BroadCastReceiver的概念

BroadCast 广播

当系统发生事件时，就会发送出广播（sendBroadcast(intent)），广播本身并不知道有多少人在关注自己

一个应用也可以发送出广播

通过广播中的关键字段，系统将寻找所有关注这个广播的应用，并触发他们注册的Receiver

BroadcastReceiver 用来监听广播

向系统注册自己关心的广播，当广播发出后，系统会带起进程并调用指定的方法去执行代码

Android系统的四大组件之一

本质是一个系统全局的监听者

用于监听系统全局的广播消息

非常方便地实现系统中不同组件之间的通信

onReceive(..)方法不能在10秒内完成，Android会认为该程序无响应，所以不要在此方法中执行耗时的操作 ANR异常：程序没有响应的异常

如果确定需要根据Broadcast来完成一项比较耗时的操作，则考虑通过Intent启动一个Service来完成

AndroidManifest.xml

*<?***xml version="1.0" encoding="utf-8"***?>*<**manifest xmlns:android="http://schemas.android.com/apk/res/android"  
 package="com.hjs.receiverdemo"**>  
  
 <**application  
 android:allowBackup="true"  
 android:icon="@mipmap/ic\_launcher"  
 android:label="@string/app\_name"  
 android:roundIcon="@mipmap/ic\_launcher\_round"  
 android:supportsRtl="true"  
 android:theme="@style/AppTheme"**>  
 <**activity android:name=".Demo2Activity"**>  
 <**intent-filter**>  
 <**action android:name="android.intent.action.MAIN"** />  
  
 <**category android:name="android.intent.category.LAUNCHER"** />  
 </**intent-filter**>  
 </**activity**>  
  
 <**activity android:name=".DemoActivity"**/>  
  
 *<!--receiver静态方式注册广播-->* <**receiver android:name=".receiver.MyReceiver"**>  
 <**intent-filter**>  
 <**action android:name="heying.test"**/>*<!--当含有该action的广播将会被对应的receiver接收-->* </**intent-filter**>  
 </**receiver**>  
  
 <**service android:name=".service.ComputeService"**/>  
 </**application**>  
  
</**manifest**>

activity\_main.xml

*<?***xml version="1.0" encoding="utf-8"***?>*<**RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"  
 android:layout\_width="match\_parent"  
 android:layout\_height="match\_parent"**>  
  
  
 <**Button  
 android:id="@+id/button1"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:layout\_alignParentStart="true"  
 android:layout\_alignParentLeft="true"  
 android:layout\_alignParentTop="true"  
 android:layout\_marginStart="28dp"  
 android:layout\_marginLeft="28dp"  
 android:layout\_marginTop="63dp"  
 android:onClick="send"  
 android:text="发送一个广播"** />  
  
 <**Button  
 android:id="@+id/button2"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:layout\_alignLeft="@+id/button1"  
 android:layout\_alignParentTop="true"  
 android:layout\_marginTop="167dp"  
 android:text="发送第2个广播"  
 android:onClick="send"**/>  
  
 <**Button  
 android:id="@+id/button3"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:layout\_alignLeft="@+id/button1"  
 android:layout\_alignParentTop="true"  
 android:layout\_marginLeft="1dp"  
 android:layout\_marginTop="259dp"  
 android:onClick="toDemoActivity"  
 android:text="跳转至DemoActivity"** />  
  
 <**TextView  
 android:id="@+id/tvDisplay"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:layout\_alignLeft="@+id/button1"  
 android:layout\_alignParentBottom="true"  
 android:layout\_marginBottom="120dp"  
 android:text="TextView"** />  
  
  
</**RelativeLayout**>

MyReceiver.java

**package** com.hjs.receiverdemo.receiver;  
  
**import** android.content.BroadcastReceiver;  
**import** android.content.Context;  
**import** android.content.Intent;  
**import** android.widget.Toast;  
  
*//广播接收者***public class** MyReceiver **extends** BroadcastReceiver {  
 */\*\*  
 \* 当接收到广播，处理的程序  
 \** ***@param context*** *\** ***@param intent*** *\*/* @Override  
 **public void** onReceive(Context context, Intent intent) {  
 Toast.*makeText*(context,**"接收到了"**,Toast.***LENGTH\_LONG***).show();  
  
