    showSettings();
    break;
        return super.onOptionsItemSelected(item);
     private void showSettings() {
                               final
                                         Intent
                                                     settings
                                                                        new
Intent(android.provider.Settings.ACTION_SETTINGS);
              settings.setFlags(Intent.FLAG_ACTIVITY_NEW_TASK |
                           Intent.FLAG_ACTIVITY_RESET_TASK_IF_NEEDED);
        startActivity(settings);
    }
四、运行代码之,点击模拟器上的 menu 按钮将会出现上述效果图!
```

### Android 中 Preferences 的使用!

大家好,我们这一节讲的是Android Preferences 的学习,Preferences 在Android 当中被用来记录应用,以及用户喜好等等,它可以用来保存

简单的数据类型,如 Int, Double, Boolean 等。Preferences 中保存的数据可以理解为 Map 型。我们通过 PreferenceManager 以及 getDefaultSharedPreferences(Context)来获取它,比如当我们想获得整数我们可以用 getInt(String key, int defVal).获取里面的某个键值,当我们想修改时候我们用 putInt(String key, int newVal),最后用edit(),方法提交!千万不要忘记了哦~

为了让大家跟好的理解我做了一个简单的 Demo, 程序主要有个 TextView 控件,上面写着用户使用改应用的次数。效果如下图所示:



下面是实现 Demo 的大体步骤:

- 一、新建一个 Android 工程命名为: Preferences Demo。
- 二、在修改 main. xml 布局文件,这里只是在 TextView 控件里加了一个 id. 代码如下:

```
view plaincopy to clipboardprint?
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"</pre>
      android:orientation="vertical"
      android:layout_width="fill_parent"
      android:layout_height="fill_parent"
<TextView
      android:id="@+id/text"
      android:layout_width="fill_parent"
      android:layout_height="wrap_content"
      android:text="@string/hello"
      />
</LinearLayout>
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"</pre>
      android:orientation="vertical"
      android:layout_width="fill_parent"
      android:layout_height="fill_parent"
<TextView
      android:id="@+id/text"
      android:layout_width="fill_parent"
      android:layout_height="wrap_content"
      android:text="@string/hello"
      />
</LinearLayout>
```

三、修改 PreferenceDemo. java 的代码,全部代码如下:

```
view plaincopy to clipboardprint?
package com. android. tutor;
import android.app.Activity;
import android.content.SharedPreferences;
import android.os.Bundle;
import android.preference.PreferenceManager;
import android.widget.TextView;
public class PreferencesDemo extends Activity {
      /** Called when the activity is first created. */
      @Override
      public void onCreate(Bundle savedInstanceState) {
              super.onCreate(savedInstanceState);
              setContentView(R.layout.main);
              SharedPreferences mPerferences = PreferenceManager
              .getDefaultSharedPreferences(this);
              int counter = mPerferences.getInt("counter", 0);
              TextView mTextView = (TextView)findViewById(R.id.text);
              mTextView.setText("This app has been started" + counter + "
times.");
              SharedPreferences.Editor mEditor = mPerferences.edit();
              mEditor.putInt("counter", ++counter);
              mEditor.commit();
```

```
}
package com. android. tutor;
import android.app.Activity;
import android.content.SharedPreferences;
import android.os.Bundle;
import android.preference.PreferenceManager;
import android.widget.TextView;
public class PreferencesDemo extends Activity {
      /** Called when the activity is first created. */
      @Override
      public void onCreate(Bundle savedInstanceState) {
              super. onCreate(savedInstanceState);
              setContentView(R.layout.main);
              SharedPreferences mPerferences = PreferenceManager
              .getDefaultSharedPreferences(this);
              int counter = mPerferences.getInt("counter", 0);
              TextView mTextView = (TextView)findViewById(R.id.text);
              mTextView.setText("This app has been started" + counter + " times.");
              SharedPreferences.Editor mEditor = mPerferences.edit();
```

```
mEditor.putInt("counter", ++counter);
mEditor.commit();
}
```

四、运行代码,实现上述效果.

五、查看 Preferences 文件, 首先打开命令终端: adb shell 一下, 然后 cd data/data 进入该目录, ls 一下我们会发现一大堆包文件, 入下图所示:

```
C:\Documents and Settings\Administrator>adb shell

# cd data/data

# ls

ls

com.demo.android.dreamdict

com.android.calculator2

com.android.soundrecorder

com.android.soundrecorder

com.android.providers.drm

com.android.providers.userdictionary

com.android.slidingdrawer

com.android.gallery

com.android.providers.telephony

com.smit.gallery

com.android.opengl

com.android.alarmclock

com.android.launcher

com.android.phone
```

cd com. android. tutor(这里是我程序的包名)/shared\_prefs, ls 一下会发现. xml 文件如下图:

```
# cd com.android.tutor
cd com.android.tutor
# ls
ls
shared_prefs
lib
# cd shared_prefs
cd shared_prefs
# ls
ls
com.android.tutor_preferences.xml
# _
```

打开. xml 文件,格式如下(为什么这样大家自己去理解):

```
view plaincopy to clipboardprint?
<?xml version='1.0' encoding='utf-8' standalone='yes' ?>
<map>
<int name="counter" value="3" />
</map>
```

# Android Widget 开发案例(世界杯倒计时!)

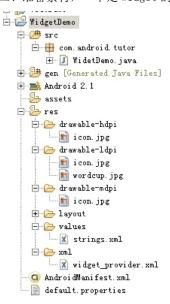
今天我们要写一下 Android Widget 的开发,由于快点凌晨,我就不说的太具体了,同志们就模仿吧! 首先看一下效果图:



下面是 Demo 的详细步骤:

一、新建一个 Android 工程命名为:WidgetDemo.

二、准备素材,一个是 Widget 的图标,一个是 Widget 的背景。存放目录如下图:



```
三、修改 string. xml 文件如下:
```

```
view plaincopy to clipboardprint?
<?xml version="1.0" encoding="utf-8"?>
<resources>
      <string name="hello">Hello World, WidetDemo!</string>
      <string name="app_name">DaysToWorldCup</string>
</resources>
<?xml version="1.0" encoding="utf-8"?>
<resources>
      <string name="hello">Hello World, WidetDemo!</string>
      <string name="app_name">DaysToWorldCup</string>
</resources>
```

四、建立 Widget 内容提供者文件, 我们在 res 下建立 xml 文件夹, 并且新建一个 widget\_provider.xml 代码入下:

```
view plaincopy to clipboardprint?
<?xml version="1.0" encoding="utf-8"?>
<appwidget-provider
xmlns:android="http://schemas.android.com/apk/res/android"
      android:minWidth="50dip"
      android:minHeight="50dip"
      android:updatePeriodMillis="10000"
      android:initialLayout="@layout/main"
/>
<?xml version="1.0" encoding="utf-8"?>
<appwidget-provider xmlns:android="http://schemas.android.com/apk/res/android"</pre>
android:minWidth="50dip"
android:minHeight="50dip"
android:updatePeriodMillis="10000"
android:initialLayout="@layout/main"
五、修改 main. xml 布局, 代码如下:
view plaincopy to clipboardprint?
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"</pre>
      android:orientation="vertical"
      android:layout_width="fill_parent"
      android:layout_height="fill_parent"
      android:background="@drawable/wordcup"
<TextView
      android:id="@+id/wordcup"
      android:layout_width="fill_parent"
      android:layout_height="wrap_content"
```

```
android:text="@string/hello"
      android:textSize="12px"
      android:textColor="#ff0000"
</LinearLayout>
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"</pre>
      android:orientation="vertical"
      android:layout_width="fill_parent"
      android:layout_height="fill_parent"
      android:background="@drawable/wordcup"
<TextView
android:id="@+id/wordcup"
      android:layout_width="fill_parent"
      android:layout_height="wrap_content"
      android:text="@string/hello"
    android:textSize="12px"
      android:textColor="#ff0000"
</LinearLayout>
六、修改 WidgetDemo. java 代码如下:
view plaincopy to clipboardprint?
package com. android. tutor;
import java.util.Calendar;
import java.util.Date;
import java.util.GregorianCalendar;
import java.util.Timer;
```

```
import java.util.TimerTask;
import android.appwidget.AppWidgetManager;
import android.appwidget.AppWidgetProvider;
import android.content.ComponentName;
import android.content.Context;
import android.widget.RemoteViews;
public class WidetDemo extends AppWidgetProvider {
      /** Called when the activity is first created. */
      @0verride
               public
                         void
                                onUpdate (Context
                                                    context,
                                                                AppWidgetManager
appWidgetManager,
                    int[] appWidgetIds) {
              Timer timer = new Timer();
              timer.scheduleAtFixedRate(new MyTime(context, appWidgetManager), 1,
60000);
              super.onUpdate(context, appWidgetManager, appWidgetIds);
      private class MyTime extends TimerTask{
              RemoteViews remoteViews;
              AppWidgetManager appWidgetManager;
              ComponentName thisWidget;
                             public
                                      MyTime(Context
                                                      context, AppWidgetManager
appWidgetManager) {
                    this.appWidgetManager = appWidgetManager;
```

```
remoteViews
                                                                             new
RemoteViews(context.getPackageName(), R. layout.main);
                                                         thisWidget
                                                                             new
ComponentName(context, WidetDemo.class);
              public void run() {
                    Date date = new Date();
                    Calendar calendar = new GregorianCalendar(2010, 06, 11);
(((calendar.\,getTimeInMillis()-date.\,getTime())/1000))/86400;
                    remoteViews.setTextViewText(R.id.wordcup, "距离南非世界杯还
有" + days+"天");
                                   appWidgetManager.updateAppWidget(thisWidget,
remoteViews);
package com. android. tutor;
import java.util.Calendar;
import java.util.Date;
import java.util.GregorianCalendar;
import java.util.Timer;
import java.util.TimerTask;
import android.appwidget.AppWidgetManager;
```

```
import android.appwidget.AppWidgetProvider;
import android.content.ComponentName;
import android.content.Context;
import android.widget.RemoteViews;
public class WidetDemo extends AppWidgetProvider {
      /** Called when the activity is first created. */
@Override
\verb"public void on Update" (Context context, AppWidgetManager appWidgetManager)" \\
     int[] appWidgetIds) {
    Timer timer = new Timer();
    timer.scheduleAtFixedRate(new MyTime(context,appWidgetManager), 1, 60000);
    super.onUpdate(context, appWidgetManager, appWidgetIds);
private class MyTime extends TimerTask{
    RemoteViews remoteViews;
    AppWidgetManager appWidgetManager;
    ComponentName thisWidget;
    public MyTime(Context context, AppWidgetManager appWidgetManager) {
     this.appWidgetManager = appWidgetManager;
     remoteViews = new RemoteViews(context.getPackageName(), R. layout.main);
     thisWidget = new ComponentName(context, WidetDemo.class);
    public void run() {
```

```
Date date = new Date();
     Calendar calendar = new GregorianCalendar (2010, 06, 11);
     long days = (((calendar.getTimeInMillis()-date.getTime())/1000))/86400;
     remoteViews.setTextViewText(R.id.wordcup, "距离南非世界杯还有" + days+"天");
     appWidgetManager.updateAppWidget(thisWidget, remoteViews);
七、修改配置文件 AndroidManifest. xml,代码如下:
view plaincopy to clipboardprint?
<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"</pre>
          package="com. android. tutor"
          android:versionCode="1"
          android:versionName="1.0">
                               <application</pre>
                                                   android:icon="@drawable/icon"
android:label="@string/app_name">
              <receiver android:name=".WidetDemo"</pre>
                              android:label="@string/app_name">
                    <intent-filter>
                                                                         <action
android:name="android.appwidget.action.APPWIDGET_UPDATE" />
                    </intent-filter>
                    <meta-data android:name="android.appwidget.provider"</pre>
```

android:resource="@xml/widget\_provider"

