

# DHTML: Modello degli Eventi

## Sommario

- Introduzione
- Evento onclick
- Evento onload
- Gestione errori con onerror
- Gestione mouse con l'evento onmousemove
- Elaborazione di form con onfocus e onblur
- Eventi onsubmit e onreset
- Altri eventi DHTML

## Obiettivi

- Capire la nozione di evento
- Manipolare eventi
- Usare l'oggetto event per gestire le azioni utente
- Riconoscere e gestire gli eventi principali

## Introduzione

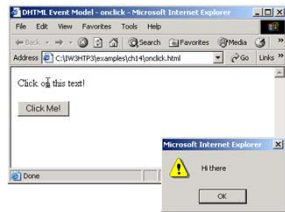
- Modello degli Eventi
  - Sono script che rispondono alle azioni svolte dagli utenti
  - Permettono la dinamicità dei contenuti
  - Rendono più intuitive le interfacce

## Evento onclick

- onclick
  - È invocato quando l'utente fa click con il mouse su qualche elemento

```
1 <?xml version = "1.0" ?>
2 <!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN"
3 "http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">
4
5 <!-- Fig 14.1: onclick.html -->
6 <!-- Demonstrating the onclick event -->
7
8 <html xmlns = "http://www.w3.org/1999/xhtml">
9 <head>
10 <title>DHTML Event Model - onclick</title>
11
12 <!-- The for attribute declares the script for -->
13 <!-- a certain element, and the event for a -->
14 <!-- certain event. -->
15 <script type = "text/javascript" for = "para"
16 event = "onclick">
17 <!--
18 alert("Hi there!");
19 // -->
20 </script>
21 </head>
22
23 <body>
24
```

```
25 <!-- The id attribute gives a unique identifier -->
26 <p id = "para">Click on this text!</p>
27
28 <!-- You can specify event handlers inline -->
29 <input type = "button" value = "Click Me!"
30 onclick = "alert('Hi there!');" />
31
32 </body>
33 </html>
```



## Evento onload

- onload
  - È attivato quando è completato il caricamento di un elemento
  - Usato per dare inizio a uno script dopo che la pagina o un elemento sono stati caricati dal client

```

1 <?xml version = "1.0" ?>
2 <!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Strict//EN"
3   "http://www.w3.org/TR/xhtml1/DTD/xhtml1-strict.dtd">
4
5 <!-- Fig. 14.2: onload.html -->
6 <!-- Demonstrating the onload event -->
7
8 <html xmlns = "http://www.w3.org/1999/xhtml">
9   <head>
10    <title>DHTML Event Model - onload</title>
11    <script type = "text/javascript">
12      <!--
13      var seconds = 0;
14
15      function startTimer ()
16        // 1000 milliseconds = 1 second
17        window.setInterval ("updateTime()", 1000);
18      }
19
20      function updateTime ()
21        seconds++;
22        soFar.innerHTML = seconds;
23      }
24      // -->
25    </script>

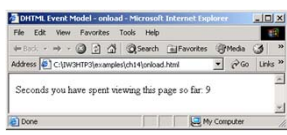
```

DHTML: Modello degli Eventi 9

```

26 </head>
27
28 <body onload = "startTimer()">
29
30   <p>Seconds you have spent viewing this page so far:</p>
31   <strong id = "soFar">0</strong></p>
32
33 </body>
34 </html>

```



DHTML: Modello degli Eventi 10

## Gestione degli errori con onerror

- onerror
  - Esegue una porzione di codice specializzata nella gestione degli errori

DHTML: Modello degli Eventi 11

```

1 <?xml version = "1.0" ?>
2 <!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN"
3   "http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">
4
5 <!-- Fig 14.3: onerror.html -->
6 <!-- Demonstrating the onerror event -->
7
8 <html xmlns = "http://www.w3.org/1999/xhtml">
9   <head>
10    <title>DHTML Event Model - onerror</title>
11    <script type = "text/javascript">
12      <!--
13      // Specify that if an onerror event is triggered
14      // in the window function handleError should execute
15      window.onerror = handleError;
16
17      function doThis ()
18        alert("hi"); // alert misspelled, creates an error
19      }
20
21      // The ONERROR event passes three values to the
22      // function: the name of the error, the url of
23      // the file, and the line number.
24      function handleError( errType, errURL, errLineNum )
25      {


