

# **[Tutorial] LG Web\_Handling Key Repeat Using JavaScript Events**

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Version 1.0 – October 2011

**LGDEV-056**

Home Entertainment Company  
LG Electronics, Inc.

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# About This Document

## Revision History

Document Version	Date	Comment
1.0	October 12, 2011	Initial Version

## Purpose

This document describes how JavaScript events are occurred when a key is pressed from remote control unit and to use these events in application.

## Reference Documents

Refer to the following documents:  
- LG Web Application Development Guide

## Conventions

### Codes

Source code and examples are indicated in the `grey Courier New` font.

### Note, Caution

Note and caution are used to emphasize information.  
The following samples describe when each is used.

---

**Note**

Contains information about something that is helpful to you.

---

---

**Caution**

Contains important information about something that you should know.

---

## Abbreviation

The following table defines the abbreviations used in this document.

Abbreviation	Description
API	Application Programming Interface

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# 1 Introduction

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This chapter provides an overview of this application.

## 1.1 Overview

## 1.1 Overview

This application shows how JavaScript events are occurred when a key is pressed from remote control unit and to use these events.

LG Smart TV SDK | Web Open API Tutorial

Smart TV

File : /commonjavascriptapi/app/keyrepeat.html

Web Open API List

Methods	Properties	Events

View

Source

Interval Average

UP

DOWN

LEFT

RIGHT

Interval Average

REWIND

FAST FORWARD

PAGE UP

PAGE DOWN

Press and hold UP-key to test key repeat.

BACK

EXIT

RESET

PREVIOUS

NEXT

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object

method

property

event

[Figure 1] Key Repeat Application

### Note

Log is used for checking the sequence of Web Open API; this will not be covered in the sample code description.



## 2 Creating Application

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This chapter describes how JavaScript events are occurred when a key is pressed from remote control unit and to use these events.

2.1 Initializing the Page

2.2 Handling Events

2.3 Source Code of keyrepeat.html



## 2.1 Initializing the Page

Use the **initPage** function to set the basic functions of the application.

- 04: Record the last visited page when running the application.
- 07: Initialize the page.
- 08: Get the source code of the page using the XMLHttpRequest object.
- 09: Set the page ID.
- 10: Initialize the Log function.
- 13-16: Add an event handler which will be executed when the corresponding button is pressed.
- 19-20: Add event handlers for key inputs (keydown, keyup) from remote control unit.
- 23: Set the background color of key to test.
- 24: Display description for test on screen.

### Sample Code

```

01 : function initPage()
02 : {
03 :     //save page as last visited page
04 :     setLastVisitPage();
05 :
06 :     //common initialize function
07 :     commonInitialize();
08 :     requestSourceCode();
09 :     setPageID("Key Repeat");
10 :     jsLog.initLG();
11 :
12 :     //add onclick event handler
13 :     addEventHandler(document.getElementById("btn_back"),"click",onClickListener);
14 :     addEventHandler(document.getElementById("btn_red"),"click",onClickListener);
15 :     addEventHandler(document.getElementById("btn_green"),"click",onClickListener);
16 :     addEventHandler(document.getElementById("btn_yellow"),"click",onClickListener);
17 :
18 :     //add key repeat test event handler
19 :     addEventHandler(document.body, "keydown", onKeyDownHandler);
20 :     addEventHandler(document.body, "keyup", onKeyUpHandler);
21 :
22 :     //select current position
23 :     document.getElementById(keysToTest[currentTestPosition][0]).className =
"eachTestGuide orangeBgColor";
24 :     setInnerTextById("keyrepeat_test_description", "Press and hold " +
keysToTest[currentTestPosition][3] + "-key to test key repeat.");
25 : }

```

## 2.2 Handling Events

The following code shows event handler functions which are added from `initPage()` function.

02-16: Declare and initialize `keyToTest`, `currentTestPosition`, `maxRepeatCount`, `maxGaugeWidth`, `repeatCount`, `startTime`, and `propressStatus`.

### onKeyDownHandler

This event handler called when key down is occurred.

20: Declare `userInput` and save key code of the event.

23: If `userInput` is same with setup key and the repeat number is not bigger than the maximum value, execute the following codes.

25-30: If `repeatCount` is 0, declare `currentDate` and initialize `startTime` to current time.

31: Increase `repeatCount` by 1.

