

## DHTML: Oggetti e Collezioni

DHTML: Oggetti e Collezioni

1

## Sommario

- Introduzione
- Riferimenti a Oggetti
- Collezioni all e children
- Stili dinamici
- Posizionamento dinamico
- Collezione frames
- Oggetto navigator
- Riepilogo

DHTML: Oggetti e Collezioni

2

## Obiettivi

- Usare il modello dinamico degli oggetti HTML per creare pagine dinamiche
- Capire la gerarchia di oggetti dinamici
- Usare le collezioni all e children
- Usare stili e posizionamenti dinamici
- Usare la collezione frames collection
- Usare l'oggetto navigator

DHTML: Oggetti e Collezioni

3

## Introduzione

- Il modello degli Oggetti Dinamici HTML
  - Permette all'autore di **controllare** la presentazione delle pagine
  - Permette l'accesso a tutti gli elementi delle pagine
- Una pagina Web
  - contiene elementi, moduli, frame, tabelle
  - rappresentati secondo una gerarchia di oggetti
- Scripting
  - È l'attività per recuperare e modificare le proprietà e gli attributi

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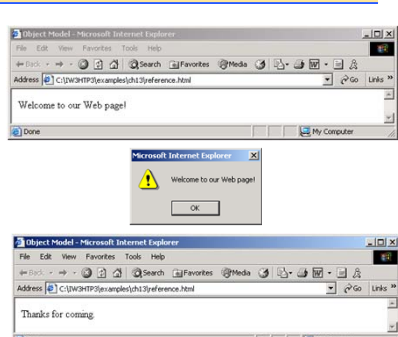
4

## Riferimento a Oggetti

- Il modo più semplice per riferirsi ad un elemento è usare l'attributo id dell'elemento
  - Gli attributi XHTML sono considerati proprietà che possono essere manipolate dalle azioni dello scripting

```
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. 13.1: reference.html -->
6 <!-- Object Model Introduction -->
7
8 <html xmlns = "http://www.w3.org/1999/xhtml">
9 <head>
10 <title>Object Model </title>
11
12 <script type = "text/javascript">
13 <!--
14 function start()
15 {
16 alert( pText.innerHTML );
17 pText.innerHTML = "Thanks for coming.";
18 }
19 // -->
20 </script>
21
22 </head>
```

```
23 <body onload = "start()">
24
25 <p id = "pText">Welcome to our Web page!</p>
26
27 </body>
</html>
```



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## Collezioni all e children

- Collezione
  - Array di oggetti correlati su una pagina
  - all
    - Tutti gli elementi XHTML in un documento
  - children
    - Lo **specifico** elemento contiene gli elementi figli di quell'elemento

```

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 13.2: all.html -->
6 <!-- Using the all collection -->
7
8 <html xmlns = "http://www.w3.org/1999/xhtml">
9   <head>
10    <title>Object Model</title>
11
12    <script type = "text/javascript">
13      <!--
14      var elements = "";
15
16      function start()
17      {
18        for ( var loop = 0; loop < document.all.length; ++loop )
19          elements += "<br />" + document.all[ loop ].tagName;
20
21        pText.innerHTML += elements;
22        alert( elements );
23      }
24      // -->

```

DHTML: Oggetti e Collezioni 9

```

25 </script>
26 </head>
27
28 <body onload = "start()">
29   <p id = "pText">Elements on this Web page:</p>
30 </body>
31 </html>

```

DHTML: Oggetti e Collezioni 10

```

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 13.3: children.html -->
6 <!-- The children collection -->
7
8 <html xmlns = "http://www.w3.org/1999/xhtml">
9   <head>
10    <title>Object Model</title>
11
12    <script type = "text/javascript">
13      <!--
14      var elements = "<ul>";
15
16      function child( object )
17      {
18        var loop = 0;
19
20        elements += "<li>" + object.tagName + "<ul>";
21

```

DHTML: Oggetti e Collezioni 11

```

22      for ( loop = 0; loop < object.children.length; loop++ )
23      {
24        if ( object.children[ loop ].children.length )
25          child( object.children[ loop ] );
26        else
27          elements += "<li>" +
28            object.children[ loop ].tagName +
29            "</li>";
30      }
31
32      elements += "</ul>" + "</li>";
33    }
34    // -->
35  </script>
36 </head>
37