```

DHTML: Modello degli Eventi 12

```

26 // writes to the status bar at the
27 // bottom of the window.
28 window.status = "Error: " + errType + " on line " +
29 errLineNum;
30
31 // Returning a value of true cancels the
32 // browser's reaction.
33 return true;
34 }
35 // -->
36 </script>
37 </head>
38
39 <body>
40
41 <input id = "mybutton" type = "button" value = "Click Me!"
42 onclick = "doThis()" />
43
44 </body>
45 </html>

```



DHTML: Modello degli Eventi

13

## Gestione del mouse

- onmousemove
  - Viene **continuativamente** attivato a seguito dei movimenti del mouse sulla pagina Web
  - Fornisce la posizione del puntatore

DHTML: Modello degli Eventi

14

```

1 <?xml version = "1.0"?>
2 <!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN"
3 "http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">
4
5 <!-- Fig. 14.4: onmousemove.html -->
6 <!-- Demonstrating the onmousemove event -->
7
8 <xhtml xmlns = "http://www.w3.org/1999/xhtml">
9
10 <title>DHTML Event Model - onmousemove event</title>
11 <script type = "text/javascript">
12 <!--
13 function updateMouseCoordinates()
14 {
15     coordinates.innerHTML += event.srcElement.tagName +
16     "<br>" + event.offsetX + "<br>" + event.offsetY + "<br>";
17 }
18 // -->
19 </script>
20 </head>
21
22 <body style = "background-color: wheat"
23 onmousemove = "updateMouseCoordinates()">
24

```

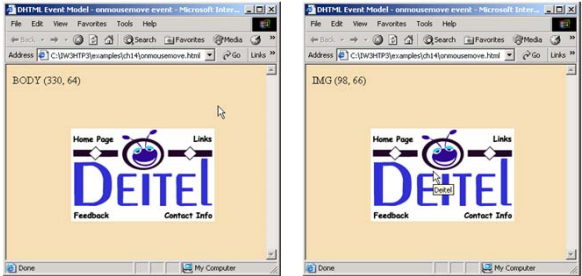
DHTML: Modello degli Eventi

15

```

25 <span id = "coordinates">(0, 0)</span></span-csp />
26 <img src = "deitel.gif" style = "position: absolute;
27 top: 100px; left: 100px; alt = "Deitel" />
28
29 </body>
30 </html>

```



DHTML: Modello degli Eventi

16

## Gestione del mouse: Proprietà (1)

- Esistono anche due altri eventi attivati dai movimenti del mouse
  - onmouseover
    - Quando il cursore **si trova sopra** un elemento
  - Onmouseout
    - Quando il cursore **esce** da un elemento

## Gestione del mouse: Proprietà (2)

Property of event	Description
altKey	This value is true if <i>Alt</i> key was pressed when event fired.
button	Returns which mouse button was pressed by user (1: left-mouse button, 2: right-mouse button, 3: left and right buttons, 4: middle button, 5: left and middle buttons, 6: right and middle buttons, 7: all three buttons).
cancelBubble	Set to false to prevent this event from bubbling (see Section 14.9, "Event Bubbling").
clientX / clientY	The coordinates of the mouse cursor inside the client area (i.e., the active area where the Web page is displayed, excluding scrollbars, navigation buttons, etc.).
ctrlKey	This value is true if <i>Ctrl</i> key was pressed when event fired.
offsetX / offsetY	The coordinates of the mouse cursor relative to the object that fired the event.
propertyName	The name of the property that changed in this event.
recordSet	A reference to a data field's recordset (see Chapter 16, "Data Binding").
returnValue	Set to false to cancel the default browser action.
screenX / screenY	The coordinates of the mouse cursor on the screen coordinate system.
shiftKey	This value is true if <i>Shift</i> key was pressed when event fired.
srcElement	A reference to the object that fired the event.
type	The name of the event that fired.
x / y	The coordinates of the mouse cursor relative to this element's parent element.