32: Increase gauge bar by number of `repeatCount`.

34-40: If number of key repeat is bigger than `maxRepeatCount`, declare `elapsedTime`, count the key repeat time, and display it on screen.

### onKeyUpHandler

This event handler is called when key up is occurred.

46: Declare `userInput` and save key code of the event.

49-52: If inputted key value is same with setup key value and the repeat number does not exceed the maximum number, change the color of corresponding gauge bar.

### resetCurrentTest

Execute reset function.

57-59: Initialize `repeatCount`, `startTime`, and `progressStatus`.

60: Delete the child nodes of `currentTestPosition`.

61-63: Initialize the bar length of `currentTestPosition` and display the corresponding text on screen.

### changeTestPosition

Change key to test.

68-70: Initialize `repeatCount`, `startTime`, and `progressStatus`.

71: Set class to unselect the selected key.

73-78: To go to previous key, decrease the value of `currentTestPosition` by 1 and move the position of the key.

If the value of `currentTestPosition` gets smaller than 0, move the position to the last key position according to the size of `keysToTest`.

80-85: To go to the next key, increase the value of `currentTestPosition` by 1 and move the key position. If the value of `currentTestPosition` gets bigger than `keysToTest`, set to 0 and move to the first key position.

87-88: Changing the background color of class to orange to show that the testing key is changed. Also, display description text on screen.

### Sample Code

```
01 : //[0] : title id, [1] : gauge id, [2] : key code, [3] : key name
02 : var keysToTest = [ ["up_title", "up_progress", 38, "UP"]
03 :                   , ["down_title", "down_progress", 40, "DOWN"]
04 :                   , ["left_title", "left_progress", 37, "LEFT"]
05 :                   , ["right_title", "right_progress", 39, "RIGHT"]
06 :                   , ["rewind_title", "rewind_progress", 412, "REWIND"]
07 :                   , ["fast_forward_title", "fast_forward_progress", 417, "FAST_FORWARD"]
08 :                   , ["page_up_title", "page_up_progress", 33, "PAGE_UP"]
09 :                   , ["page_down_title", "page_down_progress", 34,
    "PAGE_DOWN"] ];
10 :
11 : var currentTestPosition = 0;
12 : var maxRepeatCount = 40;
13 : var maxGaugeWidth = 273;
14 : var repeatCount = 0;
15 : var startTime = 0;
16 : var progressStatus = "";
17 :
18 : function onKeyDownHandler(event)
```

```

19 : {
20 :   var userInput = getKeyValue(event);
21 :   jsLog.lgevent('javascript: Key Event Handling : KeyDown, Key : ' +
    getKeyName(event));
22 :
23 :   if(userInput==keysToTest[currentTestPosition][2]&&repeatCount<maxRepeatCount)
24 :   {
25 :       if(repeatCount == 0)
26 :       {
27 :           var currentDate = new Date();
28 :           startTime = currentDate.getTime();
29 :           setInnerTextById(keysToTest[currentTestPosition][1], "");
30 :       }
31 :       repeatCount++;
32 :       document.getElementById(keysToTest[currentTestPosition][1]).style.width =
    Math.floor((maxGaugeWidth * (repeatCount / maxRepeatCount))) + "px";
33 :
34 :       if(repeatCount >= maxRepeatCount)
35 :       {
36 :           var currentDate = new Date();
37 :           var elapsedTime = currentDate.getTime() - startTime;
38 :           setInnerTextById(keysToTest[currentTestPosition][1], (elapsedTime
    /
    repeatCount) + "ms");
39 :           setInnerTextById("keyrepeat_test_description", "Press YELLOW-Key
    to
    test next key.");
40 :       }
41 :   }
42 : }
43 :
44 : function onKeyUpHandler(event)
45 : {
46 :   var userInput = getKeyValue(event);
47 :   jsLog.lgevent('javascript: Key Event Handling : KeyUp, Key : ' +
    getKeyName(event));
48 :
49 :   if(userInput==keysToTest[currentTestPosition][2]&&repeatCount<maxRepeatCount)
50 :   {
51 :       document.getElementById(keysToTest[currentTestPosition][1]).style.backgroundCol
    or="#FF0000";
52 :   }
53 : }
54 :
55 : function resetCurrentTest()
56 : {
57 :   repeatCount = 0;
58 :   startTime = 0;
59 :   progressStatus = "";
60 :   clearChildNodes(document.getElementById(keysToTest[currentTestPosition][1]));
61 :   document.getElementById(keysToTest[currentTestPosition][1]).style.width="0px";
62 :   document.getElementById(keysToTest[currentTestPosition][1]).style.backgroundCol
    or = "#008000";
63 :   setInnerTextById("keyrepeat_test_description", "Press and hold " +
    keysToTest[currentTestPosition][3] + "-key to test key repeat.");
64 : }
65 :
66 : function changeTestPosition(direction)
67 : {
68 :   repeatCount = 0;
69 :   startTime = 0;
70 :   progressStatus = "";
71 :   document.getElementById(keysToTest[currentTestPosition][0]).className="eachTest
    Guide";
72 :
73 :   if(direction == "PREVIOUS"){
74 :       currentTestPosition--;
75 :       if(currentTestPosition < 0){
76 :           currentTestPosition = keysToTest.length - 1;
77 :       }
78 :   }
79 :
80 :   if(direction == "NEXT"){