 }  
}

MyReceiver2.java

**package** com.hjs.receiverdemo.receiver;  
  
**import** android.content.BroadcastReceiver;  
**import** android.content.Context;  
**import** android.content.Intent;  
**import** android.widget.Toast;  
  
*//广播接收者***public class** MyReceiver2 **extends** BroadcastReceiver {  
 */\*\*  
 \* 当接收到广播，处理的程序  
 \** ***@param context*** *\** ***@param intent*** *\*/* @Override  
 **public void** onReceive(Context context, Intent intent) {  
 Toast.*makeText*(context,**"接收到了第2个广播......"**,Toast.***LENGTH\_LONG***).show();  
  
 }  
}

DemoActivity.java

**package** com.hjs.receiverdemo;  
  
**import** android.app.Activity;  
**import** android.content.Intent;  
**import** android.os.Bundle;  
**import** android.view.View;  
**import** android.widget.TextView;  
  
**import** com.hjs.receiverdemo.receiver.MyReceiver;  
  
**public class** DemoActivity **extends** Activity {  
 **private** TextView **tvDisplay**;  
  
 @Override  
 **protected void** onCreate(Bundle savedInstanceState) {  
 **super**.onCreate(savedInstanceState);  
 setContentView(R.layout.***activity\_main***);  
  
 **tvDisplay**=(TextView)findViewById(R.id.***tvDisplay***);  
 **tvDisplay**.setText(**"第2个界面"**);  
 }  
  
 */\*\*  
 \* 点击事件发送广播  
 \** ***@param view*** *\*/* **public void** send(View view) {  
 **switch** (view.getId()) {  
 **case** R.id.***button1***:  
 *//发送广播* Intent intent = **new** Intent(**this**, MyReceiver.**class**);*//它回去AndroidManifest.xml文件中找对应的action / MyReceiver.class* sendBroadcast(intent);  
 **break**;  
 **case** R.id.***button2***:  
 intent = **new** Intent(**"heying.test2"**);  
 sendBroadcast(intent);  
 **break**;  
  
 }  
 }  
}

MainActivity.java

**package** com.hjs.receiverdemo;  
  
**import** android.content.Intent;  
**import** android.content.IntentFilter;  
**import** android.support.v7.app.AppCompatActivity;  
**import** android.os.Bundle;  
**import** android.view.View;  
  
**import** com.hjs.receiverdemo.receiver.MyReceiver;  
**import** com.hjs.receiverdemo.receiver.MyReceiver2;  
  
**public class** MainActivity **extends** AppCompatActivity {  
 **private** MyReceiver2 **receiver**;  
  
 @Override  
 **protected void** onCreate(Bundle savedInstanceState) {  
 **super**.onCreate(savedInstanceState);  
 setContentView(R.layout.***activity\_main***);  
  
 *//以代码方式注册广播* **receiver** = **new** MyReceiver2();  
 IntentFilter filter = **new** IntentFilter(**"heying.test2"**);  
 *//注册上* registerReceiver(**receiver**,filter);  
 }  
  
 @Override  
 **protected void** onDestroy() {  
 *//取消注册，广播接收者无法接收到广播* unregisterReceiver(**receiver**);  
 **super**.onDestroy();  
 }  
  
 */\*\*  
 \* 点击事件发送广播  
 \** ***@param view*** *\*/* **public void** send(View view){  
 **switch** (view.getId()) {  
 **case** R.id.***button1***:  
 *//发送广播* Intent intent = **new** Intent(**this**,MyReceiver.**class**);*//它回去AndroidManifest.xml文件中找对应的action / MyReceiver.class* sendBroadcast(intent);  
 **break**;  
 **case** R.id.***button2***:  
 intent = **new** Intent(**"heying.test2"**);  
 sendBroadcast(intent);  
 **break**;  
 }  
 }  
  
 **public void** toDemoActivity(View view){  
 Intent intent = **new** Intent(**this**,DemoActivity.**class**);  
 startActivity(intent);  
 finish();*//自动调用onDestroy()方法* }  
}

MainActivity.java

**package** com.hjs.receiverdemo;  
  
**import** android.content.Intent;  
**import** android.content.IntentFilter;  
**import** android.support.v7.app.AppCompatActivity;  
**import** android.os.Bundle;  
**import** android.view.View;  
  