```
/>
              </receiver>
      \langle \text{/application} \rangle
      <uses-sdk android:minSdkVersion="7" />
</manifest>
<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"</pre>
          package="com. android. tutor"
          android:versionCode="1"
          android:versionName="1.0">
                               <application</pre>
                                                android:icon="@drawable/icon"
android:label="@string/app_name">
              <receiver android:name=".WidetDemo"</pre>
                              android:label="@string/app_name">
                    <intent-filter>
                                                                         <action
android:name="android.appwidget.action.APPWIDGET_UPDATE" />
                    </intent-filter>
                    <meta-data android:name="android.appwidget.provider"</pre>
                             android:resource="@xml/widget_provider"
              </receiver>
      </application>
      <uses-sdk android:minSdkVersion="7" />
</manifest>
八、点击运行(Ctrl+F11),之,运行成功后,我们长时间点击桌面,会出现如下俩个,依次
点击,就可以看到最上面的效果图:
```





### Android Handler 的使用

大家好我们这一节讲的是 Android Handler 的使用,在讲 Handler 之前,我们先提个小问题,就是如何让程序 5 秒钟更新一下 Title.

首先我们看一下习惯了 Java 编程的人,在不知道 Handler 的用法之前是怎么样写的程序,代码如下所示:

```
view plaincopy to clipboardprint?
package com.android.tutor;
import java.util.Timer;
import java.util.TimerTask;
import android.app.Activity;
import android.os.Bundle;
public class HandlerDemo extends Activity {
   //title 为 setTitle 方法提供变量,这里为了方便我设置成了 int 型
   private int title = 0;
   public void onCreate(Bundle savedInstanceState) {
     super.onCreate(savedInstanceState);
     setContentView(R.layout.main);
     Timer timer = new Timer();
     timer.scheduleAtFixedRate(new MyTask(), 1, 5000);
   }
   private class MyTask extends TimerTask{
      @Override
```

```
public void run() {
         setTitle("Welcome to Mr Wei's blog " + title);
         title ++;
      }
package com.android.tutor;
import java.util.Timer;
import java.util.TimerTask;
import android.app.Activity;
import android.os.Bundle;
public class HandlerDemo extends Activity {
//title 为 setTitle 方法提供变量,这里为了方便我设置成了 int 型
private int title = 0;
   public void onCreate(Bundle savedInstanceState) {
     super.onCreate(savedInstanceState);
     setContentView(R.layout.main);
     Timer timer = new Timer();
     timer.scheduleAtFixedRate(new MyTask(), 1, 5000);
   }
   private class MyTask extends TimerTask{
 @Override
 public void run() {
  setTitle("Welcome to Mr Wei's blog " + title);
```

```
title ++;
 }
   然而当我们执行程序,并不能达到我们预期的效果,所以 Android 引进了 Handler 这个
特殊的类,可以说它是 Runnable 和 Activity 交互的桥梁
,所以我们只要在 run 方法中发送 Message,而在 Handler 里,通过不同的 Message 执行不同
的任务。
所以我们修改后的代码如下:
view plaincopy to clipboardprint?
package com.android.tutor;
import java.util.Timer;
import java.util.TimerTask;
import android.app.Activity;
import android.os.Bundle;
import android.os.Handler;
import android.os.Message;
public class HandlerDemo extends Activity {
  //title 为 setTitle 方法提供变量,这里为了方便我设置成了 int 型
  private int title = 0;
  private Handler mHandler = new Handler() {
    public void handleMessage(Message msg) {
       switch (msg.what) {
       case 1:
          updateTitle();
          break;
```

```
};
   };
   public void onCreate(Bundle savedInstanceState) {
     super.onCreate(savedInstanceState);
     setContentView(R.layout.main);
     Timer timer = new Timer();
     timer.scheduleAtFixedRate(new MyTask(), 1, 5000);
   }
   private class MyTask extends TimerTask{
      @Override
     public void run() {
         Message message = new Message();
         message.what = 1;
         mHandler.sendMessage(message);
      }
   }
   public void updateTitle(){
     setTitle("Welcome to Mr Wei's blog " + title);
     title ++;
package com.android.tutor;
import java.util.Timer;
```

```
import java.util.TimerTask;
import android.app.Activity;
import android.os.Bundle;
import android.os.Handler;
import android.os.Message;
public class HandlerDemo extends Activity {
//title 为 setTitle 方法提供变量,这里为了方便我设置成了 int 型
private int title = 0;
private Handler mHandler = new Handler() {
 public void handleMessage(Message msg) {
  switch (msg.what) {
  case 1:
   updateTitle();
   break;
  }
 };
};
   public void onCreate(Bundle savedInstanceState) {
      super.onCreate (savedInstanceState);\\
     setContentView(R.layout.main);
     Timer timer = new Timer();
     timer.scheduleAtFixedRate(new MyTask(), 1, 5000);
   }
   private class MyTask extends TimerTask{
 @Override
```

```
public void run() {
    Message message = new Message();
    message.what = 1;
    mHandler.sendMessage(message);
}

public void updateTitle(){
    setTitle("Welcome to Mr Wei's blog " + title);
    title ++;
    }
}
```

下面我们看一下效果图:





## Android PopupWindow 的使用

大家好,我们这一节讲的是 Android PopupWindow 的使用! 在我理解其实 PopupWindow 其实类似于一个不能动的 Widget (仅从显示效果来说!)

它是浮在别的窗口之上的.

下面我将给大家做一个简单的 Demo,类似于音乐播放器的 Widget 的效果,点击 Button 的时候出来 PopupWindow, 首先我们看一下效果图:





### 下面是核心代码:

view plaincopy to clipboardprint?

package com. android. tutor;

import android. app. Activity;

import android. content. Context;

import android. os. Bundle;

import android. view. Gravity;

import android. view. LayoutInflater;

import android. view. View;

import android.view.View.OnClickListener;

 $import\ and roid.\ view.\ View Group.\ Layout Params;$ 

import android.widget.Button;

```
import android.widget.PopupWindow;
public class PopupWindowDemo extends Activity
                                                implements OnClickListener{
      private Button btn;
      public void onCreate(Bundle savedInstanceState) {
              super.onCreate(savedInstanceState);
              setContentView(R.layout.main);
              btn = (Button)findViewById(R.id.btn);
              btn.setOnClickListener(this);
      @Override
      public void onClick(View v) {
              Context mContext = PopupWindowDemo.this;
              if (v.getId() == R.id.btn) {
                            LayoutInflater mLayoutInflater = (LayoutInflater)
mContext
                                  .getSystemService(LAYOUT_INFLATER_SERVICE);
                    View music_popunwindwow = mLayoutInflater.inflate(
                                  R.layout.music_popwindow, null);
                    PopupWindow mPopupWindow = new PopupWindow (music_popunwindwow,
LayoutParams. FILL_PARENT,
                                  LayoutParams.WRAP_CONTENT);
                           mPopupWindow.showAtLocation(findViewById(R.id.main),
Gravity.RIGHT | Gravity.BOTTOM, 0, 0);
```

```
}
package com. android. tutor;
import android. app. Activity;
import android.content.Context;
import android.os.Bundle;
import android.view.Gravity;
import android.view.LayoutInflater;
import android.view.View;
import android.view.View.OnClickListener;
import android.view.ViewGroup.LayoutParams;
import android.widget.Button;
import android.widget.PopupWindow;
public class PopupWindowDemo extends Activity
                                               implements OnClickListener{
private Button btn;
      public void onCreate(Bundle savedInstanceState) {
              super. onCreate(savedInstanceState);
              setContentView(R. layout.main);
              btn = (Button)findViewById(R.id.btn);
              btn.setOnClickListener(this);
@Override
public void onClick(View v) {
    Context mContext = PopupWindowDemo.this;
    if (v.getId() == R.id.btn) {
     LayoutInflater mLayoutInflater = (LayoutInflater) mContext
         .getSystemService(LAYOUT_INFLATER_SERVICE);
```

需要强调的是这里 PopupWindow 必须有某个事件触发才会显示出来,不然总会抱错,不信大家可以试试!

随着这个问题的出现,就会同学问了,那么我想初始化让 PopupWindow 显示出来,那怎么办了,不去寄托于其他点击事件,

在这里我用了定时器 Timer 来实现这样的效果, 当然这里就要用到 Handler 了, 如果大家不理解的可以返回

### Android Handler 的使用

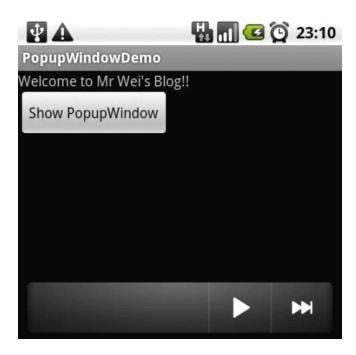
```
看一看,加深了解:
下面是核心代码:
view plaincopy to clipboardprint?
package com. android. tutor;
import java.util.Timer;
import java.util.TimerTask;
import android.app.Activity;
import android.content.Context;
import android.os.Bundle;
import android.os.Handler;
import android.os.Message;
import android.view.Gravity;
import android.view.LayoutInflater;
import android.view.View;
import android.view.ViewGroup.LayoutParams;
import android.widget.PopupWindow;
public class PopupWindowDemo extends Activity{
      private Handler mHandler = new Handler() {
             public void handleMessage(Message msg) {
                    switch (msg.what) {
                    case 1:
                          showPopupWindow();
                          break;
                   }
             };
```

```
};
public void onCreate(Bundle savedInstanceState) {
        super. onCreate(savedInstanceState);
        setContentView(R.layout.main);
        //create the timer
        Timer timer = new Timer();
        timer.schedule(new initPopupWindow(), 100);
private \ class \ initPopupWindow \ extends \ TimerTask \{
        @Override
        public void run() {
              Message message = new Message();
              message.what = 1;
              mHandler.sendMessage(message);
        }
public void showPopupWindow() {
        Context mContext = PopupWindowDemo.this;
        LayoutInflater mLayoutInflater = (LayoutInflater) mContext
                    .getSystemService(LAYOUT_INFLATER_SERVICE);
        View music_popunwindwow = mLayoutInflater.inflate(
                    R.layout.music_popwindow, null);
```

PopupWindow mPopupWindow = new PopupWindow (music\_popunwindwow,

```
LayoutParams. FILL_PARENT,
LayoutParams.WRAP_CONTENT);
                            mPopupWindow.showAtLocation(findViewById(R.id.main),
Gravity.CENTER, 0, 0);
package com. android. tutor;
import java.util.Timer;
import java.util.TimerTask;
import android.app.Activity;
import android.content.Context;
import android.os.Bundle;
import android.os. Handler;
import android.os. Message;
import android.view.Gravity;
import android.view.LayoutInflater;
import android. view. View;
import android.view.ViewGroup.LayoutParams;
import android.widget.PopupWindow;
public class PopupWindowDemo extends Activity{
private Handler mHandler = new Handler() {
    public void handleMessage(Message msg) {
     switch (msg.what) {
     case 1:
      showPopupWindow();
      break;
```