```

```
81 :         currentTestPosition++;
82 :         if(currentTestPosition >= keysToTest.length){
83 :             currentTestPosition = 0;
84 :         }
85 :     }
86 :
87 :     document.getElementById(keysToTest[currentTestPosition][0]).className =
"eachTestGuide orangeBgColor";
88 :     setInnerTextById("keyrepeat_test_description", "Press and hold " +
keysToTest[currentTestPosition][3] + "-key to test key repeat.");
89 : }
```

## 2.3 Source Code of keyrepeat.html

Source code of keyrepeat.html is as follows:

```
<!DOCTYPE html PUBLIC "-//W3C//DTD HTML 4.01 Transitional//EN"
"http://www.w3.org/TR/html4/loose.dtd">
<html>
<head>
<meta http-equiv="Content-Type" content="text/html; charset=UTF-8">
<title>Key Repeat Test Page</title>
<link rel="stylesheet" href="../../css/style.css">
<script language="javascript" src="../../js/keycode.js"></script>
<script language="javascript" src="../../js/common.js"></script>
<script language="javascript" src="../../js/menu.js"></script>

<script type="text/javascript" src="../../blackbirdjs/blackbird.js"></script>
<link type="text/css" rel="Stylesheet" href="../../blackbirdjs/blackbird.css" />

<script>

    //initialize page
    function initPage()
    {
        //save page as last visited page
        setLastVisitPage();

        //common initialize function
        commonInitialize();
        requestSourceCode();
        setPageID("Key Repeat");
        jsLog.initLG();

        //add onclick event handler
        addEventHandler(document.getElementById("btn_back"), "click",
onClickHandler);
        addEventHandler(document.getElementById("btn_red"), "click",
onClickHandler);
        addEventHandler(document.getElementById("btn_green"), "click",
onClickHandler);
        addEventHandler(document.getElementById("btn_yellow"), "click",
onClickHandler);

        //add key repeat test event handler
        addEventHandler(document.body, "keydown", onKeyDownHandler);
        addEventHandler(document.body, "keyup", onKeyUpHandler);

        //select current position
        document.getElementById(keysToTest[currentTestPosition][0]).className =
"eachTestGuide orangeBgColor";
        setInnerTextById("keyrepeat_test_description", "Press and hold " +
keysToTest[currentTestPosition][3] + "-key to test key repeat.");
    }

    function onUserInput(userInput)
    {
        switch(userInput)
        {
            case VK_BACK :
window.location.replace("../menu_commonjavascriptapi.html"); break;
            case VK_RED : case 82 : resetCurrentTest(); break;
            case VK_GREEN : case 71 : changeTestPosition("PREVIOUS"); break;
            case VK_YELLOW : case 89 : changeTestPosition("NEXT"); break;
        }
    }

    //array of keys to test
    //[0] : title id, [1] : gauge id, [2] : key code, [3] : key name
    var keysToTest = [ ["up_title", "up_progress", 38, "UP"]
, ["down_title", "down_progress", 40, "DOWN"]
```

```

        , ["left_title", "left_progress", 37, "LEFT"]
        , ["right_title", "right_progress", 39, "RIGHT"]
        , ["rewind_title", "rewind_progress", 412, "REWIND"]
        , ["fast_forward_title", "fast_forward_progress",
417, "FAST_FORWARD"]
        , ["page_up_title", "page_up_progress", 33,
"PAGE_UP"]
        , ["page_down_title", "page_down_progress", 34,
"PAGE_DOWN"]];

    var currentTestPosition = 0;
    var maxRepeatCount = 40;
    var maxGaugeWidth = 273;
    var repeatCount = 0;
    var startTime = 0;
    var progressStatus = "";

    function onKeyDownHandler(event)
    {
        var userInput = getCharCode(event);
        jsLog.lgevent('javascript: Key Event Handling : KeyDown, Key : ' +
getKeyName(event));

        if(userInput == keysToTest[currentTestPosition][2] && repeatCount <
maxRepeatCount){
            if(repeatCount == 0){
                var currentDate = new Date();
                startTime = currentDate.getTime();
                setInnerTextById(keysToTest[currentTestPosition][1], "");
            }
            repeatCount++;

            document.getElementById(keysToTest[currentTestPosition][1]).style.width =
Math.floor((maxGaugeWidth * (repeatCount / maxRepeatCount))) + "px";
            if(repeatCount >= maxRepeatCount){
                var currentDate = new Date();
                var elapsedTime = currentDate.getTime() - startTime;
                setInnerTextById(keysToTest[currentTestPosition][1],
(elapsedTime / repeatCount) + "ms");
                setInnerTextById("keyrepeat_test_description", "Press YELLOW-
Key to test next key.");
            }
        }

        function onKeyUpHandler(event)
        {
            var userInput = getCharCode(event);
            jsLog.lgevent('javascript: Key Event Handling : KeyUp, Key : ' +
getKeyName(event));

            if(userInput == keysToTest[currentTestPosition][2] && repeatCount <
maxRepeatCount){

                document.getElementById(keysToTest[currentTestPosition][1]).style.backgroundColor
= "#FF0000";
            }
        }
        //reset current key test status
        function resetCurrentTest()
        {
            repeatCount = 0;
            startTime = 0;
            progressStatus = "";

            clearChildNodes(document.getElementById(keysToTest[currentTestPosition][1]));
            document.getElementById(keysToTest[currentTestPosition][1]).style.width =
"0px";

            document.getElementById(keysToTest[currentTestPosition][1]).style.backgroundColor
= "#008000";