```

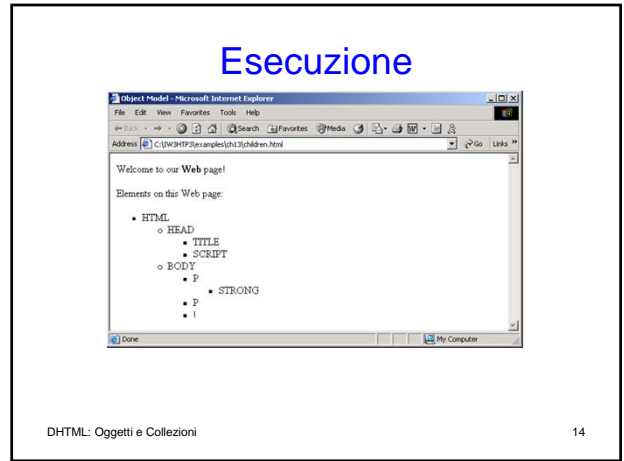
DHTML: Oggetti e Collezioni 12

```

38 <body on load = "init()" document.all["a"]);
39 myDI.spl.ej.outorHTML += el.events;
40 myDI.spl.ej.outorHTML += "</ul>";
41
42 <p>Welcome to our <strong>Web</strong> page!</p>
43
44 <p id = "myDI.spl.ej">
45 Elements on this Web page:
46 </p>
47
48 </body>
49 </html>

```

DHTML: Oggetti e Collezioni 13



- ## Stili Dinamici
- Lo stile degli elementi può essere gestito dinamicamente
  - È possibile modificare i valori dell'attributo class
- DHTML: Oggetti e Collezioni 15

```

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. 13.4: dynamicstyle.html -->
6 <!-- Dynamic Styles -->
7
8 <html xmlns = "http://www.w3.org/1999/xhtml">
9 <head>
10 <title>Object Model</title>
11
12 <script type = "text/javascript">
13 <!--
14 function startO
15 {
16     var InputColor = prompt(
17         "Enter a color name for the " +
18         "background of this page", "");
19     document.body.style.backgroundColor = InputColor;
20 }
21 // -->
22 </script>
23 </head>

```

DHTML: Oggetti e Collezioni 16

```

24 <body onload = "start()">
25 <p>Welcome to our Web site</p>
26 </body>
27 </html >

```

DHTML: Oggetti e Collezioni

17

```

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. 13.5: dynamictyl e2.html -->
6 <!-- More Dynamic Styles -->
7
8 <html xmlns = "http://www.w3.org/1999/xhtml">
9 <head>
10 <title>Object Model </title>
11
12 <style type = "text/css">
13
14 .bigText { font-size: 36pt;
15           font-weight: bold }
16
17 .smallText { font-size: .75em }
18
19 </style>
20

```

DHTML: Oggetti e Collezioni

18

```

21 <script type = "text/javascript">
22 <!--
23 function start()
24 {
25     var InputClass = prompt(
26         "Enter a class name for the text" +
27         "(bigText or smallText)", "");
28     ptext.className = InputClass;
29 }
30 // -->
31 </script>
32 </head>
33
34 <body onload = "start()">
35 <p id = "ptext">Welcome to our Web site</p>
36 </body>
37 </html >