```
}
    };
};
      public void onCreate(Bundle savedInstanceState) {
              super.onCreate(savedInstanceState);
              setContentView(R.layout.main);
              //create the timer
              Timer timer = new Timer();
              timer.schedule(new initPopupWindow(), 100);
      }
      private class initPopupWindow extends TimerTask{
    @Override
    public void run() {
     Message message = new Message();
     message.what = 1;
     mHandler.sendMessage(message);
    }
public void showPopupWindow() {
    Context mContext = PopupWindowDemo.this;
    LayoutInflater mLayoutInflater = (LayoutInflater) mContext
      .getSystemService(LAYOUT_INFLATER_SERVICE);
```



## Android 通用获取 Ip 的方法(判断手机是否联网的方法)

enumIpAddr.hasMoreElements();) {

大家好,我们这一节讲一下,Android 获取 Ip 的一些方法,在我们开发中,有判断手机是 否联网,或者想获得当前手机的 Ip 地址,当然 WIFI 连接的和我们 3G 卡的 Ip 地址当然是不 一样的. 首先我尝试了如下方法: view plaincopy to clipboardprint? WifiManager wifiManager = (WifiManager) getSystemService(WIFI SERVICE); WifiInfo wifiInfo = wifiManager.getConnectionInfo(); int ipAddress = wifiInfo.getIpAddress(); WifiManager wifiManager = (WifiManager) getSystemService(WIFI SERVICE); WifiInfo wifiInfo = wifiManager.getConnectionInfo(); int ipAddress = wifiInfo.getIpAddress(); 但是获得的居然是一个整数,我尝试了用些数学方法都没有成功!,所以这种方法不可取! 最后查了一些资料,发现如下方法是比较通用的,我尝试了 WIFI 和 G3 卡,都获取了争取 的 Ip 地址:代码如下: view plaincopy to clipboardprint? public String getLocalIpAddress() { try { for (Enumeration<NetworkInterface> en = NetworkInterface.getNetworkInterfaces(); en.hasMoreElements();) { NetworkInterface intf = en.nextElement();

for (Enumeration<InetAddress> enumIpAddr = intf.getInetAddresses();

```
InetAddress inetAddress = enumIpAddr.nextElement();
             if (!inetAddress.isLoopbackAddress()) {
                return inetAddress.getHostAddress().toString();
   } catch (SocketException ex) {
      Log.e(LOG_TAG, ex.toString());
   }
   return null;
}
public String getLocalIpAddress() {
   try {
           for (Enumeration<NetworkInterface> en = NetworkInterface.getNetworkInterfaces();
en.hasMoreElements();) {
         NetworkInterface intf = en.nextElement();
                      for \quad (Enumeration < InetAddress > \quad enumIpAddr \quad = \quad intf. getInetAddresses();
enumIpAddr.hasMoreElements();) {
             InetAddress inetAddress = enumIpAddr.nextElement();
             if (!inetAddress.isLoopbackAddress()) {
                return inetAddress.getHostAddress().toString();
          }
   } catch (SocketException ex) {
      Log.e(LOG_TAG, ex.toString());
   }
   return null;
```

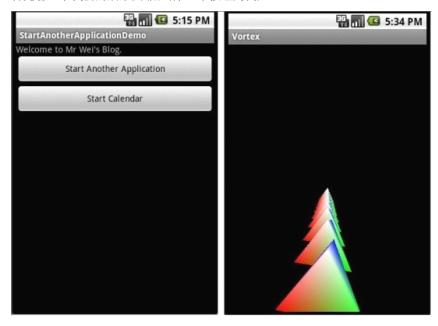
当我的手机处于飞行状态是, 获得 Ip 地址为空, 刚好符合要求!!!

## Android 在一个应用中如何启动另外一个已安装的应用

今天晚上 Jimmy 问了我一个问题,就是如何在一个应用中 通过某个事件,而去启动 另外一个已安装的应用。所以愿意和大家分享一下!

而为了能让大家更加容易的理解,我写了一个简单的 Demo,我们的程序有俩个按钮,其中一个点击会启动我自己写的应用(一个 3D 应用为例),而另外一个按钮会启动系统自带的应用(如,日历,闹钟,计算器等等). 这里我一日历为例子!

首先看一下我们的效果图(点击第一个按钮为例):



## 下面是 Demo 的详细步骤:

- 一、新建一个 Android 工程命名为 StartAnotherApplicationDemo.
- 二、修改 main. xml 布局, 代码如下:

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

```
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"</pre>
      android:orientation="vertical"
      android:layout_width="fill_parent"
      android:layout_height="fill_parent"
<TextView
      android:layout_width="fill_parent"
      android:layout_height="wrap_content"
      android:text="Welcome to Mr Wei's Blog."
      />
<Button
      android:id="@+id/button"
      android:layout_width="fill_parent"
      android:layout_height="wrap_content"
      android:text="Start Another Application"
/>
\leq Button
      android:id="@+id/start_calender"
      android:layout_width="fill_parent"
      android:layout_height="wrap_content"
      android:text="Start Calendar"
/>
</LinearLayout>
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"</pre>
      android:orientation="vertical"
      android:layout_width="fill_parent"
      android:layout_height="fill_parent"
```

```
<TextView
      android:layout_width="fill_parent"
      android:layout_height="wrap_content"
      android:text="Welcome to Mr Wei's Blog."
      />
<Button
android:id="@+id/button"
android:layout_width="fill_parent"
android:layout_height="wrap_content"
android:text="Start Another Application"
/>
<Button
android:id="@+id/start_calender"
android:layout_width="fill_parent"
android:layout_height="wrap_content"
android:text="Start Calendar"
/>
</LinearLayout>
三、修改主程序 StartAnotherApplicationDemo. java 代码如下:
view plaincopy to clipboardprint?
package com. android. tutor;
import android. app. Activity;
import android.content.ComponentName;
import android.content.Intent;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
public \ class \ StartAnotherApplicationDemo \ extends \ Activity \ \{
```

```
private Button mButton01, mButton02;
      public void onCreate(Bundle savedInstanceState) {
             super. onCreate(savedInstanceState);
             setContentView(R.layout.main);
             mButton01 = (Button) findViewById(R.id. button);
             mButton02 = (Button)findViewById(R.id.start_calender);
             //-----启动我们自身写的程序------
             mButtonO1. setOnClickListener(new Button.OnClickListener() {
                   public void onClick(View v) {
                         //----核心部分----- 前名一个参数是应用程序的包名,后
一个是这个应用程序的主 Activity 名
                         Intent intent=new Intent();
                                                      \verb|intent.setComponent| (\verb|new|
ComponentName ("com. droidnova. android. games. vortex",
          "com. droidnova. android. games. vortex.. Vortex"));
                         startActivity(intent);
                   }
             });
         //-----启动系统自带的应用程序--------
             mButtonO2.setOnClickListener(new Button.OnClickListener() {
                   public void onClick(View v) {
                         Intent intent=new Intent();
                                                      intent.setComponent(new
ComponentName ("com. android. calendar",
```

```
"com. android. calendar. LaunchActivity"));
                        startActivity(intent);
             });
package com. android. tutor;
import android.app.Activity;
import android.content.ComponentName;
import android.content.Intent;
import android.os. Bundle;
import android.view.View;
import android.widget.Button;
public class StartAnotherApplicationDemo extends Activity {
private Button mButton01, mButton02;
     public void onCreate(Bundle savedInstanceState) {
             super. onCreate(savedInstanceState);
             setContentView(R.layout.main);
             mButton01 = (Button)findViewById(R.id.button);
             mButton02 = (Button)findViewById(R.id.start_calender);
             //----启动我们自身写的程序-----
             mButtonO1.setOnClickListener(new Button.OnClickListener() {
    public void onClick(View v) {
     //----核心部分----- 前名一个参数是应用程序的包名, 后一个是这个应用程序的
主 Activity 名
```

```
Intent intent=new Intent();
                                                      intent.setComponent(new
ComponentName ("com. droidnova. android. games. vortex",
                                                         "com. droidnova. andro
id.games.vortex..Vortex"));
     startActivity(intent);
             });
         //-----启动系统自带的应用程序-------
             mButton02.setOnClickListener(new Button.OnClickListener() {
    public void onClick(View v) {
     Intent intent=new Intent();
               intent.setComponent(new ComponentName("com.android.calendar",
"com. android. calendar. LaunchActivity"));
     startActivity(intent);
             });
四、执行之,将得到如上效果!
```

## Android 数据库 SQLiteDatabase 的使用

大家好,好久没有更新博客了,最近由于身体不适让大家久等了,好了,直接进入主题 $^{\sim}$ 

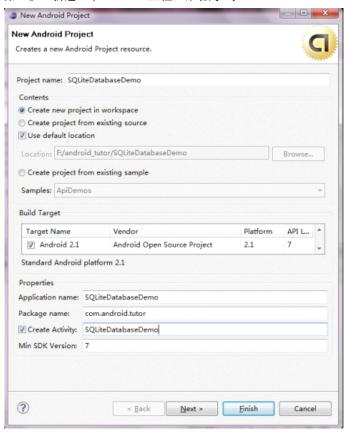
Android 提供了三种数据存储方式,第一种是文件存储;第二种是 SharedPreferences 存储; 第三种就是数据库 SQLiteDatabase 存储。

文件存储我就不用多说了,而 SharedPreferences 可以存取简单的数据 (int, double, float. etc),它经常用于数据缓存,因为它读取存储简单。详细可以参见本系 列。Android 高手进阶教程(七)之----Android 中 Preferences 的使用!

今天我们将讲一下 SQLiteDatabase 的使用。 而掌握 SqliteDatabase ,将会我们接下来掌握 ContentProvider 打下良好的基石。

为了让大家更好的掌握,我们手把手完成该节的 Demo。

第一步:新建一个Android 工程,命名为SQLiteDatabaseDemo.



第二步: 创建一个新的类 BooksDB. java 这个类要继承于

android. database. sqlite. SQLiteOpenHelper 抽象类,我们要实现其中两个方法:

onCreate(), onUpdate. 具体代码如下:

view plaincopy to clipboardprint?

package com. android. tutor;

import android.content.ContentValues;

import android.content.Context;

import android. database. Cursor;

 $import\ and roid.\ database.\ sqlite.\ SQLiteDatabase;$ 

```
import android.database.sqlite.SQLiteOpenHelper;
public class BooksDB extends SQLiteOpenHelper {
          private final static String DATABASE_NAME = "BOOKS.db";
          private final static int DATABASE_VERSION = 1;
          private final static String TABLE_NAME = "books_table";
          public final static String BOOK_ID = "book_id";
          public final static String BOOK_NAME = "book_name";
          public final static String BOOK_AUTHOR = "book_author";
          public BooksDB(Context context) {
              // TODO Auto-generated constructor stub
                super(context, DATABASE_NAME, null, DATABASE_VERSION);
      //创建 table
      @Override
      public void onCreate(SQLiteDatabase db) {
                String sql = "CREATE TABLE" + TABLE_NAME + " (" + BOOK_ID
                    + " INTEGER primary key autoincrement, " + BOOK_NAME + " text,
      BOOK_AUTHOR +" text);";
                db. execSQL(sql);
      @Override
      public void onUpgrade(SQLiteDatabase db, int oldVersion, int newVersion)
              String sql = "DROP TABLE IF EXISTS " + TABLE_NAME;
              db. execSQL(sq1);
              onCreate(db);
```

```
public Cursor select() {
             SQLiteDatabase db = this.getReadableDatabase();
             Cursor cursor = db
                          .query(TABLE_NAME, null, null, null, null, null,
null);
             return cursor;
      //增加操作
        public long insert(String bookname, String author)
             SQLiteDatabase db = this.getWritableDatabase();
             /* ContentValues */
             ContentValues cv = new ContentValues();
             cv.put(BOOK_NAME, bookname);
             cv.put(BOOK_AUTHOR, author);
             long row = db.insert(TABLE_NAME, null, cv);
             return row;
          }
         //删除操作
          public void delete(int id)
             SQLiteDatabase db = this.getWritableDatabase();
             String where = BOOK_ID + " = ?";
             String[] whereValue ={ Integer.toString(id) };
             db.delete(TABLE_NAME, where, whereValue);
          }
         //修改操作
          public void update(int id, String bookname, String author)
```

{

