

How to change screen brightness programmatically

Posted By Android Guru on May 12, 2013 | 4 comments

This post will explain you how to change the current system brightness with a seek bar on Android devices. The application which we are going to develop will work only on real devices, because it is impossible to see the brightness changes on the emulator.

One thing you must know is that Android system brightness value is applied to the screen's backlight only when the screen turns on. This means that only after a device boots up or awaking the phone from a sleeping state will make the screen as bright as the value defined by the System.SCREEN_BRIGHTNESS variable. Consequently, changing only that variable won't be enough to preview the brightness level as the brightness value need to be set for the window.

That's why it's necessary to access the current window brightness by setting the screenBrightness property located at the LayoutParams object that is obtained from the current window. Then, we use the same value to set the system brightness and window brightness, so it can be previewed before its set.

Let us create simple application to demonstrate how we can change brightness of the system.

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-> New >> Android Project with project name AndroidBrightnessActivity

Select target android device version [I chose version 2.2]

Enter package name – 'com.prgguru.example'

Click finish

Code Listings

Layout XML:

Open layout XML present under /res/layout folder and replace the XML with the below one.



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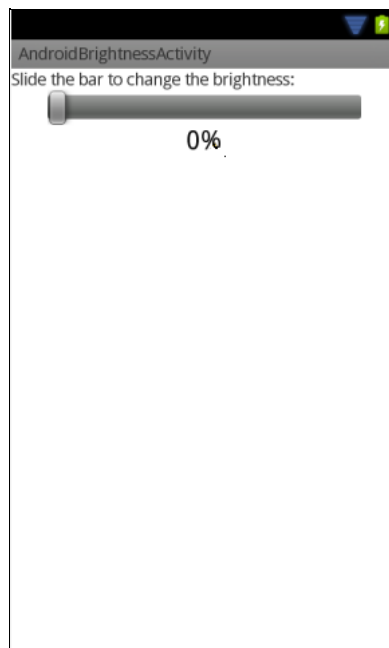
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```

1  <?xml version="1.0" encoding="utf-8"?>
2  <LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
3      android:layout_width="fill_parent"
4      android:layout_height="fill_parent"
5      android:orientation="vertical" >
6
7      <TextView
8          android:layout_width="fill_parent"
9          android:layout_height="wrap_content"
10         android:text="Slide the bar to change the brightness:" />
11
12         <SeekBar
13             android:id="@+id/brightbar"
14             android:layout_width="fill_parent"
15             android:layout_height="wrap_content"
16             android:layout_marginLeft="30dip"
17             android:layout_marginRight="30dip" >
18         </SeekBar>
19
20     </LinearLayout>

```

Application layout:



AndroidBrightnesActivity.java:

Open AndroidBrightnesActivity and replace the default code with below one. I hope the java code is self explanatory since each line is added with comments.

```

1  package com.prgguru.example;
2
3  import android.app.Activity;
4  import android.content.ContentResolver;
5  import android.os.Bundle;
6  import android.provider.Settings.SettingNotFoundException;
7  import android.provider.Settings.System;
8  import android.util.Log;
9  import android.view.Window;
10 import android.view.WindowManager.LayoutParams;
11 import android.widget.SeekBar;
12 import android.widget.SeekBar.OnSeekBarChangeListener;
13 import android.widget.TextView;
14
15 public class AndroidBrightnesActivity extends Activity { //UI objects//
16     //Seek bar object
17     private SeekBar brightbar;
18
19     //Variable to store brightness value
20     private int brightness;
21     //Content resolver used as a handle to the system's settings
22     private ContentResolver cResolver;
23     //Window object, that will store a reference to the current window
24     private Window window;
25
26     TextView txtPerc;
27     /** Called when the activity is first created. */
28     @Override
29     public void onCreate(Bundle savedInstanceState)
30     {

```

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```

31 super.onCreate(savedInstanceState);
32 setContentView(R.layout.main);
33
34 //Instantiate seekbar object
35 brightbar = (SeekBar) findViewById(R.id.brightbar);
36
37 txtPerc = (TextView) findViewById(R.id.txtPercentage);
38
39 //Get the content resolver
40 cResolver = getContentResolver();
41
42 //Get the current window
43 window = getWindow();
44
45 //Set the seekbar range between 0 and 255
46 brightbar.setMax(255);
47 //Set the seek bar progress to 1
48 brightbar.setKeyProgressIncrement(1);
49
50 try
51 {
52     //Get the current system brightness
53     brightness = System.getInt(cResolver, System.SCREEN_BRIGHTNESS);
54 }
55 catch (SettingNotFoundException e)
56 {
57     //Throw an error case it couldn't be retrieved
58     Log.e("Error", "Cannot access system brightness");
59     e.printStackTrace();
60 }
61
62 //Set the progress of the seek bar based on the system's brightness
63 brightbar.setProgress(brightness);
64
65 //Register OnSeekBarChangeListener, so it can actually change values
66 brightbar.setOnSeekBarChangeListener(new OnSeekBarChangeListener()
67 {
68     public void onStopTrackingTouch(SeekBar seekBar)
69     {
70         //Set the system brightness using the brightness variable value
71         System.putInt(cResolver, System.SCREEN_BRIGHTNESS, brightness);
72         //Get the current window attributes
73         LayoutParams layoutpars = window.getAttributes();
74         //Set the brightness of this window
75         layoutpars.screenBrightness = brightness / (float)255;
76         //Apply attribute changes to this window
77         window.setAttributes(layoutpars);
78     }
79
80     public void onStartTrackingTouch(SeekBar seekBar)
81     {
82         //Nothing handled here
83     }
84
85     public void onProgressChanged(SeekBar seekBar, int progress, boolean
86     {
87         //Set the minimal brightness level
88         //if seek bar is 20 or any value below
89         if(progress<=20)
90         {
91             //Set the brightness to 20
92             brightness=20;
93         }
94         else //brightness is greater than 20
95         {
96             //Set brightness variable based on the progress bar
97             brightness = progress;
98         }
99         //Calculate the brightness percentage
100         float perc = (brightness /(float)255)*100;
101         //Set the brightness percentage
102         txtPerc.setText((int)perc + " %");
103     }
104 });
105 }