```

DHTML: Oggetti e Collezioni

19

DHTML: Oggetti e Collezioni

20

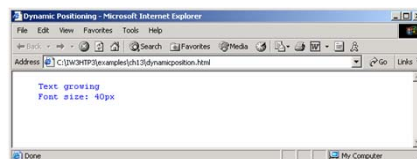
## Posizionamento Dinamico

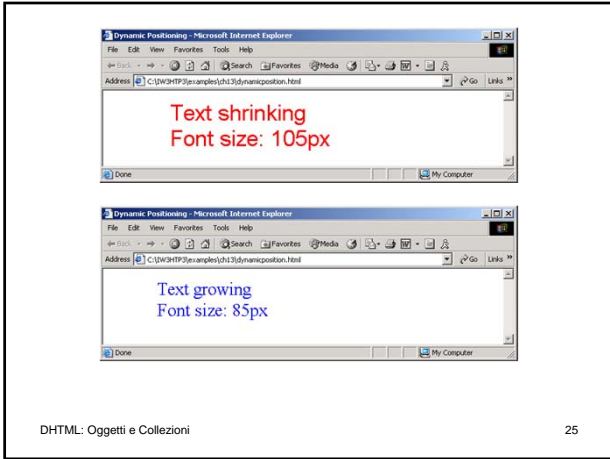
- Gli elementi XHTML possono essere posizionati nella pagina mediante azioni di scripting
  - Il posizionamento può essere sia assoluto che relativo
  - L'elemento può essere spostato usando le proprietà CSS top, left, right e bottom

```
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. 13.6: dynamicposition.html -->
6 <!-- Dynamic Positioning -->
7
8 <html xmlns = "http://www.w3.org/1999/xhtml" >
9 <head>
10 <title>Dynamic Positioning</title>
11
12 <script type = "text/javascript">
13 <!--
14 var speed = 5;
15 var count = 10;
16 var direction = 1;
17 var firstLine = "Text growing";
18 var fontStyle = [ "serif", "sans-serif", "monospace" ];
19 var fontStylecount = 0;
20
21 function startO
22 {
23     window.setInterval ("run()", 100 );
24 }
25
```

```
26 function run()
27 {
28     count += speed;
29
30     if ( ( count % 200 ) == 0 ) {
31         speed *= -1;
32         direction = 1 - direction;
33
34         pText.style.color =
35             ( speed < 0 ) ? "red" : "blue";
36         firstLine =
37             ( speed < 0 ) ? "Text shrinking" : "Text growing";
38         pText.style.fontFamily =
39             fontStyle[ ++fontStylecount % 3 ];
40     }
41
42     pText.style.fontSize = count / 3;
43     pText.style.left = count;
44     pText.innerHTML = firstLine + "br /> Font size: " +
45         count + "px";
46 }
47 // -->
48 </script>
49 </head>
50
```

```
51 <body onload = "startO" >
52 <p id = "pText" style = "position: absolute; left: 0;
53     font-family: serif; color: blue">
54     Wel come! </p>
55 </body>
56 </html >
```





## Collezioni di frame

- È possibile gestire elementi e oggetti nei frame usando la collezione frames

DHTML: Oggetti e Collezioni 26

```

1 <?xml version = "1.0" ?>
2 <!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Frameset//EN"
3   "http://www.w3.org/TR/xhtml1/DTD/xhtml1-frameset.dtd">
4
5 <!-- Fig. 13.7: index.html -->
6 <!-- Using the Frames collection -->
7
8 <html xmlns = "http://www.w3.org/1999/xhtml">
9   <head>
10    <title>Frames collection</title>
11   </head>
12
13   <frameset rows = "100, *">
14     <frame src = "top.html" name = "upper" />
15     <frame src = "" name = "lower" />
16   </frameset>
17
18 </html>

```

DHTML: Oggetti e Collezioni 27

```

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. 13.8: top.html -->
6 <!-- Cross-frame scripting -->
7
8 <html xmlns = "http://www.w3.org/1999/xhtml">
9   <head>
10    <title>The frames collection</title>
11
12    <script type = "text/javascript">
13      <!--
14      function start()
15      {
16        var text = prompt( "What is your name?", "" );
17        parent.frames( "lower" ).document.write(
18          "<html>I p. " + text + "</html>" );
19      }
20      // -->
21    </script>
22   </head>
23

```

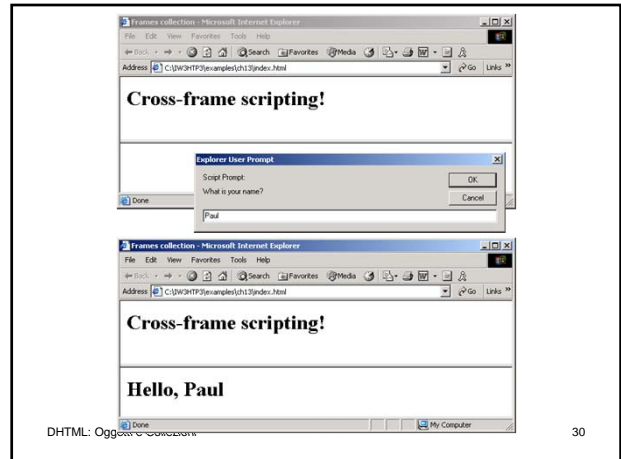
DHTML: Oggetti e Collezioni 28

```

24 <body onload = "start()" >
25 <h1>Cross-frame scripting!</h1>
26 </body>
27 </html >

```

DHTML: Oggetti e Collezioni 29



## Oggetto navigator

- Permette di riconoscere il browser con cui si accede alla pagina
  - Netscape, Mozilla, Microsoft's Internet Explorer, Safari, ...