**import** com.hjs.receiverdemo.receiver.MyReceiver;  
**import** com.hjs.receiverdemo.receiver.MyReceiver2;  
  
**public class** MainActivity **extends** AppCompatActivity {  
 **private** MyReceiver2 **receiver**;  
  
 @Override  
 **protected void** onCreate(Bundle savedInstanceState) {  
 **super**.onCreate(savedInstanceState);  
 setContentView(R.layout.***activity\_main***);  
  
 *//以代码方式注册广播* **receiver** = **new** MyReceiver2();  
 IntentFilter filter = **new** IntentFilter(**"heying.test2"**);  
 *//注册上* registerReceiver(**receiver**,filter);  
 }  
  
 @Override  
 **protected void** onDestroy() {  
 *//取消注册，广播接收者无法接收到广播* unregisterReceiver(**receiver**);  
 **super**.onDestroy();  
 }  
  
 */\*\*  
 \* 点击事件发送广播  
 \** ***@param view*** *\*/* **public void** send(View view){  
 **switch** (view.getId()) {  
 **case** R.id.***button1***:  
 *//发送广播* Intent intent = **new** Intent(**this**,MyReceiver.**class**);*//它回去AndroidManifest.xml文件中找对应的action / MyReceiver.class* sendBroadcast(intent);  
 **break**;  
 **case** R.id.***button2***:  
 intent = **new** Intent(**"heying.test2"**);  
 sendBroadcast(intent);  
 **break**;  
 }  
 }  
  
 **public void** toDemoActivity(View view){  
 Intent intent = **new** Intent(**this**,DemoActivity.**class**);  
 startActivity(intent);  
 finish();*//自动调用onDestroy()方法* }  
}

activity\_demo.xml

**package** com.hjs.receiverdemo.service;  
  
**import** android.app.Service;  
**import** android.content.BroadcastReceiver;  
**import** android.content.Context;  
**import** android.content.Intent;  
**import** android.content.IntentFilter;  
**import** android.os.Binder;  
**import** android.os.IBinder;  
**import** android.util.Log;  
  
**import** com.hjs.receiverdemo.Demo2Activity;  
  
*/\*耗时的工作(计算)让service来完成（startService方式---无返回结果），然后用广播来返回结果\*/***public class** ComputeService **extends** Service {  
 **private** TestReceiver **mTestReceiver**;  
  
 @Override  
 **public void** onCreate() {  
 *//注册广播* **mTestReceiver**=**new** TestReceiver();  
 IntentFilter filter = **new** IntentFilter(**"heying.testReceiver"**);  
 registerReceiver(**mTestReceiver**,filter);  
  
 **super**.onCreate();  
 }  
  
 *//（2）startService方式：只有接收来自Activity的请求，Service并不能返回值* @Override  
 **public int** onStartCommand(Intent intent, **int** flags, **int** startId) {  
 */\* double os = intent.getDoubleExtra("os",0);  
 double cp = intent.getDoubleExtra("cp",0);  
 double ds = intent.getDoubleExtra("ds",0);  
 double cn = intent.getDoubleExtra("cn",0);  
  
 double result = inServiceCal(os,cp,ds,cn);  
 Log.i("Test",result+"");  
  
 //传回到Demo2Activity，使用广播  
 Intent intentReceiver = new Intent("heying.computeReceiver");  
 intentReceiver.putExtra("result",result);  
 sendBroadcast(intentReceiver);\*/* **return super**.onStartCommand(intent, flags, startId);  
 }  
  
  
 *//（1）BinderService 方式：对于接收来自Activity的请求，Service有返回值（Binder）* @Override  
 **public** IBinder onBind(Intent intent) {  
 **return new** ComputeBinder();  
 }  
  
 **public class** ComputeBinder **extends** Binder{  
  
 *//外部类对象不能调用内部类对象的方法，所以必须把计算方法写到外面* **public double** calcAvg(**double**...scores){  
 **return** inServiceCal(scores);  
 }  
 }  
  
 */\*\*  
 \* 计算平均成绩  
 \** ***@param scores*** *可变数组，参数可以是0-N个  
 \** ***@return*** *\*/* **public double** inServiceCal(**double**...scores){  
 **int** count = scores.**length**;  
 **if** (count==0){  
 **return** 0;  
 }  
 **double** sum = 0;  
 **for** (**double** s:scores){  
 sum+=s;  
 }  
 **return** sum/count;  
  