```

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Add WRITE_SETTINGS uses-permission in AndroidManifest.xml

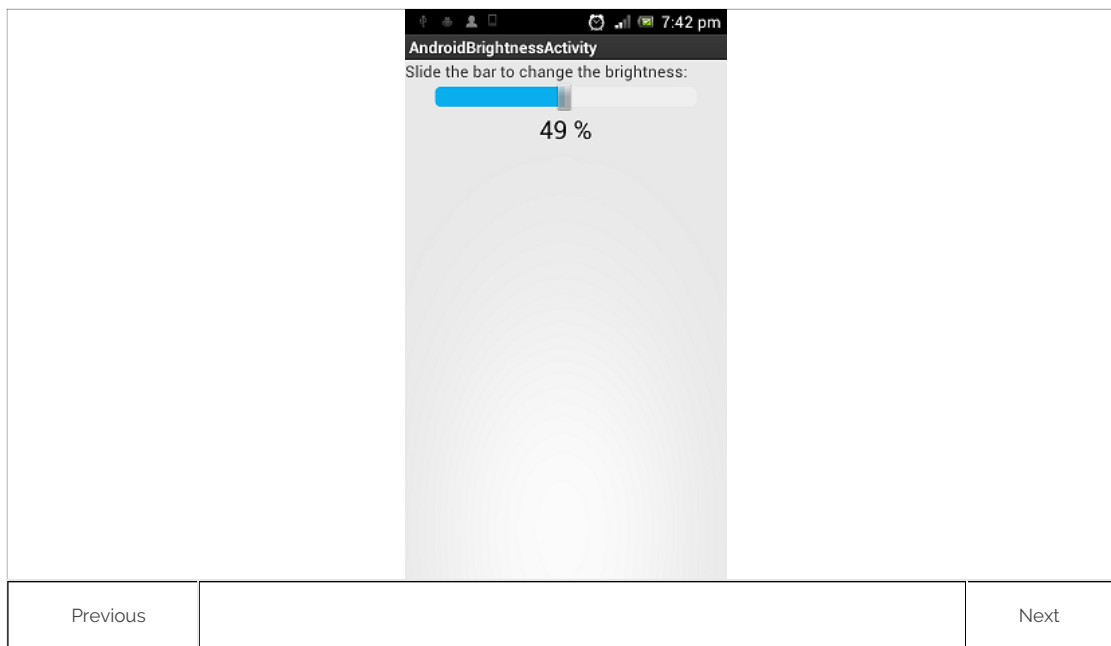
```
1 | <uses-permission android:name="android.permission.WRITE_SETTINGS"></uses-permissi
```

Demo

Let us test the application:

Run click on the project >> Run as >> Android application

You could see following screens:



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Download Source Code

Entire project is zipped and is available for download. Unzip the downloaded project and to import the project into eclipse, launch eclipse >> File >> Import. >> Choose downloaded project([How to import android project in eclipse](#)). If you just want to run the application in your mobile and see the output but don't want to hit your head with source code, download application(apk) file and install it in your mobile device.

Download Source Code

Download Application(apk)

*apk in Android is the installation file similar to exe in windows.

I hope you enjoyed the post!! 😊

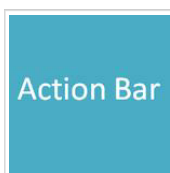
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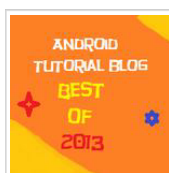
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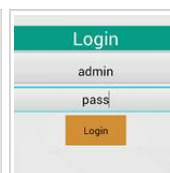
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