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Android SDK: Get Device Battery Information

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The battery API is quite impressive, between other things not only can you get a battery's voltage but you can also get the temperature, status and even an icon representing the current state of the battery.

In this post we'll make an app that display's all of the device's battery information in a text view whenever there is a change of state in the battery.

The App's Interface


Our interface will consists of a simple text view where we will show the battery's information and an image view where we will display the battery's current state using the image provided by the API to do this.

File: layout/main.xml

```
1. <?xml version="1.0" encoding="utf-8"?>
2. <LinearLayout xmlns:android="http://schemas.android.com/apk/res/a
3.     android:orientation="vertical"
4.     android:layout_width="fill_parent"
5.     android:layout_height="fill_parent"
6.     >
7.
8.     <TextView
9.         android:id="@+id/textViewBatteryInfo"
10.        android:layout_width="wrap_content"
11.        android:layout_height="wrap_content"
12.        android:text="Battery Info: " />
13.
14.     <ImageView
15.         android:id="@+id/imageViewBatteryState"
16.         android:layout_width="wrap_content"
17.         android:layout_height="wrap_content"
18.         android:src="@drawable/icon" />
19.
20. </LinearLayout>
```

This is how the app will look.

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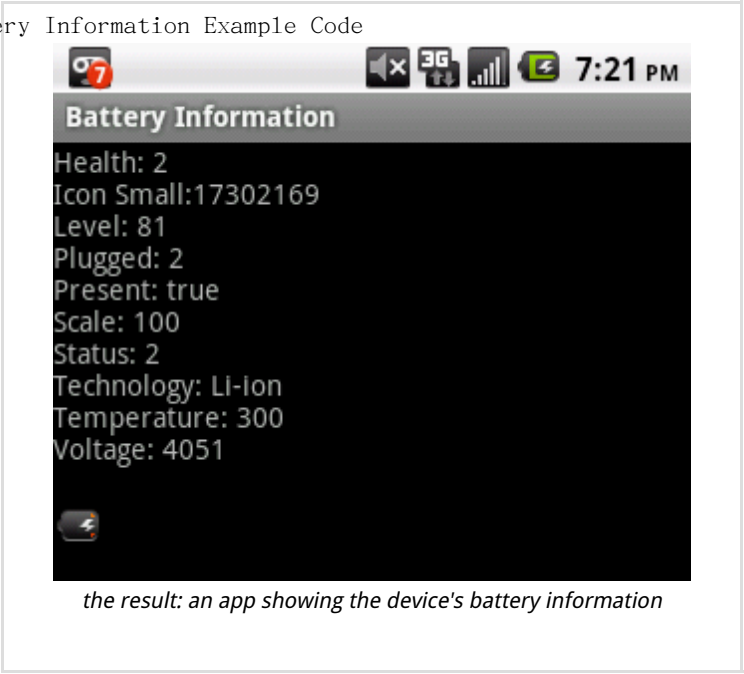
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Receiving Battery Updates

In order to receive the updated information from the battery we need to register a broadcast receiver and an intent filter. An intent filter tells the native battery app that our app is listening for its changes.

This is how we register a receiver with an intent filter:

```
1. this.registerReceiver(this.batteryInfoReceiver, new IntentFilter(
```

In the code above the receiver is an object we are going to make called batteryInfoReceiver, the intent filter is listening for the action battery changed.

Our receiver object is the following:

```
1. private BroadcastReceiver batteryInfoReceiver = new BroadcastRece
2.         @Override
3.         public void onReceive(Context context, Intent int
4.             // this is where we deal with the data sent fro
5.         }
6.     };
```

Battery Manager API

If you look at the battery manager api (http://developer.android.com/reference/android/os/BatteryManager.html#EXTRA_ICON_SMALL) yo see that it has many constants that start with the word EXTRA_, these extras is the data we are able to get from the battery and also the type (int, String etc).

Storing the battery info in variables with matching types

```
1. int health= intent.getIntExtra(BatteryManager.EXTRA_HE
2. int icon_small= intent.getIntExtra(BatteryManager.EXTF
3. int level= intent.getIntExtra(BatteryManager.EXTRA_LEV
4. int plugged= intent.getIntExtra(BatteryManager.EXTRA_F
5. boolean present= intent.getExtras().getBoolean(Batter
6. int scale= intent.getIntExtra(BatteryManager.EXTRA_SCA
7. int status= intent.getIntExtra(BatteryManager.EXTRA_ST
8. String technology= intent.getExtras().getString(Batter
9. int temperature= intent.getIntExtra(BatteryManager.EXT
10. int voltage= intent.getIntExtra(BatteryManager.EXTRA_V
```

We can easily display the data in the views, the icon_small variable holds a resource id with the battery's image:

Displaying data in text and image views

```

1. batteryInfo.setText(
2.     "Health: "+health+"\n"+
3.     "Icon Small:"+icon_small+"\n"+
4.     "Level: "+level+"\n"+
5.     "Plugged: "+plugged+"\n"+
6.     "Present: "+present+"\n"+
7.     "Scale: "+scale+"\n"+
8.     "Status: "+status+"\n"+
9.     "Technology: "+technology+"\n"+
10.    "Temperature: "+temperature+"\n"+
11.    "Voltage: "+voltage+"\n");
12. imageBatteryState.setImageResource(icon_small);

```

This is the full Java code.

BatteryInformation.java

```

1. package com.yoursite.batteryinformation;
2.
3. import android.app.Activity;
4. import android.content.BroadcastReceiver;
5. import android.content.Context;
6. import android.content.Intent;
7. import android.content.IntentFilter;
8. import android.os.BatteryManager;
9. import android.os.Bundle;
10. import android.widget.ImageView;
11. import android.widget.TextView;
12.
13.
14. public class BatteryInformation extends Activity {
15.     private TextView batteryInfo;
16.     private ImageView imageBatteryState;
17.     /** Called when the activity is first created. */
18.     @Override
19.     public void onCreate(Bundle savedInstanceState) {
20.         super.onCreate(savedInstanceState);
21.         setContentView(R.layout.main);
22.         batteryInfo=(TextView)findViewById(R.id.textVie
23.         imageBatteryState=(ImageView)findViewById(R.id.
24.
25.         this.registerReceiver(this.batteryInfoReceiver,
26.     }
27.
28.     private BroadcastReceiver batteryInfoReceiver = new
29.         @Override
30.         public void onReceive(Context context,
31.
32.             int health= intent.getIntExtra
33.             int icon_small= intent.getIntE
34.             int level= intent.getIntExtra(
35.             int plugged= intent.getIntExtr
36.             boolean present= intent.getExt
37.             int scale= intent.getIntExtra(
38.             int status= intent.getIntExtra
39.             String technology= intent.getE
40.             int temperature= intent.getInt
41.             int voltage= intent.getIntExtr
42.
43.
44.         batteryInfo.setText(
45.             "Health: "+heal
46.             "Icon Small:"+i
47.             "Level: "+level
48.             "Plugged: "+pli
49.             "Present: "+pre
50.             "Scale: "+scale
51.             "Status: "+stat
52.             "Technology: "+
53.             "Temperature: "
54.             "Voltage: "+vol
55.         imageBatteryState.setImageResource
56.     }
57. };
58.
59.
60. }

```

Battery Permissions

No special permissions are needed in the manifest file.

No related posts.