Fig. 14.5 Some event object properties.

```

1 <?xml version = "1.0"?>
2 <!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Strict//EN"
3   "http://www.w3.org/TR/xhtml1/DTD/xhtml1-strict.dtd">
4
5 <!-- Fig 14.6: onmouseover, onmouseout -->
6 <!-- Events onmouseover and onmouseout -->
7
8 <html xmlns = "http://www.w3.org/1999/xhtml">
9 <head>
10 <title>
11   DHTML: Event Model - onmouseover and onmouseout
12 </title>
13 <script type = "text/javascript">
14 <!--
15   captioniImage1 = new Image();
16   captioniImage1.src = "captioni1.gif";
17   captioniImage2 = new Image();
18   captioniImage2.src = "captioni2.gif";
19
20   function mOver()
21   {
22     if ( event.srcElement.id == "tableCaption" ) {
23       event.srcElement.src = captioniImage2.src;
24       return;
25     }

```

```

26
27 // If the element which triggered onmouseover has
28 // an id, change its color to its id.
29 if ( event.srcElement.id )
30   event.srcElement.style.color =
31   event.srcElement.id;
32
33
34
35 function mOut()
36 {
37   if ( event.srcElement.id == "tableCaption" ) {
38     event.srcElement.src = captioniImage1.src;
39     return;
40   }
41
42 // If it has an id, change the text inside to the
43 // text of the id.
44 if ( event.srcElement.id )
45   event.srcElement.innerText = event.srcElement.id;
46
47
48 document.onmouseover = mOver;
49 document.onmouseout = mOut;
50 // -->
51 </script>

```

```

51 </tbody>
52
53 <body style = "background-color: wheat">
54
55 <h1>Guess the Hex Code's Actual Color</h1>
56
57 <p>Can you tell a color from its hexadecimal RGB code
58 value? Look at the hex code, guess the color. To see
59 what color it corresponds to, move the mouse over the
60 hex code. Moving the mouse out will display the color
61 name.</p>
62
63 <table style = "width: 50%; border-style: groove;
64 text-align: center; font-family: monospace;
65 font-weight: bold">
66
67 <caption>
68 <img src = "caption.gif" id = "tablecaption"
69 alt = "Table Caption" />
70 </caption>
71
72 <tr>
73 <td><a id = "Black">#000000</a></td>
74 <td><a id = "Blue">#0000FF</a></td>
75 <td><a id = "Magenta">#FF00FF</a></td>

```

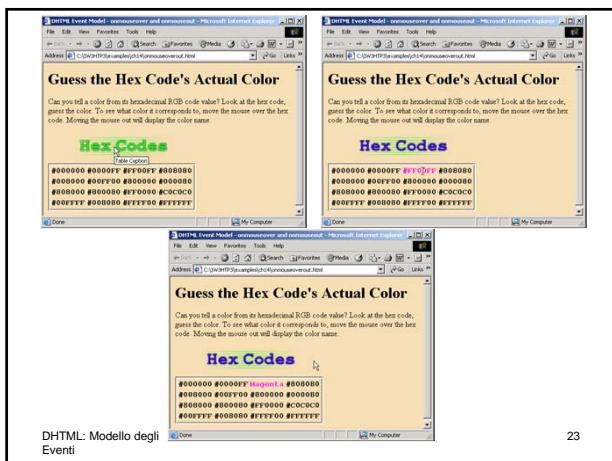
DHTML: Modello degli Eventi 21

```

76 <td><a id = "Grey">#808080</a></td>
77 </tr>
78
79 <td><a id = "Green">#008000</a></td>
80 <td><a id = "Lime">#00FF00</a></td>
81 <td><a id = "Maroon">#800000</a></td>
82 <td><a id = "Navy">#000080</a></td>
83 </tr>
84
85 <td><a id = "Olive">#808000</a></td>
86 <td><a id = "Purple">#800080</a></td>
87 <td><a id = "Red">#FF0000</a></td>
88 <td><a id = "Silver">#C0C0C0</a></td>
89 </tr>
90
91 <td><a id = "Cyan">#00FFFF</a></td>
92 <td><a id = "Teal">#008080</a></td>
93 <td><a id = "Yellow">#FFFF00</a></td>
94 <td><a id = "White">#FFFFFF</a></td>
95 </tr>
96 </table>
97
98 </body>
99 </html>