```
SQLiteDatabase db = this.getWritableDatabase();
              String where = BOOK_ID + " = ?";
              String[] whereValue = { Integer. toString(id) };
              ContentValues cv = new ContentValues();
              cv.put(BOOK_NAME, bookname);
              cv.put(BOOK_AUTHOR, author);
              db.update(TABLE_NAME, cv, where, whereValue);
          }
package com. android. tutor;
import android.content.ContentValues;
import android.content.Context;
import android.database.Cursor;
import android.database.sqlite.SQLiteDatabase;
import android.database.sqlite.SQLiteOpenHelper;
public class BooksDB extends SQLiteOpenHelper {
     private final static String DATABASE_NAME = "BOOKS.db";
     private final static int DATABASE_VERSION = 1;
     private final static String TABLE_NAME = "books_table";
     public final static String BOOK_ID = "book_id";
     public final static String BOOK_NAME = "book_name";
     public final static String BOOK_AUTHOR = "book_author";
     public BooksDB(Context context) {
    // TODO Auto-generated constructor stub
      super(context, DATABASE_NAME, null, DATABASE_VERSION);
}
//创建 table
```

```
@Override
public void onCreate(SQLiteDatabase db) {
      String sql = "CREATE TABLE" + TABLE_NAME + " (" + BOOK_ID
               + " INTEGER primary key autoincrement, " + BOOK_NAME + " text,
      BOOK_AUTHOR +" text);";
           db. execSQL(sql);
@Override
public void onUpgrade(SQLiteDatabase db, int oldVersion, int newVersion) {
    String sql = "DROP TABLE IF EXISTS " + TABLE_NAME;
    db. execSQL(sq1);
    onCreate(db);
}
public Cursor select() {
    SQLiteDatabase db = this.getReadableDatabase();
    Cursor cursor = db
      .query(TABLE_NAME, null, null, null, null, null, null);
    return cursor;
}
//增加操作
    public long insert(String bookname, String author)
     {
        SQLiteDatabase db = this.getWritableDatabase();
         /* ContentValues */
         ContentValues cv = new ContentValues();
         cv.put(BOOK_NAME, bookname);
         cv.put(BOOK_AUTHOR, author);
```

long row = db.insert(TABLE\_NAME, null, cv);

```
return row;
    }
   //删除操作
    public void delete(int id)
        SQLiteDatabase db = this.getWritableDatabase();
        String where = BOOK_ID + " = ?";
        String[] whereValue ={ Integer.toString(id) };
        db.delete(TABLE_NAME, where, whereValue);
    //修改操作
    public void update(int id, String bookname, String author)
        SQLiteDatabase db = this.getWritableDatabase();
        String where = BOOK_ID + " = ?";
        String[] whereValue = { Integer.toString(id) };
        ContentValues cv = new ContentValues();
         cv.put(BOOK_NAME, bookname);
         cv.put(BOOK_AUTHOR, author);
         db.update(TABLE_NAME, cv, where, whereValue);
第三步:修改 main. xml 布局如下,由两个 EditText 和一个 ListView 组成,代码如下:
view plaincopy to clipboardprint?
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"</pre>
```

```
android:orientation="vertical"
    android:layout_width="fill_parent"
    android:layout_height="fill_parent"
          <EditText
          android:id="@+id/bookname"
          android:layout_width="fill_parent"
          android:layout_height="wrap_content"
          \langle / EditText \rangle
          <EditText
          android:id="@+id/author"
          android:layout_width="fill_parent"
          android:layout_height="wrap_content"
          </EditText>
          \langle ListView \rangle
          android:id="@+id/bookslist"
          android:layout_width="fill_parent"
          android:layout_height="wrap_content"
          </ListView>
</LinearLayout>
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"</pre>
    android:orientation="vertical"
    android:layout_width="fill_parent"
    and roid: layout\_height="fill\_parent"
```

```
<EditText
     android:id="@+id/bookname"
     android:layout_width="fill_parent"
     android:layout_height="wrap_content"
     </EditText>
     <EditText
     android:id="@+id/author"
     android:layout_width="fill_parent"
     android:layout_height="wrap_content"
     </EditText>
     \langle ListView \rangle
     android:id="@+id/bookslist"
     android:layout_width="fill_parent"
     android:layout_height="wrap_content"
     >
     </ListView>
</LinearLayout>
第四步:修改 SQLiteDatabaseDemo. java 代码如下:
view plaincopy to clipboardprint?
package com. android. tutor;
import android. app. Activity;
import android.content.Context;
import android.database.Cursor;
import android.os.Bundle;
import android. view. Menu;
import android.view.MenuItem;
```

```
import android.view.View;
import android.view.ViewGroup;
import android.widget.AdapterView;
import android.widget.BaseAdapter;
import android.widget.EditText;
import android.widget.ListView;
import android.widget.TextView;
import android.widget.Toast;
public class SQLiteDatabaseDemo extends Activity implements
AdapterView.OnItemClickListener {
      private BooksDB
                         mBooksDB;
      private Cursor
                         mCursor;
      private EditText BookName;
      private EditText BookAuthor;
      private ListView BooksList;
      private int BOOK_ID = 0;
      protected final static int MENU_ADD = Menu.FIRST;
      protected final static int MENU_DELETE = Menu.FIRST + 1;
      protected final static int MENU_UPDATE = Menu.FIRST + 2;
      public void onCreate(Bundle savedInstanceState) {
              super. onCreate(savedInstanceState);
              setContentView(R. layout.main);
              setUpViews();
      public void setUpViews() {
              mBooksDB = new BooksDB(this);
```

```
mCursor
                   = mBooksDB.select();
       BookName = (EditText)findViewById(R.id.bookname);
       BookAuthor = (EditText)findViewById(R.id.author);
       BooksList = (ListView)findViewById(R.id.bookslist);
       BooksList.setAdapter(new BooksListAdapter(this, mCursor));
       BooksList.setOnItemClickListener(this);
@Override
public boolean onCreateOptionsMenu(Menu menu) {
       super.onCreateOptionsMenu(menu);
       menu. add(Menu. NONE, MENU_ADD, 0, "ADD");
       menu.add(Menu.NONE, MENU_DELETE, 0, "DELETE");
       menu.add(Menu.NONE, MENU_DELETE, 0, "UPDATE");
       return true;
public boolean onOptionsItemSelected(MenuItem item)
{
    super.onOptionsItemSelected(item);
    switch (item.getItemId())
       case MENU_ADD:
              add();
              break;
       case MENU_DELETE:
```

```
delete();
                                                                                                                                                       break;
                                                                                                         case MENU_UPDATE:
                                                                                                                                                       update();
                                                                                                                                                       break;
                                                                           return true;
                                              public void add() {
                                                                                                         String bookname = BookName.getText().toString();
                                                                                                         String author = BookAuthor.getText().toString();
                                                                                                         //书名和作者都不能为空,或者退出
                                                                                                         if (bookname.equals("") \mid \mid author.equals("")){
                                                                                                                                                        return;
                                                                                                                 mBooksDB.insert(bookname, author);
                                                                                                                 mCursor.requery();
                                                                                                                 BooksList.invalidateViews();
                                                                                                                 BookName.setText("");
                                                                                                                 BookAuthor.setText("");
                                                                                                                 Toast.makeText(this, "Add Successed!",
Toast.LENGTH_SHORT).show();
                                              public void delete() {
                                                                                                          \hspace{0.1cm} 
                                                                                                                                                       return;
                                                                                                         }
```

```
mBooksDB.delete(BOOK_ID);
             mCursor.requery();
             BooksList.invalidateViews();
             BookName.setText("");
             BookAuthor.setText("");
             Toast.makeText(this, "Delete Successed!",
Toast.LENGTH_SHORT).show();
      public void update() {
             String bookname = BookName.getText().toString();
             String author = BookAuthor.getText().toString();
             //书名和作者都不能为空,或者退出
              if (bookname.equals("") || author.equals("")) {
                    return;
             mBooksDB.update(BOOK_ID, bookname, author);
             mCursor.requery();
             BooksList.invalidateViews();
             BookName.setText("");
             BookAuthor.setText("");
             Toast.makeText(this, "Update Successed!",
Toast.LENGTH_SHORT).show();
      @Override
      public void onItemClick(AdapterView<?> parent, View view, int position, long
id) {
```

```
mCursor.moveToPosition(position);
       BOOK_ID = mCursor.getInt(0);
       BookName.setText(mCursor.getString(1));
       BookAuthor.setText(mCursor.getString(2));
}
public class BooksListAdapter extends BaseAdapter{
       private Context mContext;
       private Cursor mCursor;
       public BooksListAdapter(Context context, Cursor cursor) {
              mContext = context;
              mCursor = cursor;
       @Override
       public int getCount() {
              return mCursor.getCount();
       @Override
       public Object getItem(int position) {
              return null;
       @Override
       public long getItemId(int position) {
              return 0;
       @0 verride
       public View getView(int position, View convertView, ViewGroup parent)
```

```
TextView mTextView = new TextView(mContext);
                    mCursor.moveToPosition(position);
                    mTextView.setText(mCursor.getString(1) + "___" +
mCursor.getString(2));
                    return mTextView;
package com. android. tutor;
import android.app.Activity;
import android.content.Context;
import android.database.Cursor;
import android.os. Bundle;
import android.view.Menu;
import android.view.MenuItem;
import android.view.View;
import android. view. ViewGroup;
import android.widget.AdapterView;
import android.widget.BaseAdapter;
import android.widget.EditText;
import android.widget.ListView;
import android.widget.TextView;
import android.widget.Toast;
public class SQLiteDatabaseDemo extends Activity implements
AdapterView.OnItemClickListener {
private BooksDB
                   mBooksDB;
private Cursor
                   mCursor;
```

```
private EditText BookName;
private EditText BookAuthor;
private ListView BooksList;
private int BOOK_ID = 0;
protected final static int MENU_ADD = Menu.FIRST;
protected final static int MENU_DELETE = Menu.FIRST + 1;
protected final static int MENU_UPDATE = Menu.FIRST + 2;
      public void onCreate(Bundle savedInstanceState) {
              super. onCreate(savedInstanceState);
              setContentView(R.layout.main);
              setUpViews();
      public void setUpViews() {
         mBooksDB = new BooksDB(this);
                    = mBooksDB.select();
         mCursor
         BookName = (EditText)findViewById(R.id.bookname);
         BookAuthor = (EditText)findViewById(R.id.author);
         BooksList = (ListView)findViewById(R.id.bookslist);
         BooksList.setAdapter(new BooksListAdapter(this, mCursor));
         BooksList.setOnItemClickListener(this);
      @Override
      public boolean onCreateOptionsMenu(Menu menu) {
```

```
super.onCreateOptionsMenu(menu);
          menu.add(Menu.NONE, MENU_ADD, 0, "ADD");
          menu. add(Menu. NONE, MENU_DELETE, 0, "DELETE");
          menu. add (Menu. NONE, MENU_DELETE, 0, "UPDATE");
          return true;
  public boolean onOptionsItemSelected(MenuItem item)
      super.onOptionsItemSelected(item);
      switch (item.getItemId())
      {
case MENU_ADD:
 add();
 break;
case MENU_DELETE:
 delete();
 break;
case MENU_UPDATE:
 update();
 break;
      return true;
  public void add() {
```

String bookname = BookName.getText().toString();

String author

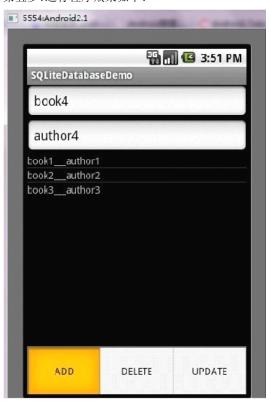
= BookAuthor.getText().toString();