 }  
  
 *//广播接收器，接收Demo2Activity发出的广播* **class** TestReceiver **extends** BroadcastReceiver{  
 @Override  
 **public void** onReceive(Context context, Intent intent) {  
 **double** os = intent.getDoubleExtra(**"os"**,0);  
 **double** cp = intent.getDoubleExtra(**"cp"**,0);  
 **double** ds = intent.getDoubleExtra(**"ds"**,0);  
 **double** cn = intent.getDoubleExtra(**"cn"**,0);  
  
 **double** result = inServiceCal(os,cp,ds,cn);  
  
 *//计算结果传回到Demo2Activity，使用广播* Intent intentReceiver = **new** Intent(**"heying.computeReceiver"**);  
 intentReceiver.putExtra(**"result"**,result);  
 sendBroadcast(intentReceiver);  
 }  
 }  
}

ComputeService.java

**package** com.hjs.receiverdemo.service;  
  
**import** android.app.Service;  
**import** android.content.BroadcastReceiver;  
**import** android.content.Context;  
**import** android.content.Intent;  
**import** android.content.IntentFilter;  
**import** android.os.Binder;  
**import** android.os.IBinder;  
**import** android.util.Log;  
  
**import** com.hjs.receiverdemo.Demo2Activity;  
  
*/\*耗时的工作(计算)让service来完成（startService方式---无返回结果），然后用广播来返回结果\*/***public class** ComputeService **extends** Service {  
 **private** TestReceiver **mTestReceiver**;  
  
 @Override  
 **public void** onCreate() {  
 *//注册广播* **mTestReceiver**=**new** TestReceiver();  
 IntentFilter filter = **new** IntentFilter(**"heying.testReceiver"**);  
 registerReceiver(**mTestReceiver**,filter);  
  
 **super**.onCreate();  
 }  
  
 *//（2）startService方式：只有接收来自Activity的请求，Service并不能返回值* @Override  
 **public int** onStartCommand(Intent intent, **int** flags, **int** startId) {  
 */\* double os = intent.getDoubleExtra("os",0);  
 double cp = intent.getDoubleExtra("cp",0);  
 double ds = intent.getDoubleExtra("ds",0);  
 double cn = intent.getDoubleExtra("cn",0);  
  
 double result = inServiceCal(os,cp,ds,cn);  
 Log.i("Test",result+"");  
  
 //传回到Demo2Activity，使用广播  
 Intent intentReceiver = new Intent("heying.computeReceiver");  
 intentReceiver.putExtra("result",result);  
 sendBroadcast(intentReceiver);\*/* **return super**.onStartCommand(intent, flags, startId);  
 }  
  
  
 *//（1）BinderService 方式：对于接收来自Activity的请求，Service有返回值（Binder）* @Override  
 **public** IBinder onBind(Intent intent) {  
 **return new** ComputeBinder();  
 }  
  
 **public class** ComputeBinder **extends** Binder{  
  
 *//外部类对象不能调用内部类对象的方法，所以必须把计算方法写到外面* **public double** calcAvg(**double**...scores){  
 **return** inServiceCal(scores);  
 }  
 }  
  
 */\*\*  
 \* 计算平均成绩  
 \** ***@param scores*** *可变数组，参数可以是0-N个  
 \** ***@return*** *\*/* **public double** inServiceCal(**double**...scores){  
 **int** count = scores.**length**;  
 **if** (count==0){  
 **return** 0;  
 }  
 **double** sum = 0;  
 **for** (**double** s:scores){  
 sum+=s;  
 }  
 **return** sum/count;  
  
 }  
  
 *//广播接收器，接收Demo2Activity发出的广播* **class** TestReceiver **extends** BroadcastReceiver{  
 @Override  
 **public void** onReceive(Context context, Intent intent) {  
 **double** os = intent.getDoubleExtra(**"os"**,0);  
 **double** cp = intent.getDoubleExtra(**"cp"**,0);  
 **double** ds = intent.getDoubleExtra(**"ds"**,0);  
 **double** cn = intent.getDoubleExtra(**"cn"**,0);  
  