```

DHTML: Modello degli Eventi 22



## Elaborazione di Form

- L'evento onfocus è attivato quando un elemento **riceve** il focus
- L'evento onblur è attivato quando un elemento **perde** il focus

DHTML: Modello degli Eventi 24

```

2 <!-- Fig. 14.7: onFocusblur.html -->
3 <!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN"
4 "http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">
5 <!-- Fig. 14.7: onFocusblur.html -->
6 <!-- Demonstrating the onFocus and onBlur events -->
7
8 <html xmlns="http://www.w3.org/1999/xhtml">
9 <head>
10 <title>DHTML Event Model - onFocus and onBlur</title>
11 <script type="text/javascript">
12 <!--
13     var helpArray =
14     [ "Enter your name in this input box.",
15       "Enter your email address in this input box, " +
16         "in the format user@domain.",
17       "Check this box if you liked our site.",
18       "In this box, enter any comments you would " +
19         "like us to read.",
20       "This button submits the form to the " +
21         "server-side script",
22       "This button clears the form",
23       "This textarea provides context-sensitive help.",
24       "Click on any input field or use the TAB " +
25         "key to get more information about the " +

```

DHTML: Modello degli Eventi 25

```

26     "input field." ];
27
28     function helpText( messageNum )
29     {
30         myForm.helpBox.value = helpArray[ messageNum ];
31     }
32     // -->
33 </script>
34 </head>
35
36 <body>
37
38 <form id="myForm" action="">
39     Name: <input type="text" name="name"
40         onFocus="helpText(0)" onBlur="helpText(6)" /><br />
41     Email: <input type="text" name="email"
42         onFocus="helpText(1)" onBlur="helpText(6)" /><br />
43     Click here if you like this site
44     <input type="checkbox" name="like" onFocus =
45         "helpText(2)" onBlur = "helpText(6)" /><br /><hr />
46
47     Any comments?<br />
48     <textarea name="comments" rows="5" cols="45"
49         onFocus="helpText(3)" onBlur="helpText(6)">
50 </textarea><br />

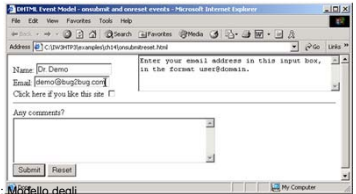
```

DHTML: Modello degli Eventi 26

```

51 <input type="submit" value="Submit" onFocus =
52     "helpText(4)" onBlur = "helpText(6)" />
53 <input type="reset" value="Reset" onFocus =
54     "helpText(5)" onBlur = "helpText(6)" />
55
56 <textarea name="helpBox" style="position: absolute;
57     right: 0; top: 0; readability="true" rows="4" cols="45">
58     This textarea provides context-sensitive help.
59     Click on any input field or use the TAB key
60     to get more information about the input field.</textarea>
61 </Form>
62
63 </body>
64 </html>

```



DHTML: Modello degli Eventi 27

## Altri Eventi per Elaborazione di Form

- onsubmit e onreset sono utilizzati per l'elaborazione di form, attivati ripetutamente quando si sottomette e si annulla il form

DHTML: Modello degli Eventi 28

```

1 <!-- Fig 14.8: onSubmit treset.html -->
2 <!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN"
3   "http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">
4
5 <!-- Demonstrating the onSubmit and onreset events -->
6
7
8 <html xmlns = "http://www.w3.org/1999/xhtml">
9   <head>
10    <title>
11      DHTML Event Model - onSubmit and onreset events
12    </title>
13    <script type = "text/javascript">
14      <!--
15       var hel pArray =
16         [ "Enter your name in this input box.",
17           "Enter your email address in this input box. ",
18           "In the format user@domain.",
19           "Check this box if you like our site.",
20           "In this box, enter any comments you would ",
21           "like us to read.",
22           "This button submits the form to the " +
23           "server-side script",
24           "This button clears the form",
25           "This textarea provides context-sensitive hel p. Click on