```

```

        setInnerTextById("keyrepeat_test_description", "Press and hold " +
keysToTest[currentTestPosition][3] + "-key to test key repeat.");
    }
    //change test position
    function changeTestPosition(direction)
    {
        repeatCount = 0;
        startTime = 0;
        progressStatus = "";
        document.getElementById(keysToTest[currentTestPosition][0]).className =
"eachTestGuide";

        if(direction == "PREVIOUS"){
            currentTestPosition--;
            if(currentTestPosition < 0){
                currentTestPosition = keysToTest.length - 1;
            }
        }
        if(direction == "NEXT"){
            currentTestPosition++;
            if(currentTestPosition >= keysToTest.length){
                currentTestPosition = 0;
            }
        }
        document.getElementById(keysToTest[currentTestPosition][0]).className =
"eachTestGuide orangeBgColor";
        setInnerTextById("keyrepeat_test_description", "Press and hold " +
keysToTest[currentTestPosition][3] + "-key to test key repeat.");
    }

    function getKeyName(event)
    {
        var key = getCharCode(event);
        for(var i = 0 ; i < keysToTest.length ; i++)
        {
            if(keysToTest[i][2] == key)
            {
                return keysToTest[i][3];
            }
        }

        return "-";
    }
}

</script>
</head>
<body ondragstart='return false' onselectstart='return false'
onload="javascript:initPage();">

<!-- title -->
<div class='SuiteTitle' >LG Smart TV SDK | Web Open API Tutorial</div>

<!-- navigation -->
<div class='SuiteNavigation'>
    <div style="float:left;">File : /commonjavascriptapi/app/keyrepeat.html</div>
</div>
<div class='SuiteTitleLine'> </div>

<!-- test contents -->
<div id='ContentArea' class='ContentArea' >
    <div class='ApiListTitleArea'>Web Open API List</div>
    <div class='ApiListArea'>
        <div class='MethodTitleArea'>
            Methods
            <div class='MethodListArea'>

        </div>
    </div>
    <div class='PropertyTitleArea'>
        Properties
        <div class='PropertyListArea'>