 **double** result = inServiceCal(os,cp,ds,cn);  
  
 *//计算结果传回到Demo2Activity，使用广播* Intent intentReceiver = **new** Intent(**"heying.computeReceiver"**);  
 intentReceiver.putExtra(**"result"**,result);  
 sendBroadcast(intentReceiver);  
 }  
 }  
}

Demo2Activity.java

**package** com.hjs.receiverdemo;  
**import** android.app.Activity;  
**import** android.content.BroadcastReceiver;  
**import** android.content.Context;  
**import** android.content.Intent;  
**import** android.content.IntentFilter;  
**import** android.os.Bundle;  
**import** android.view.View;  
**import** android.widget.Button;  
**import** android.widget.EditText;  
**import** android.widget.TextView;  
  
**import** com.hjs.receiverdemo.service.ComputeService;  
  
**public class** Demo2Activity **extends** Activity {  
 **private** EditText **etOs**, **etCp**, **etDs**, **etCn**;  
 **private** TextView **tvResult**;  
 **private** Button **btnConn**;  
  
 **private** computeReceiver **mReceiver**;  
 **private** Intent **service**;  
  
 **private** ComputeService.ComputeBinder **binder** = **null**;  
  
  
 @Override  
 **protected void** onCreate(Bundle savedInstanceState) {  
 **super**.onCreate(savedInstanceState);  
  
 *//注册广播接收器* **mReceiver** = **new** computeReceiver();  
 IntentFilter filter = **new** IntentFilter(**"heying.computeReceiver"**);  
 registerReceiver(**mReceiver**,filter);  
  
 *//界面产生时就启动service* **service** = **new** Intent(**this**,ComputeService.**class**);  
 init();  
 setContentView(R.layout.***activity\_demo***);  
 }  
  
 @Override  
 **protected void** onDestroy() {  
 unregisterReceiver(**mReceiver**);*//取消注册* stopService(**service**);  
 **super**.onDestroy();  
 }  
  
 **private void** init() {  
 **etOs** = (EditText) findViewById(R.id.***etOs***);  
 **etCp** = (EditText) findViewById(R.id.***etCp***);  
 **etDs** = (EditText) findViewById(R.id.***etDs***);  
 **etCn** = (EditText) findViewById(R.id.***etCn***);  
 **tvResult** = (TextView) findViewById(R.id.***tvResult***);  
 **btnConn** = (Button) findViewById(R.id.***btnConn***);  
  
 **btnConn**.setOnClickListener(**new** View.OnClickListener() {  
 @Override  
 **public void** onClick(View v) {  
 */\*Intent service = new Intent(Demo2Activity.this,ComputeService.class);  
 double os = Double.parseDouble(etOs.getText().toString());  
 double cp = Double.parseDouble(etCp.getText().toString());  
 double ds = Double.parseDouble(etDs.getText().toString());  
 double cn = Double.parseDouble(etCn.getText().toString());  
 service.putExtra("os",os);  
 service.putExtra("cp",cp);  
 service.putExtra("ds",ds);  
 service.putExtra("cn",cn);  
 startService(service);\*/  
  
 //不用service传值，改为用广播receiver传值，让含有接收者的类接收* Intent receiver = **new** Intent(**"heying.testReceiver"**);  
 **double** os = Double.*parseDouble*(**etOs**.getText().toString());  
 **double** cp = Double.*parseDouble*(**etCp**.getText().toString());  
 **double** ds = Double.*parseDouble*(**etDs**.getText().toString());  
 **double** cn = Double.*parseDouble*(**etCn**.getText().toString());  
 *//Intent传值* receiver.putExtra(**"os"**,os);  
 receiver.putExtra(**"cp"**,cp);  
 receiver.putExtra(**"ds"**,ds);  
 receiver.putExtra(**"cn"**,cn);  
 *//发送广播* sendBroadcast(receiver);  
 }  
 });  
 }  
  
  
 *//广播接收器，接收ComputeService发出的广播* **class** computeReceiver **extends** BroadcastReceiver{  
  
 @Override  
 **public void** onReceive(Context context, Intent intent) {  
 **double** result = intent.getDoubleExtra(**"result"**,0);  
 **tvResult**.setText(**"您的平均成绩为："**+result);  
  
 }  
 }  
  
}