```

```

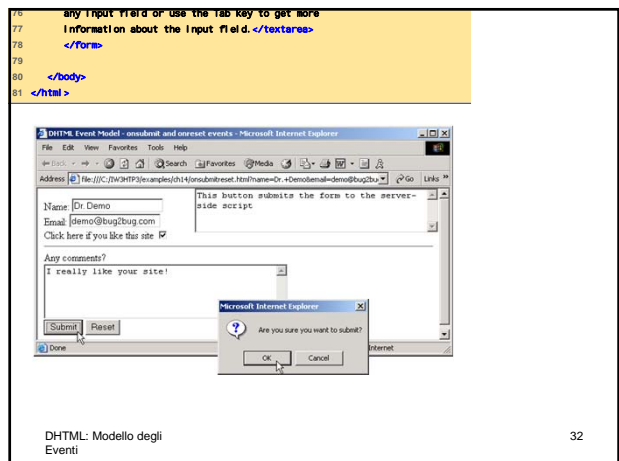
26     hel p. Click on any input field or use the Tab key +
27     "key to get more information about " +
28     "the input field." ];
29
30     function hel pText( messageNum )
31     {
32       myForm. hel pBox. value = hel pArray[ messageNum ];
33     }
34
35     function formSubmi tO (
36       window. event. returnValue = false;
37
38       IF ( confir m ( "Are you sure you want to submi t?" ) )
39         window. event. returnValue = true;
40     )
41
42     function formResetO (
43       window. event. returnValue = false;
44
45       IF ( confir m ( "Are you sure you want to reset?" ) )
46         window. event. returnValue = true;
47     )
48     // -->
49   </script>
50 </head>

```

```

51 <body>
52
53 <form id = "myForm" onSubmit = "formSubmi t()"
54   onreset = "formReset()" action = "">
55   Name: <input type = "text" name = "name"
56     onFocus = "hel pText(0)" onBlur = "hel pText(6)" /><br />
57   Email: <input type = "text" name = "email"
58     onFocus = "hel pText(1)" onBlur = "hel pText(6)" /><br />
59   Click here if you like this site
60   <input type = "checkbox" name = "like" onFocus =
61     "hel pText(2)" onBlur = "hel pText(6)" /><br />
62
63   Any comments?<br />
64   <textarea name = "comments" rows = "5" cols = "45"
65     onFocus = "hel pText(3)" onBlur = "hel pText(6)">
66   </textarea><br />
67   <input type = "submi t" value = "Submi t" onFocus =
68     "hel pText(4)" onBlur = "hel pText(6)" />
69   <input type = "reset" value = "Reset" onFocus =
70     "hel pText(5)" onBlur = "hel pText(6)" />
71
72   <textarea name = "hel pBox" style = "position: absolute;
73     right:0; top: 0" rows = "4" cols = "45">
74   This textarea provides context-sensitive hel p. Click on

```



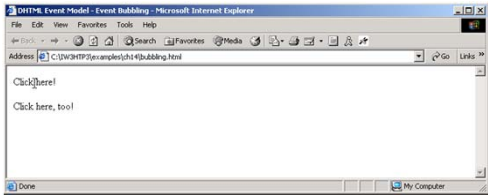


## Event Bubbling

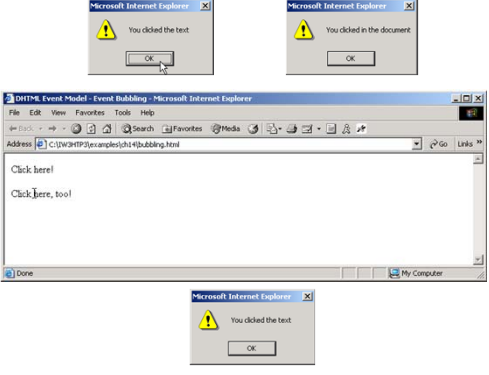
- È un concetto **cruciale** del modello degli eventi
- Si verifica quando eventi attivati in elementi figlio si ripercuotono (**bubble up**) sugli elementi padre

```
1 <?xml version = "1.0" ?>
2 <!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Strict//EN"
3 "http://www.w3.org/TR/xhtml1/DTD/xhtml1-strict.dtd">
4
5 <!-- Fig 14.9: bubbling.html -->
6 <!-- Disabling event bubbling -->
7
8 <html xmlns = "http://www.w3.org/1999/xhtml">
9 <head>
10 <title>DHTML Event Model - Event Bubbling</title>
11
12 <script type = "text/javascript">
13 <!--
14 function documentClick()
15 {
16     alert( "You clicked in the document" );
17 }
18
19 function paragraphClick( value )
20 {
21     alert( "You clicked the text" );
22
23     if ( value )
24         event.cancelBubble = true;
25 }
```

```
26
27     document.onclick = documentClick;
28     // -->
29 </script>
30 </head>
31
32 <body>
33
34 <p onclick = "paragraphClick( false )" >Click here! </p>
35 <p onclick = "paragraphClick( true )" >Click here, too! </p>
36 </body>
37 </html>
```