```

```

        </div>
    </div>
    <div class='EventTitleArea'>
        Events
        <div class='EventListArea'>

        </div>
    </div>
</div>
<div class='ViewTitleArea'>
    <div id='tabViewArea' class='SelectedViewArea' style='float:left;'
onclick="showView();">View</div>
    <div id='tabCodeArea' class='UnselectedViewArea' style='float:right;'
onclick='showCode();'>Source</div>
</div>
<div id='view'>
    <div class = 'ViewArea'>
        <table width="880px" border="0" cellpadding="0" cellspacing="0">
            <tr height="60px">
                <td width="150px"></td>
                <td width="275px"><div class='eachTestGuide'>Interval
Average</div></td>
                <td width="275px"></td>
                <td width="275px"><div class='eachTestGuide'>Interval
Average</div></td>
            </tr>
            <tr height="60px">
                <td width="150px" align="right"><div class='eachTestGuide'
id="up_title">UP</div>&nbsp;</td>
                <td width="275px" align="left"><div class='gaugeBorder'><div
class='gaugeBar' id="up_progress"></div></div></td>
                <td width="275px" align="right"><div class='eachTestGuide'
id="rewind_title">REWIND</div>&nbsp;</td>
                <td width="275px" align="left"><div class='gaugeBorder'><div
class='gaugeBar' id="rewind_progress"></div></div></td>
            </tr>
            <tr height="60px">
                <td width="150px" align="right"><div class='eachTestGuide'
id="down_title">DOWN</div>&nbsp;</td>
                <td width="275px" align="left"><div class='gaugeBorder'><div
class='gaugeBar' id="down_progress"></div></div></td>
                <td width="275px" align="right"><div class='eachTestGuide'
id="fast_forward_title">FAST FORWARD</div>&nbsp;</td>
                <td width="275px" align="left"><div class='gaugeBorder'><div
class='gaugeBar' id="fast_forward_progress"></div></div></td>
            </tr>
            <tr height="60px">
                <td width="150px" align="right"><div class='eachTestGuide'
id="left_title">LEFT</div>&nbsp;</td>
                <td width="275px" align="left"><div class='gaugeBorder'><div
class='gaugeBar' id="left_progress"></div></div></td>
                <td width="275px" align="right"><div class='eachTestGuide'
id="page_up_title">PAGE UP</div>&nbsp;</td>
                <td width="275px" align="left"><div class='gaugeBorder'><div
class='gaugeBar' id="page_up_progress"></div></div></td>
            </tr>
            <tr height="60px">
                <td width="150px" align="right"><div class='eachTestGuide'
id="right_title">RIGHT</div>&nbsp;</td>
                <td width="275px" align="left"><div class='gaugeBorder'><div
class='gaugeBar' id="right_progress"></div></div></td>
                <td width="275px" align="right"><div class='eachTestGuide'
id="page_down_title">PAGE DOWN</div>&nbsp;</td>
                <td width="275px" align="left"><div class='gaugeBorder'><div
class='gaugeBar' id="page_down_progress"></div></div></td>
            </tr>
        </table>
    </div>
</div>
<div scrolling="AUTO" style="visibility: hidden" id='codeview'>

```



```

        <textarea class="SourceCodeArea" value="" id='sourcecode'></textarea>
    </div>

</div>

<!-- description -->
<div id='keyrepeat_test_description' class='SuiteDescription' style="position:
absolute; left: 40px; top:630px"></div>

<!-- button and copyright -->
<div class='SuiteButtonArea'>
    <!-- back key description -->
    <div id='btn_back' class='buttonDescription '>BACK</div>

    <!-- exit key description -->
    <div id='btn_exit' class='buttonDescription'>EXIT</div>

    <!-- red key description -->
    <div id='btn_red' class='buttonDescription redColor'>RESET</div>

    <!-- green key description -->
    <div id='btn_green' class='buttonDescription greenColor'>PREVIOUS</div>

    <!-- yellow key description -->
    <div id='btn_yellow' class='buttonDescription yellowColor'>NEXT</div>

    <!-- copyright -->
    <div class='copyright'>Copyright LG Electronics</div>
</div>

</body>
</html>

```