```
//书名和作者都不能为空,或者退出
     if (bookname.equals("") | | author.equals("")) {
      return;
      mBooksDB.insert(bookname, author);
      mCursor.requery();
      BooksList.invalidateViews();
      BookName.setText("");
      BookAuthor.setText("");
      Toast.makeText(this, "Add Successed!", Toast.LENGTH_SHORT).show();
  }
  public void delete() {
if (BOOK_ID == 0) {
return;
mBooksDB.delete(BOOK_ID);
mCursor.requery();
BooksList.invalidateViews();
BookName.setText("");
BookAuthor.setText("");
Toast.makeText(this, "Delete Successed!", Toast.LENGTH_SHORT).show();
  public void update() {
    String bookname = BookName.getText().toString();
    String author
                     = BookAuthor.getText().toString();
    //书名和作者都不能为空,或者退出
     if (bookname.equals("") \mid \mid author.equals("")){
```

```
return;
         }
         mBooksDB.update(BOOK_ID, bookname, author);
         mCursor.requery();
    BooksList.invalidateViews();
    BookName.setText("");
    BookAuthor.setText("");
    Toast.makeText(this, "Update Successed!", Toast.LENGTH_SHORT).show();
@Override
public void onItemClick(AdapterView<?> parent, View view, int position, long id)
    {\tt mCursor.\,moveToPosition(position);}
    BOOK_ID = mCursor.getInt(0);
    BookName.setText(mCursor.getString(1));
    BookAuthor.setText(mCursor.getString(2));
}
      public class BooksListAdapter extends BaseAdapter{
         private Context mContext;
         private Cursor mCursor;
         public BooksListAdapter(Context context, Cursor cursor) {
          mContext = context;
          mCursor = cursor;
    }
```

```
@Override
public int getCount() {
    return mCursor.getCount();
}
@Override
public Object getItem(int position) {
    return null;
}
@Override
public long getItemId(int position) {
    return 0;
}
@Override
public View getView(int position, View convertView, ViewGroup parent) {
    TextView mTextView = new TextView(mContext);
    mCursor.moveToPosition(position);
    mTextView.setText(mCursor.getString(1) + "___" + mCursor.getString(2));
    return mTextView;
}
```

# 第五步:运行程序效果如下:













第六步: 查看我们所建的数据库。有两种方法: 第一种用命令查看: adb shell ls data/data/com. android. tutor/databases。

另一种方法是用 DDMS 查看,在 data/data 下面对应的应用程序的包名 下会有如下数据库,如图所示:

Threads 🗑 Heap 🔾 File Explorer 🖾						M	Ð
Name	Size	Date	Time	Permissi	Info		
> 🇀 com.android providers subscribedfeeds		2010-05	13:48	drwxr-xr-x			
> 👝 com.android providers.telephony		2010-05	13:49	drwxr-xr-x			
> 👝 com.android.providers.userdictionary		2010-05	13:48	drwxr-xr-x			
> 🗁 com.android.sdksetup		2010-05	13:48	drwxr-xr-x			
> 🗁 com.android.server.vpn		2010-05	13:48	drwxr-xr-x			
> 🗁 com.android settings		2010-05	13:48	drwxr-xr-x			
> 🗁 com.android.soundrecorder		2010-05	13:48	drwxr-xr-x			
> 🗁 com.android.spare_parts		2010-05	13:48	drwxr-xr-x			
> 🗁 com.android term		2010-05	13:48	drwxr-xr-x			
		2010-06	15:35	drwxr-xr-x			
		2010-06	15:59	drwxrwxx			
BCCKS.db	5120	2010-06	15:59	-rw-rw			
⇒ 🧽 lib		2010-06	15:34	drwxr-xr-x			
> 🗁 com.andro.d.wal paper.livepicker		2010-05	13:48	drwxr-xr-x			
> 🕞 com.google.android.providers.enhanced		2010-06	15:36	drwxr-xr-x			
> 💪 com.svox.pico		2010-05	13:48	drwxr-xr-x			
> 🗁 jp.co.omronsoft.openwnn		2010-05	13:48	drwxr-xr-x			
> 🕞 list.view		2010-05	13:49	drwxr-xr-x			

### Android Location 的使用

大家好,今天说说 Location, Location 在 Android 开发中还是经常用到的,比如 通过经纬度获取天气,根据 Location 获取所在地区详细 Address (比如 Google Map 开发).等。而在 Android 中通过 LocationManager 来获取 Location.通常获取 Location 有 GPS 获取,WIFI 获取。

我今天做一个简单的小 Demo,来教大家如何获取 Location,从而获取经纬度。下一节将教大家通过 Location 来获取 Address

```
大家通过 Location 来获取 Address.
首先第一步:
创建一个 Android 工程命名为 LocationDemo.
第二步:修改 main.xml 代码如下:
view plaincopy to clipboardprint?
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"</p>
   android:orientation="vertical"
   android:layout width="fill parent"
   android:layout_height="fill_parent"
<TextView
   android:id="@+id/longitude"
   android:layout_width="fill_parent"
   android:layout_height="wrap_content"
   android:text="longitude:"
   />
```

# <TextView

android:id="@+id/latitude" android:layout width="fill parent"

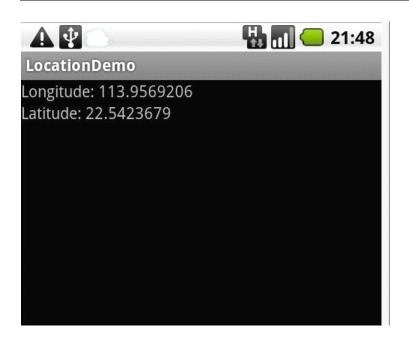
```
android:layout_height="wrap_content"
   android:text="latitude:"
   />
</LinearLayout>
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"</pre>
   android:orientation="vertical"
   android:layout_width="fill_parent"
   android:layout_height="fill_parent"
   >
<TextView
android:id="@+id/longitude"
   android:layout_width="fill_parent"
   android:layout_height="wrap_content"
   android:text="longitude:"
   />
<TextView
android:id="@+id/latitude"
   android:layout_width="fill_parent"
   android:layout_height="wrap_content"
   android:text="latitude:"
   />
</LinearLayout>
第三步:修改 LocationDemo.java ,代码如下:
view plaincopy to clipboardprint?
package com.android.tutor;
import android.app.Activity;
import android.content.Context;
import android.location.Location;
```

```
import android.location.LocationManager;
import android.os.Bundle;
import android.widget.TextView;
public class LocationDemo extends Activity {
   private TextView longitude;
   private TextView latitude;
   @Override
   public void onCreate(Bundle savedInstanceState) {
      super.onCreate(savedInstanceState);
      setContentView(R.layout.main);
      longitude = (TextView)findViewById(R.id.longitude);
      latitude = (TextView)findViewById(R.id.latitude);
     Location mLocation = getLocation(this);
      longitude.setText("Longitude: " + mLocation.getLongitude());
      latitude.setText("Latitude: " + mLocation.getLatitude());
   }
   //Get the Location by GPS or WIFI
   public Location getLocation(Context context) {
      LocationManager locMan = (LocationManager) context
             .getSystemService(Context.LOCATION_SERVICE);
      Location location = locMan
             .getLastKnownLocation(LocationManager.GPS_PROVIDER);
     if (location == null) {
         location = locMan
               .getLastKnownLocation(LocationManager.NETWORK PROVIDER);
```

```
}
      return location;
}
package com.android.tutor;
import android.app.Activity;
import android.content.Context;
import android.location.Location;
import android.location.LocationManager;
import android.os.Bundle;
import android.widget.TextView;
public class LocationDemo extends Activity {
private TextView longitude;
private TextView latitude;
   @Override
   public void onCreate(Bundle savedInstanceState) {
      super.onCreate(savedInstanceState);
      setContentView(R.layout.main);
      longitude = (TextView)findViewById(R.id.longitude);
      latitude = (TextView)findViewById(R.id.latitude);
      Location mLocation = getLocation(this);
      longitude.setText("Longitude: " + mLocation.getLongitude());
      latitude.setText("Latitude: "+mLocation.getLatitude());\\
   //Get the Location by GPS or WIFI
```

```
public Location getLocation(Context context) {
 LocationManager\ locMan = (LocationManager)\ context
   .getSystemService(Context.LOCATION SERVICE);
 Location location = locMan
   .getLastKnownLocation(LocationManager.GPS\_PROVIDER);
 if (location == null) {
  location = locMan
   . getLastKnownLocation(LocationManager.NETWORK\_PROVIDER);
 }
 return location;
第四步:增加权限,修改 AndroidManifest.xml 代码如下 (第16行为所增行):
view plaincopy to clipboardprint?
<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"</pre>
    package="com.android.tutor"
    android:versionCode="1"
    android:versionName="1.0">
   <application android:icon="@drawable/icon" android:label="@string/app_name">
      <activity android:name=".LocationDemo"
             android:label="@string/app_name">
         <intent-filter>
            <action android:name="android.intent.action.MAIN" />
            <category android:name="android.intent.category.LAUNCHER" />
         </intent-filter>
      </activity>
   </application>
   <uses-sdk android:minSdkVersion="7" />
   <uses-permission android:name="android.permission.ACCESS_FINE_LOCATION"/>
```

```
</manifest>
<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"</pre>
    package="com.android.tutor"
    android:versionCode="1"
    android:versionName="1.0">
   <application android:icon="@drawable/icon" android:label="@string/app_name">
      <activity android:name=".LocationDemo"
              android:label="@string/app_name">
         <intent-filter>
             <action android:name="android.intent.action.MAIN" />
             <category android:name="android.intent.category.LAUNCHER" />
         </intent-filter>
      </activity>
   </application>
   <uses-sdk android:minSdkVersion="7" />
<\!\!\!\text{uses-permission and } roid: name = "and roid.permission. ACCESS\_FINE\_LOCATION" /\!\!\!>
</manifest>
第五步:运行 LocationDemo 工程, 所得效果如下(真机深圳测试):
```



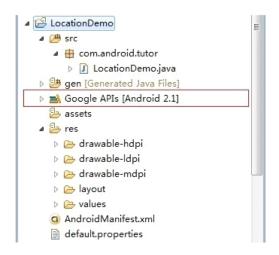
# 通过 Location 获取 Address 的使用

大家好,上一节我讲了一下如何通过 LocationManager 来获取 Location,没有看过上一节的同学,可以点击如下链接返回查看:

Android 高手进阶教程十四之---Android Location 的使用!

我们获取 Location 的目的之一肯定是有获取这个位置的详细地址,而我们有了 Location 在来获取 Address 就相对简单多了,因为 GoogleApi 已经封装好了方法,我们只需呀通过 Location 获取 GeoPoint, 然后在通过 GeoPoint 来获取我们想要的 Address. 下面是我做的一个简单的 Demo.

第一步新建一个 Android 工程 LocationDemo, 注意这里选用的是(Google APIs), 下面是文件目录结构:



第二步: 修改 main. xml (相比第十四节增加了一个 address 的 TextView),代码如下: view plaincopy to clipboardprint?

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

<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
android:orientation="vertical"</pre>