DHTML: Modello degli Eventi



DHTML: Modello degli Eventi

## Altri eventi DHTML (1)

Event	Description
<i>Clipboard events</i>	
onbeforecut	Fires before a selection is cut to the clipboard.
onbeforecopy	Fires before a selection is copied to the clipboard.
onbeforepaste	Fires before a selection is pasted from the clipboard.
oncopy	Fires when a selection is copied to the clipboard.
oncut	Fires when a selection is cut to the clipboard.
onabort	Fires if image transfer has been interrupted by user.
onpaste	Fires when a selection is pasted from the clipboard.
<i>Data binding events</i>	
onafterupdate	Fires immediately after a databound object has been updated.
onbeforeupdate	Fires before a data source is updated.
oncellchange	Fires when a data source has changed.
ondataavailable	Fires when new data from a data source become available.
ondatasetchanged	Fires when content at a data source has changed.
ondatasetcomplete	Fires when transfer of data from the data source has completed.
onerrorupdate	Fires if an error occurs while updating a data field.
onrowenter	Fires when a new row of data from the data source is available.
onrowexit	Fires when a row of data from the data source has just finished.
onrowsdelete	Fires when a row of data from the data source is deleted.
onrowsinserted	Fires when a row of data from the data source is inserted.

DHTML: Modello degli Eventi

37

## Altri eventi DHTML (2)

Event	Description
<i>Keyboard events</i>	
onhelp	Fires when the user initiates help (i.e., by pressing the <i>F1</i> key).
onkeydown	Fires when the user pushes down a key.
onkeypress	Fires when the user presses a key.
onkeyup	Fires when the user ends a key press.
<i>Marquee events</i>	
onbounce	Fires when a scrolling marquee bounces back in the other direction.
onfinish	Fires when a marquee finishes its scrolling.
onstart	Fires when a marquee begins a new loop.
<i>Mouse events</i>	
oncontextmenu	Fires when the context menu is shown (right-click).
ondblclick	Fires when the mouse is double clicked.
ondrag	Fires during a mouse drag.
ondragend	Fires when a mouse drag ends.
ondragenter	Fires when something is dragged onto an area.
ondragleave	Fires when something is dragged out of an area.
ondragover	Fires when a drag is held over an area.
ondragstart	Fires when a mouse drag begins.
ondrop	Fires when a mouse button is released over a valid target during a drag.
onmousedown	Fires when a mouse button is pressed down.

DHTML: Modello degli Eventi

38

## Altri eventi DHTML (3)

Event	Description
onmouseup	Fires when a mouse button is released.
<i>Miscellaneous events</i>	
onafterprint	Fires immediately after the document prints.
onbeforesetfocus	Fires before an element gains focus for editing.
onbeforeprint	Fires before a document is printed.
onbeforeunload	Fires before a document is unloaded (i.e., the window was closed or a link was clicked).
onchange	Fires when a new choice is made in a <code>select</code> element, or when a text input is changed and the element loses focus.
onfilterchange	Fires when a filter changes properties or finishes a transition (see Chapter 15, <i>Dynamic HTML: Filters and Transitions</i> ).
onlosecapture	Fires when the <code>releaseCapture</code> method is invoked.
onpropertychange	Fires when the property of an object is changed.
onreadystatechange	Fires when the <code>readyState</code> property of an element changes.
onreset	Fires when a form resets (i.e., the user clicks a reset button).
onresize	Fires when the size of an object changes (i.e., the user resizes a window or frame).
onscroll	Fires when a window or frame is scrolled.
onselect	Fires when a text selection begins (applies to <code>input</code> or <code>textarea</code> ).
onselectstart	Fires when the object is selected.
onstop	Fires when the user stops loading the object.
onunload	Fires when a page is about to unload.

DHTML: Modello degli Eventi

39