DHTML: Oggetti e Collezioni 31

```

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 13.9: navigator.html -->
6 <!-- Using the navigator object -->
7
8 <html xmlns = "http://www.w3.org/1999/xhtml">
9 <head>
10 <title>The navigator Object</title>
11
12 <script type = "text/javascript">
13 <!--
14 function start()
15 {
16     if (navigator.appName=="Microsoft Internet Explorer")
17     {
18         if ( navigator.appVersion.substring(1, 0 ) >= "4" )
19             document.location = "msievers1 on.html";
20         else
21             document.location = "ol di Evers1 on.html ";
22     }
23     else
24         document.location = "NSvers1 on.html ";
25 }

```

DHTML: Oggetti e Collezioni 32

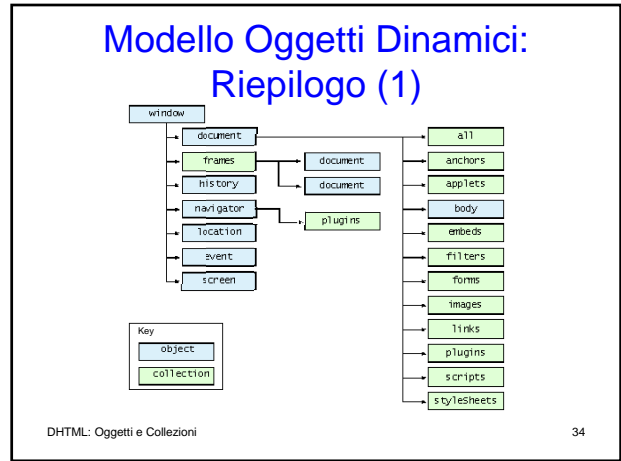


```

26 // -->
27 </script>
28 </head>
29
30 <body onload = "start0">
31 <p>Redirecting your browser to the appropriate page.
32 please wait...</p>
33 </body>
34 </html>

```

DHTML: Oggetti e Collezioni 33



### Modello Oggetti Dinamici: Riepilogo (2)

Object or collection	Description
<b>Objects</b>	
window	Represents the browser window and provides access to the document object contained in the window. If the window contains frames a separate window object is created automatically for each frame, to provide access to the document rendered in the frame. Frames are considered to be subwindows in the browser.
document	Represents the XHTML document rendered in a window. The document object provides access to every element in the XHTML document and allows dynamic modification of the XHTML document.
body	Provides access to the body element of an XHTML document.
history	Keeps track of the sites visited by the browser user. The object provides a script programmer with the ability to move forward and backward through the visited sites, but for security reasons does not allow the actual site URLs to be manipulated.
navigator	Contains information about the Web browser, such as the name of the browser, the version of the browser, the operating system on which the browser is running and other information that can help a script writer customize the user's browsing experience.
location	Contains the URL of the rendered document. When this object is set to a new URL, the browser immediately switches (navigates) to the new location.
event	Can be used in an event handler to obtain information about the event that occurred (e.g., the mouse x,y coordinates during a mouse event).
screen	Contains information about the computer screen for the computer on which the browser is running. Information such as the width and height of the screen in pixels can be used to determine the size at which elements should be rendered in a Web page.

Fig. 13.10 Objects in the Internet Explorer 6 Object Model. 35

### Modello Oggetti Dinamici: Riepilogo (3)

Object or collection	Description
<b>Collections</b>	
all	Many objects have an all collection that provides access to every element contained in the object. For example, the body object's all collection provides access to every element in the body element of an XHTML document.
anchors	Collection contains all the anchor elements (a) that have a name or id attribute. The elements appear in the collection in the order they were defined in the XHTML document.
applets	Contains all the applet elements in the XHTML document. Currently, the most common applet elements are Java applets.
embeds	Contains all the embed elements in the XHTML document.
forms	Contains all the form elements in the XHTML document. The elements appear in the collection in the order they were defined in the XHTML document.
frames	Contains window objects that represent each frame in the browser window. Each frame is treated as its own subwindow.
images	Contains all the img elements in the XHTML document. The elements appear in the collection in the order they were defined in the XHTML document.
links	Contains all the anchor elements (a) with an href property. This collection also contains all the area elements that represent links in an image map.

Fig. 13.11 Objects in the Internet Explorer 6 Object Model. 36

## Modello Oggetti Dinamici: Riepilogo (4)

Object or collection	Description
plugIns	Like the embeds collection, this collection contains all the embed elements in the XHTML document.
scripts	Contains all the Script elements in the XHTML document.
styleSheets	Contains StyleSheet objects that represent each Style element in the XHTML document and each style sheet included in the XHTML document via link.

Fig. 13.11 Objects in the Internet Explorer 6 Object Model.