```
android:layout_width="fill_parent"
      android:layout_height="fill_parent"
      >
<TextView
      android:id="@+id/longitude"
      android:layout_width="fill_parent"
      android:layout_height="wrap_content"
      android:text="longitude:"
      />
<TextView
      android:id="@+id/latitude"
      android:layout_width="fill_parent"
      android:layout_height="wrap_content"
      android:text="latitude:"
<TextView
      android:id="@+id/address"
      android:layout_width="fill_parent"
      android:layout_height="wrap_content"
</LinearLayout>
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"</pre>
      android:orientation="vertical"
      android:layout_width="fill_parent"
      android:layout_height="fill_parent"
      >
<TextView
android:id="@+id/longitude"
```

```
android:layout_width="fill_parent"
      android:layout_height="wrap_content"
      android:text="longitude:"
      />
<TextView
android:id="@+id/latitude"
      android:layout_width="fill_parent"
      android:layout_height="wrap_content"
      android:text="latitude:"
      />
<TextView
android:id="@+id/address"
      android:layout_width="fill_parent"
      android:layout_height="wrap_content"
</LinearLayout>
第三步:修改 LocationDemo. java(增加了两个方法)代码如下:
view plaincopy to clipboardprint?
package com. android. tutor;
import java.util.List;
import java.util.Locale;
import com. google. android. maps. GeoPoint;
import android. app. Activity;
import android.content.Context;
import android.location.Address;
import android.location.Geocoder;
import android.location.Location;
import android.location.LocationManager;
import android.os. Bundle;
```

```
import android.widget.TextView;
public class LocationDemo extends Activity {
      private TextView longitude;
      private TextView latitude;
      private TextView address;
      @Override
      public void onCreate(Bundle savedInstanceState) {
              super. onCreate(savedInstanceState);
              setContentView(R.layout.main);
              longitude = (TextView)findViewById(R.id.longitude);
              latitude = (TextView)findViewById(R.id.latitude);
              address = (TextView)findViewById(R.id.address);
              Location mLocation = getLocation(this);
              GeoPoint gp = getGeoByLocation(mLocation);
              Address mAddress = getAddressbyGeoPoint(this, gp);
              longitude.\ setText("Longitude:\ "\ +\ mLocation.\ getLongitude());
              latitude.\ setText("Latitude:\ "\ +\ mLocation.\ getLatitude());
                 address.setText("Address: " + mAddress.getCountryName()+"," +
mAddress.getLocality());
      //Get the Location by GPS or WIFI
      public Location getLocation(Context context) {
```

```
LocationManager locMan = (LocationManager) context
                           .getSystemService(Context.LOCATION_SERVICE);
              Location location = locMan
                            . \verb| getLastKnownLocation(LocationManager.GPS\_PROVIDER)|; \\
              if (location == null) {
                     location = locMan
                                    . \verb|getLastKnownLocation| (Location Manager. \verb|NETWORK|) \\
_PROVIDER);
              return location;
      //通过 Location 获取 GeoPoint
         public
                    GeoPoint getGeoByLocation(Location location) {
               GeoPoint gp = null;
               try {
                      if (location != null) {
                                   double geoLatitude = location.getLatitude() *
1E6;
                                 double geoLongitude = location.getLongitude() *
1E6;
                                     gp = new GeoPoint((int) geoLatitude, (int)
geoLongitude);
               } catch (Exception e) {
                      e.printStackTrace();
               return gp;
         }
```

```
//通过 GeoPoint 来获取 Address
                     Address getAddressbyGeoPoint(Context cntext, GeoPoint gp)
          public
              Address result = null;
              try {
                    if (gp != null) {
                                         Geocoder gc = new Geocoder(cntext,
Locale. CHINA);
                               double geoLatitude = (int) gp.getLatitudeE6() /
1E6;
                             double geoLongitude = (int) gp.getLongitudeE6() /
1E6;
                                                  List<Address> lstAddress =
gc.getFromLocation(geoLatitude,
                                         geoLongitude, 1);
                            if (lstAddress.size() > 0) {
                                  result = lstAddress.get(0);
                            }
              } catch (Exception e) {
                     e.printStackTrace();
              return result;
        }
package com. android. tutor;
import java.util.List;
```

```
import java.util.Locale;
import com. google. android. maps. GeoPoint;
import android. app. Activity;
import android.content.Context;
import android. location. Address;
import android. location. Geocoder;
import android.location.Location;
import android.location.LocationManager;
import android.os.Bundle;
import android.widget.TextView;
public class LocationDemo extends Activity {
private TextView longitude;
private TextView latitude;
private TextView address;
      @Override
      public void onCreate(Bundle savedInstanceState) {
              super. onCreate(savedInstanceState);
              setContentView(R. layout. main);
              longitude = (TextView)findViewById(R.id.longitude);
              latitude = (TextView)findViewById(R.id.latitude);
              address = (TextView) findViewById(R. id. address);
              Location mLocation = getLocation(this);
              GeoPoint gp = getGeoByLocation(mLocation);
              Address mAddress = getAddressbyGeoPoint(this, gp);
```

```
longitude.setText("Longitude: " + mLocation.getLongitude());
              latitude.setText("Latitude: " + mLocation.getLatitude());
                address.setText("Address: " + mAddress.getCountryName()+"," +
mAddress.getLocality());
      //Get the Location by GPS or WIFI
public Location getLocation(Context context) {
    LocationManager locMan = (LocationManager) context
      .getSystemService(Context.LOCATION SERVICE);
    Location location = locMan
      .getLastKnownLocation(LocationManager.GPS_PROVIDER);
    if (location == null) {
     location = locMan
         . getLastKnownLocation(LocationManager.NETWORK\_PROVIDER);
    return location;
//通过Location 获取GeoPoint
    public
              GeoPoint getGeoByLocation(Location location) {
          GeoPoint gp = null;
          try {
                if (location != null) {
                        double geoLatitude = location.getLatitude() * 1E6;
                        double geoLongitude = location.getLongitude() * 1E6;
                        gp = new GeoPoint((int) geoLatitude, (int) geoLongitude);
                }
```

```
} catch (Exception e) {
                e.printStackTrace();
          return gp;
    //通过 GeoPoint 来获取 Address
             Address getAddressbyGeoPoint(Context cntext, GeoPoint gp) {
          Address result = null;
          try {
                if (gp != null) {
                        Geocoder gc = new Geocoder(cntext, Locale.CHINA);
                        double geoLatitude = (int) gp.getLatitudeE6() / 1E6;
                        double geoLongitude = (int) gp.getLongitudeE6() / 1E6;
                                                 List<Address>
                                                                lstAddress
gc.getFromLocation(geoLatitude,
                                    geoLongitude, 1);
                        if (lstAddress.size() > 0) {
                              result = lstAddress.get(0);
                        }
                }
          } catch (Exception e) {
                e.printStackTrace();
          return result;
    }
```

第四步:最重要一步在 AndroidManiefest. xml 中导入 Google Api(第 14 行代码)库,代码如

```
下:
view plaincopy to clipboardprint?
<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"</pre>
          package="com. android. tutor"
          android:versionCode="1"
          android:versionName="1.0">
                                 <application</pre>
                                                     android:icon="@drawable/icon"
android:label="@string/app_name">
               <activity android:name=".LocationDemo"</pre>
                               android:label="@string/app name">
                     <intent-filter>
                               <action android:name="android.intent.action.MAIN"</pre>
/>
                                                                           <category</pre>
android:name="android.intent.category.LAUNCHER" />
                     </intent-filter>
               </activity>
               <uses-library android:name="com.google.android.maps" />
      </application>
      <uses-sdk android:minSdkVersion="7" />
                                                                   <uses-permission</pre>
android:name="android.permission.ACCESS_FINE_LOCATION"/>
</manifest>
<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"</pre>
          package="com. android. tutor"
          android:versionCode="1"
          android:versionName="1.0">
```

```
android:icon="@drawable/icon"
                                 <application</pre>
android:label="@string/app_name">
               <activity android:name=".LocationDemo"</pre>
                                android:label="@string/app_name">
                     \langle intent-filter \rangle
                            <action android:name="android.intent.action.MAIN" />
                                                                            <category</pre>
android:name="android.intent.category.LAUNCHER" />
                      </intent-filter>
               </activity>
         <uses-library android:name="com.google.android.maps" />
      \verb|\langle|application||
      <uses-sdk android:minSdkVersion="7" />
<uses-permission android:name="android.permission.ACCESS_FINE_LOCATION"/>
\langle /manifest \rangle
第五步:运行上述工程,效果如下图如示:
```



## Android 中万能的 BaseAdapter(Spinner,ListView,GridView)的使用

大家好!今天给大家讲解一下 BaseAdapter(基础适配器)的用法,适配器的作用主要是用来给诸如(Spinner, ListView, GridView)来填充数据的。而(Spinner, ListView, GridView)都有自己的适配器(记起来麻烦)。但是 BaseAdapter (一招鲜)对他们来说却是通用的,为什么这么说呢,首先我们看一下 API 文档:

# public abstract class BaseAdapter extends Object implements ListAdapter SpinnerAdapter java.lang.Object Landroid.widget.BaseAdapter FKnown Direct Subclasses ArrayAdapter<T>, CursorAdapter, SimpleAdapter Known Indirect Subclasses ResourceCursorAdapter, SimpleCursorAdapter

我们看一下 BaseAdapter 已经实现了 ListAdapter 和 SpinnerAdapter 的接口,而 GridView 的适配器是实现了 ListAdapter 接口,只不过是二维的。所以说 BaseAdapter 对他们三者来说是通用的。

下面我来说一下 BaseAdapter 的主要用法. 就是我们定义一个类(如: MyAdapter) 而这个类继承 BaseAdapter. 因为它是 implements 了 ListAdapter 和 SpinnerAdapter 的接口,所以要实现里面的方法,代码如下(未作任何改动的):

```
view plaincopy to clipboardprint?
private class MyAdapter extends BaseAdapter{
    @Override
    public int getCount() {
        // TODO Auto-generated method stub
        return 0;
```

```
@Override
      public Object getItem(int arg0) {
              // TODO Auto-generated method stub
              return null;
      @Override
      public long getItemId(int position) {
              // TODO Auto-generated method stub
              return 0;
      @Override
      public View getView(int position, View convertView, ViewGroup parent) {
              // TODO Auto-generated method stub
              return null;
      }
private \ class \ MyAdapter \ extends \ BaseAdapter \{
    @Override
    public int getCount() {
     // TODO Auto-generated method stub
     return 0;
    @Override
    public Object getItem(int arg0) {
     // TODO Auto-generated method stub
     return null;
```

```
@Override
   public long getItemId(int position) {
    // TODO Auto-generated method stub
    return 0;
   }
   @Override
   public View getView(int position, View convertView, ViewGroup parent) {
    // TODO Auto-generated method stub
    return null;
为了便于大家理解,老规矩写一个简单的 Demo,大家按我的步骤来就 OK 了.
第一步:新建一个 Android 工程命名为 BaseAdapterDemo.
第二步:修改 main. xml 代码如下:
view plaincopy to clipboardprint?
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"</pre>
     android:orientation="vertical"
     android:layout_width="fill_parent"
     android:layout_height="fill_parent"
     <TextView
             android:layout_width="fill_parent"
             android:layout_height="wrap_content"
             android:text="Welcome to Mr Wei's Blog"
     />
     Spinner
```

```
android:id="@+id/spinner"
              android:layout_width="fill_parent"
              android:layout_height="wrap_content"
      />
          <ListView
              android:id="@+id/listview"
              android:layout_width="fill_parent"
              android:layout_height="wrap_content"
      />
          \langle GridView \rangle
              android:id="@+id/gridview"
              android:layout_width="fill_parent"
              android:layout_height="wrap_content"
      />
</LinearLayout>
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"</pre>
      android:orientation="vertical"
      android:layout_width="fill_parent"
      android:layout_height="fill_parent"
<TextView
         android:layout_width="fill_parent"
         android:layout_height="wrap_content"
         android:text="Welcome to Mr Wei's Blog"
      />
      <Spinner
         android:id="@+id/spinner"
         android:layout_width="fill_parent"
```

```
android:layout_height="wrap_content"
      />
          <ListView
         android:id="@+id/listview"
         android:layout_width="fill_parent"
         android:layout_height="wrap_content"
          <GridView
         android:id="@+id/gridview"
         android:layout_width="fill_parent"
         android:layout_height="wrap_content"
      />
</LinearLayout>
第三步:修该 BaseAdapterDemo. java 代码如下:
view plaincopy to clipboardprint?
package com. tutor. baseadapter;
import android.app.Activity;
import android.graphics.Color;
import android.os. Bundle;
import android.view.View;
import android.view.ViewGroup;
import android.widget.BaseAdapter;
import android.widget.GridView;
import android.widget.ListView;
import android.widget.Spinner;
import android.widget.TextView;
public class BaseAdapterDemo extends Activity {
      private Spinner mSpinner;
```

```
private ListView mListView;
private GridView mGridView;
private MyAdapter mMyAdapter;
@Override
public void onCreate(Bundle savedInstanceState) {
       super.onCreate(savedInstanceState);
       setContentView(R. layout.main);
       setupViews();
public void setupViews() {
       mMyAdapter = new MyAdapter();
       mSpinner = (Spinner)findViewById(R.id.spinner);
       mSpinner.setAdapter(mMyAdapter);
       mListView = (ListView)findViewById(R.id.listview);
       mListView.setAdapter(mMyAdapter);
       mGridView = (GridView)findViewById(R.id.gridview);
       mGridView.setAdapter(mMyAdapter);
       mGridView.setNumColumns(2);
//定义自己的适配器,注意 getCount 和 getView 方法
private class MyAdapter extends BaseAdapter{
       @Override
       public int getCount() {
             // 这里我就返回10了,也就是一共有10项数据项
             return 10;
```

```
@Override
             public Object getItem(int arg0) {
                   return arg0;
             @Override
             public long getItemId(int position) {
                   return position;
             @Override
             public View getView(int position, View convertView, ViewGroup parent)
                   // position 就是位置从 0 开始, convertView 是 Spinner, ListView
中每一项要显示的 view
                   //通常 return 的 view 也就是 convertView
                   //parent 就是父窗体了,也就是 Spinner, ListView, GridView
了.
                   TextView mTextView = new
TextView(getApplicationContext());
                   mTextView.setText("BaseAdapterDemo");
                   mTextView.setTextColor(Color.RED);
                   return mTextView;
package com. tutor. baseadapter;
import android.app.Activity;
import android.graphics.Color;
import android.os.Bundle;
```

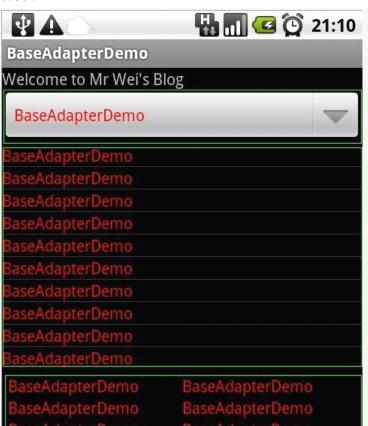
```
import android.view.View;
import android.view.ViewGroup;
import android.widget.BaseAdapter;
import android.widget.GridView;
import android.widget.ListView;
import android.widget.Spinner;
import android.widget.TextView;
public class BaseAdapterDemo extends Activity {
private Spinner mSpinner;
private ListView mListView;
private GridView mGridView;
private MyAdapter mMyAdapter;
      @Override
      public void onCreate(Bundle savedInstanceState) {
              super. onCreate(savedInstanceState);
              setContentView(R.layout.main);
              setupViews();
      public void setupViews() {
         mMyAdapter = new MyAdapter();
         mSpinner = (Spinner)findViewById(R.id.spinner);
         mSpinner.setAdapter(mMyAdapter);
         mListView = (ListView)findViewById(R.id.listview);
         mListView.setAdapter(mMyAdapter);
         mGridView = (GridView)findViewById(R.id.gridview);
         mGridView.setAdapter(mMyAdapter);
         mGridView.setNumColumns(2);
```

```
}
     //定义自己的适配器,注意 getCount 和 getView 方法
     private class MyAdapter extends BaseAdapter{
   @Override
   public int getCount() {
    // 这里我就返回10了,也就是一共有10项数据项
    return 10;
   @Override
   public Object getItem(int arg0) {
    return arg0;
   @Override
   public long getItemId(int position) {
    return position;
   @Override
   public View getView(int position, View convertView, ViewGroup parent) {
    // position 就是位置从 0 开始, convertView 是 Spinner, ListView 中每一项要显示
的 view
    //通常 return 的 view 也就是 convertView
    //parent 就是父窗体了,也就是 Spinner, ListView, GridView 了.
    TextView mTextView = new TextView(getApplicationContext());
    mTextView.setText("BaseAdapterDemo");
    mTextView.setTextColor(Color.RED);
    return mTextView;
```

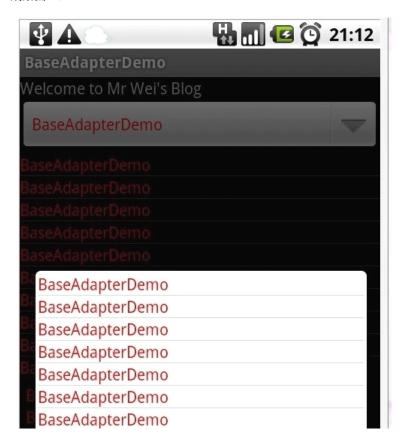
}

第四步:运行程序效果图如下:

效果图一:



## 效果图二:



等等,平时我在这里就和大家告别了,今天还没完呵呵,因为下面是我们的重点了,我们平常看的应用列表什么的,不是单单的一个 TextView 就可以了事 的,所以我们可以在 Layout 里事先 定义好布局。这里我新建了一个名叫 baseadapter\_provider.xml 文件,代码如下: view plaincopy to clipboardprint?

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

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

android:orientation="horizontal"

android:layout\_width="fill\_parent"

```
android:layout_height="fill_parent"
      <ImageView</pre>
              android:id="@+id/imageView"
              android:layout_width="wrap_content"
              android:layout_height="wrap_content"
              android:src="@drawable/icon"
      />
      <TextView
              android:id="@+id/textview"
              android:layout_width="wrap_content"
              android:layout_height="wrap_content"
              android:text="BaseAdapter"
      />
</LinearLayout>
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"</pre>
      android:orientation="horizontal"
      android:layout_width="fill_parent"
      android:layout_height="fill_parent"
      <ImageView</pre>
         android:id="@+id/imageView"
         android:layout_width="wrap_content"
         android:layout_height="wrap_content"
         android:src="@drawable/icon"
      />
<TextView
    android:id="@+id/textview"
```

```
android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="BaseAdapter"
      />
\langle / Linear Layout \rangle
将 getView()方法修改如下:
view plaincopy to clipboardprint?
      @Override
             public View getView(int position, View convertView, ViewGroup parent)
{
                   // position 就是位置从 0 开始, convertView 是 Spinner, ListView
中每一项要显示的 view
                   //通常 return 的 view 也就是 convertView
                      //parent 就是父窗体了,也就是 Spinner, ListView, GridView
了.
//
                                             TextView
                                                         mTextView
                                                                          new
TextView(getApplicationContext());
                 mTextView.setText("BaseAdapterDemo");
//
//
                 mTextView.setTextColor(Color.RED);
//
                 return mTextView;
                       //LayoutInflater 不会的参照我的 Android 高手进阶教程
(五)
                                                             convertView
LayoutInflater.from(getApplicationContext()).inflate
                   (R. layout. baseadapter_provider, null);
                                                    TextView
                                                               mTextView
```

```
(TextView) convertView. findViewById(R. id. textview);
                   mTextView.setText("BaseAdapterDemo" + position);
                   mTextView.setTextColor(Color.RED);
                   return convertView;
@Override
   public View getView(int position, View convertView, ViewGroup parent) {
    // position 就是位置从 0 开始, convertView 是 Spinner, ListView 中每一项要显示
的 view
    //通常 return 的 view 也就是 convertView
    //parent 就是父窗体了,也就是 Spinner, ListView, GridView 了.
      TextView mTextView = new TextView(getApplicationContext());
//
//
      mTextView.setText("BaseAdapterDemo");
//
      mTextView.setTextColor(Color.RED);
      return mTextView;
    //LayoutInflater 不会的参照我的 Android 高手进阶教程(五)
     convertView = LayoutInflater.from(getApplicationContext()).inflate
     (R. layout. baseadapter_provider, null);
    TextView mTextView = (TextView)convertView.findViewById(R.id.textview);
    mTextView.setText("BaseAdapterDemo" + position);
    mTextView.setTextColor(Color.RED);
    return convertView;
再次运行看一下效果图如下:
```

## Android 中 Intent 传递对象的两种方法(Serializable,Parcelable)

大家好,好久不见,今天要给大家讲一下 Android 中 Intent 中如何传递对象,就我目前所知道的有两种方法,一种是 Bundle. putSerializable (Key, Object);另一种是 Bundle. putParcelable (Key, Object);当然这些 Object 是有一定的条件的,前者是实现了 Serializable 接口,而后者是实现了 Parcelable 接口,为了让大 家更容易理解我还是照常写了一个简单的 Demo,大家就一步一步跟我来吧!

第一步:新建一个 Android 工程命名为 ObjectTranDemo(类比较多哦!)目录结构如下图:



第二步:修改 main. xml 布局文件(这里我增加了两个按钮)代码如下 view plaincopy to clipboardprint?
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android" android:orientation="vertical"

android:layout\_width="fill\_parent"
android:layout\_height="fill\_parent"

>

```
<TextView
      android:layout_width="fill_parent"
      android:layout_height="wrap_content"
      android:text="Welcome to Mr wei's blog."
      />
<Button
      android:id="@+id/button1"
      android:layout_width="fill_parent"
      android:layout_height="wrap_content"
      android:text="Serializable"
/>
<Button
      android:id="@+id/button2"
      android:layout_width="fill_parent"
      android:layout_height="wrap_content"
      android:text="Parcelable"
/>
</LinearLayout>
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"</pre>
      android:orientation="vertical"
      android:layout_width="fill_parent"
      android:layout_height="fill_parent"
<TextView
      android:layout_width="fill_parent"
      android:layout_height="wrap_content"
      android:text="Welcome to Mr wei's blog."
      />
```

```
<Button
android:id="@+id/button1"
android:layout_width="fill_parent"
android:layout_height="wrap_content"
android:text="Serializable"
/>
<Button
android:id="@+id/button2"
android:layout_width="fill_parent"
android:layout_height="wrap_content"
android:text="Parcelable"
</LinearLayout>
第三步:新建两个类一个是 Person. java 实现 Serializable 接口,另一个 Book. java 实现
Parcelable 接口,代码分别如下:
Person. java:
view plaincopy to clipboardprint?
package com. tutor.objecttran;
import java.io.Serializable;
public class Person implements Serializable {
      private static final long serialVersionUID = -7060210544600464481L;
      private String name;
      private int age;
      public String getName() {
             return name;
      public void setName(String name) {
             this.name = name;
```

```
public int getAge() {
              return age;
      public void setAge(int age) {
              this.age = age;
      }
package com. tutor.objecttran;
import java.io.Serializable;
public class Person implements Serializable {
private static final long serial
VersionUID = -7060210544600464481L;
private String name;
private int age;
public String getName() {
    return name;
}
public void setName(String name) {
    this. name = name;
public int getAge() {
    return age;
public void setAge(int age) {
    this.age = age;
}
}
```

```
Book. java:
view plaincopy to clipboardprint?
package com. tutor. objecttran;
import android.os.Parcel;
import android.os.Parcelable;
public class Book implements Parcelable {
      private String bookName;
      private String author;
      private int publishTime;
      public String getBookName() {
              return bookName;
      public void setBookName(String bookName) {
              this.bookName = bookName;
      public String getAuthor() {
              return author;
      public void setAuthor(String author) {
              this.author = author;
      public int getPublishTime() {
              return publishTime;
      public void setPublishTime(int publishTime) {
              this.publishTime = publishTime;
```

```
public static final Parcelable.Creator<Book> CREATOR = new Creator<Book>()
{
              public Book createFromParcel(Parcel source) {
                    Book mBook = new Book();
                    mBook.bookName = source.readString();
                    mBook.author = source.readString();
                    mBook.publishTime = source.readInt();
                    return mBook;
              public Book[] newArray(int size) {
                    return new Book[size];
      };
      public int describeContents() {
              return 0:
      public void writeToParcel(Parcel parcel, int flags) {
              parcel.writeString(bookName);
              parcel.writeString(author);
              parcel.writeInt(publishTime);
      }
package com. tutor. objecttran;
import android.os.Parcel;
import android.os.Parcelable;
public class Book implements Parcelable {
private String bookName;
private String author;
```

```
private int publishTime;
public String getBookName() {
    return bookName;
public void setBookName(String bookName) {
    this.bookName = bookName;
public String getAuthor() {
    return author;
public void setAuthor(String author) {
    this.author = author;
public int getPublishTime() {
    return publishTime;
}
public void setPublishTime(int publishTime) {
    this.publishTime = publishTime;
}
public static final Parcelable.Creator<Book> CREATOR = new Creator<Book>() {
    public Book createFromParcel(Parcel source) {
     Book mBook = new Book();
     mBook.bookName = source.readString();
     mBook.author = source.readString();
     mBook.publishTime = source.readInt();
     return mBook;
```

```
public Book[] newArray(int size) {
                 return new Book[size];
};
public int describeContents() {
              return 0;
public void writeToParcel(Parcel parcel, int flags) {
              parcel.writeString(bookName);
              parcel.writeString(author);
              parcel.writeInt(publishTime);
}
第四步:修改 ObjectTranDemo. java, 并且新建两个 Activity, 一个是 ObjectTranDemol. java,
别一个是 ObjectTranDemo2. java. 分别用来显示 Person 对像数据,和 Book 对象数据:,代码
分别如下:
ObjectTranDemo.java:
view plaincopy to clipboardprint?
package com. tutor. objecttran;
import android.app.Activity;
import android.content.Intent;
 import android.os. Bundle;
import android.view.View;
 import android.view.View.OnClickListener;
import android.widget.Button;
public \ class \ Object Tran Demo \ extends \ Activity \ implements \ On Click Listener \ \{ below the content of the content
```

```
private Button sButton, pButton;
public
          final static String SER_KEY = "com. tutor.objecttran.ser";
          final static String PAR_KEY = "com. tutor. objecttran. par";
public
public void onCreate(Bundle savedInstanceState) {
        super. onCreate(savedInstanceState);
        setContentView(R.layout.main);
        setupViews();
}
//我的一贯作风呵呵
public void setupViews() {
        sButton = (Button) findViewById(R.id.button1);
        pButton = (Button)findViewById(R.id.button2);
        sButton.setOnClickListener(this);
        pButton.setOnClickListener(this);
//Serializeable 传递对象的方法
public void SerializeMethod() {
        Person mPerson = new Person();
        mPerson.setName("frankie");
        mPerson.setAge(25);
        Intent mIntent = new Intent(this, ObjectTranDemol.class);
        Bundle mBundle = new Bundle();
        \verb|mBundle.putSerializable(SER\_KEY, \verb|mPerson|)|;
        mIntent.putExtras(mBundle);
        startActivity(mIntent);
}
```

```
//Pacelable 传递对象方法
      public void PacelableMethod() {
              Book mBook = new Book();
              mBook.setBookName("Android Tutor");
              mBook.setAuthor("Frankie");
              mBook.setPublishTime(2010);
              Intent mIntent = new Intent(this, ObjectTranDemo2.class);
              Bundle mBundle = new Bundle();
              mBundle.putParcelable(PAR_KEY, mBook);
              mIntent.putExtras(mBundle);
              startActivity(mIntent);
      }
      //铵钮点击事件响应
      public void onClick(View v) {
              if(v == sButton) {
                    SerializeMethod();
              }else{
                    PacelableMethod():
}
package com. tutor.objecttran;
import android. app. Activity;
import android.content.Intent;
import android.os.Bundle;
import android.view.View;
import android.view.View.OnClickListener;
import android.widget.Button;
```

```
public class ObjectTranDemo extends Activity implements OnClickListener {
private Button sButton, pButton;
          final static String SER_KEY = "com. tutor.objecttran.ser";
public
public
          final static String PAR_KEY = "com. tutor.objecttran.par";
      public void onCreate(Bundle savedInstanceState) {
              super. onCreate(savedInstanceState);
              setContentView(R.layout.main);
              setupViews();
      }
      //我的一贯作风呵呵
      public void setupViews() {
         sButton = (Button)findViewById(R.id.button1);
         pButton = (Button) findViewById(R.id. button2);
         sButton.setOnClickListener(this);
         pButton.setOnClickListener(this);
      //Serializeable 传递对象的方法
      public void SerializeMethod() {
         Person mPerson = new Person();
         mPerson.setName("frankie");
         mPerson.setAge(25);
         Intent mIntent = new Intent(this,ObjectTranDemo1.class);
         Bundle mBundle = new Bundle();
         mBundle.putSerializable(SER_KEY, mPerson);
         mIntent.putExtras(mBundle);
```

```
startActivity(mIntent);
      //Pacelable 传递对象方法
      public void PacelableMethod() {
        Book mBook = new Book();
        mBook.setBookName("Android Tutor");
        mBook.setAuthor("Frankie");
         mBook.setPublishTime(2010);
         Intent mIntent = new Intent(this, ObjectTranDemo2.class);
        Bundle mBundle = new Bundle();
        mBundle.putParcelable(PAR_KEY, mBook);
         mIntent.putExtras(mBundle);
         startActivity(mIntent);
      //铵钮点击事件响应
public void onClick(View v) {
    if(v == sButton) {
    SerializeMethod();
   }else{
    PacelableMethod();
ObjectTranDemol.java:
view plaincopy to clipboardprint?
package com.tutor.objecttran;
import android.app.Activity;
import android.os.Bundle;
```

```
import android.widget.TextView;
public class ObjectTranDemo1 extends Activity {
      @Override
      public void onCreate(Bundle savedInstanceState) {
              super. onCreate(savedInstanceState);
              TextView mTextView = new TextView(this);
              Person mPerson =
(Person)getIntent().getSerializableExtra(ObjectTranDemo.SER_KEY);
              mTextView.setText("You name is: " + mPerson.getName() + "\n"+
                          "You age is: " + mPerson.getAge());
              setContentView(mTextView);
package com.tutor.objecttran;
import android. app. Activity;
import android.os.Bundle;
import android.widget.TextView;
public class ObjectTranDemo1 extends Activity {
      @Override
      public void onCreate(Bundle savedInstanceState) {
              super. onCreate(savedInstanceState);
              TextView mTextView = new TextView(this);
              Person mPerson =
(Person)getIntent().getSerializableExtra(ObjectTranDemo.SER_KEY);
              mTextView.setText("You name is: " + mPerson.getName() + "\n"+
```

```
"You age is: " + mPerson.getAge());
              setContentView(mTextView);
      }
ObjectTranDemo2.java:
view plaincopy to clipboardprint?
package com. tutor. objecttran;
import android. app. Activity;
import android.os.Bundle;
import android.widget.TextView;
public class ObjectTranDemo2 extends Activity {
      public void onCreate(Bundle savedInstanceState) {
              super. onCreate(savedInstanceState);
              TextView mTextView = new TextView(this);
              Book mBook =
(Book) getIntent().getParcelableExtra(ObjectTranDemo.PAR_KEY);
              mTextView.setText("Book name is: " + mBook.getBookName()+"\n"+
                                             "Author is: " + mBook.getAuthor() +
"\n" +
                                             "PublishTime is: " +
mBook.getPublishTime());
              setContentView(mTextView);
package com. tutor.objecttran;
import android.app.Activity;
```

```
import android.os.Bundle;
import android.widget.TextView;
public class ObjectTranDemo2 extends Activity {
      public void onCreate(Bundle savedInstanceState) {
              super. onCreate(savedInstanceState);
              TextView mTextView = new TextView(this);
              Book mBook =
(Book) getIntent().getParcelableExtra(ObjectTranDemo.PAR_KEY);
              mTextView.setText("Book name is: " + mBook.getBookName()+"\n"+
                        "Author is: " + mBook.getAuthor() + "\n" +
                        "PublishTime is: " + mBook.getPublishTime());
              setContentView(mTextView);
第五步:比较重要的一步啦,修改 AndroidManifest. xml 文件(将两个新增的 Activity,
ObjectTranDemo1, ObjectTranDemo2) 申明一下代码如下(第 14, 15 行):
view plaincopy to clipboardprint?
<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"</pre>
          package="com. tutor. objecttran"
          android:versionCode="1"
          android:versionName="1.0">
      <application android:icon="@drawable/icon"</pre>
android:label="@string/app_name">
              <activity android:name=".ObjectTranDemo"</pre>
                              android:label="@string/app_name">
                    <intent-filter>
                          <action android:name="android.intent.action.MAIN"</pre>
```

```
/>
                           <category</pre>
android:name="android.intent.category.LAUNCHER" />
                     </intent-filter>
               </activity>
               <activity android:name=".ObjectTranDemo1"></activity>
               <activity android:name=".ObjectTranDemo2"></activity>
      </application>
      <uses-sdk android:minSdkVersion="7" />
</manifest>
<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"</pre>
          package="com. tutor. objecttran"
          android:versionCode="1"
          android:versionName="1.0">
      <application android:icon="@drawable/icon"</pre>
and roid: label = \verb"@string/app_name">
               <activity android:name=".ObjectTranDemo"</pre>
                               android:label="@string/app_name">
                     <intent-filter>
                           <action android:name="android.intent.action.MAIN" />
                           <category</pre>
android:name="android.intent.category.LAUNCHER" />
                     </intent-filter>
               </activity>
    <activity android:name=".ObjectTranDemo1"></activity>
    <activity android:name=".ObjectTranDemo2"></activity>
      </application>
      <uses-sdk android:minSdkVersion="7" />
```

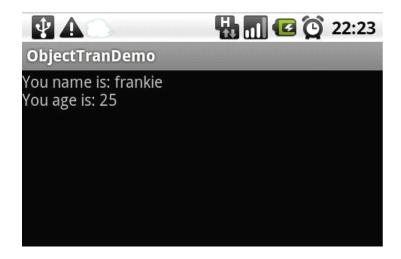
## </manifest>

第六步:运行上述工程查看效果图啦:

效果1: 首界面:



效果 2:点击 Serializable 按钮



效果 3:点击 Parcelable 按钮:

