



# **DYNAMIC WEB PAGES MORE JAVASCRIPT**

# QUIZ 3

Registration - Mozilla Firefox

File Edit View History Bookmarks Tools Help

File:///D:/Office Work/Web Tech - I/Web Tech I - Falak/Labs/Lab 6/valid

Most Visited Getting Started Latest Headlines Customize Links

## User Registration

Please complete the following form to register with our site:

User Name:

Password:

Confirm Password:

First Name:

Last Name:

Gender: ☐ Male ☐ Female

How did you hear about us?:

Please select this box if you wish to be added to our mailing list: ☐

We will not pass on your details to any third party.

Done

18/07/2011

# REVIEW

- Client-side programming overview
- Basics of JavaScript programming
- Operators, repetition and selection
- Functions
- Events
- Variables, arrays and objects

# TODAY ...

- Document (DOM) / DHTML
- Accessing elements
- Graphics and Animation

# DETECTING BROWSER

```
<script type="text/javascript">
```

```
function WhichBrowser() {  
  if (navigator.userAgent.indexOf("MSIE") != -1)  
  { alert("You are running Microsoft Internet Explorer."); }  
  else if (navigator.userAgent.indexOf("Firefox") != -1)  
  { alert("You are running FireFox."); }  
  else if (navigator.userAgent.indexOf("Navigator") != -1)  
  { alert("You are running Netscape."); }  
  else if (navigator.userAgent.indexOf("Opera") != -1 )  
  { alert("You are running Opera."); }  
  else {  
    alert("You are running some odd-ball browser."); }  
}
```

```
</script>
```

```
<body>
```

```
<input type="button" value="Which Browser? " onclick="WhichBrowser()"/>
```

```
</body>
```



# WINDOW OBJECT

| Method                 | Description  |
|------------------------|--|
| alert()                | Opens an alert message box and displays a text string.   |
| prompt()               | Opens a prompt message box and returns entered value.  |
| confirm()              | Opens a confirm message box and returns true or false.   |
| open()                 | Opens a secondary window.  |
| close()                | Closes an open window.   |
| moveTo( <i>h,v</i> )   | Moves the window to <i>horizontal</i> and <i>vertical</i> position relative top-left of screen:<br>moveTo(50,50)                     |
| moveBy( <i>h,v</i> )   | Moves the window by + or - <i>horizontal</i> and <i>vertical</i> pixels:<br>moveBy(50,50)  |
| resizeTo( <i>h,v</i> ) | Changes the size of the window to <i>horizontal</i> and <i>vertical</i> number of pixels:<br>resizeTo(800,600)<br>resizeTo(1024,768) |
| resizeBy( <i>h,v</i> ) | Changes the size of the window by + or - <i>horizontal</i> and <i>vertical</i> pixels:<br>resizeBy(-50,-50)                          |
| print()                | Prints the window or frame. Presents the print dialog box.   |

# THE DOCUMENT OBJECT MODEL (DOM)

- A specification
  - An Application Programming Interface (API)
  - Is used so programs can interact with web pages
  - Language and platform neutral (whether Javascript or VBScript for example)
  - Some problems with variations in browsers, always check
  - DOM sometimes known as Dynamic HTML Object Model within Microsoft specific contexts

# THE DOCUMENT OBJECT MODEL

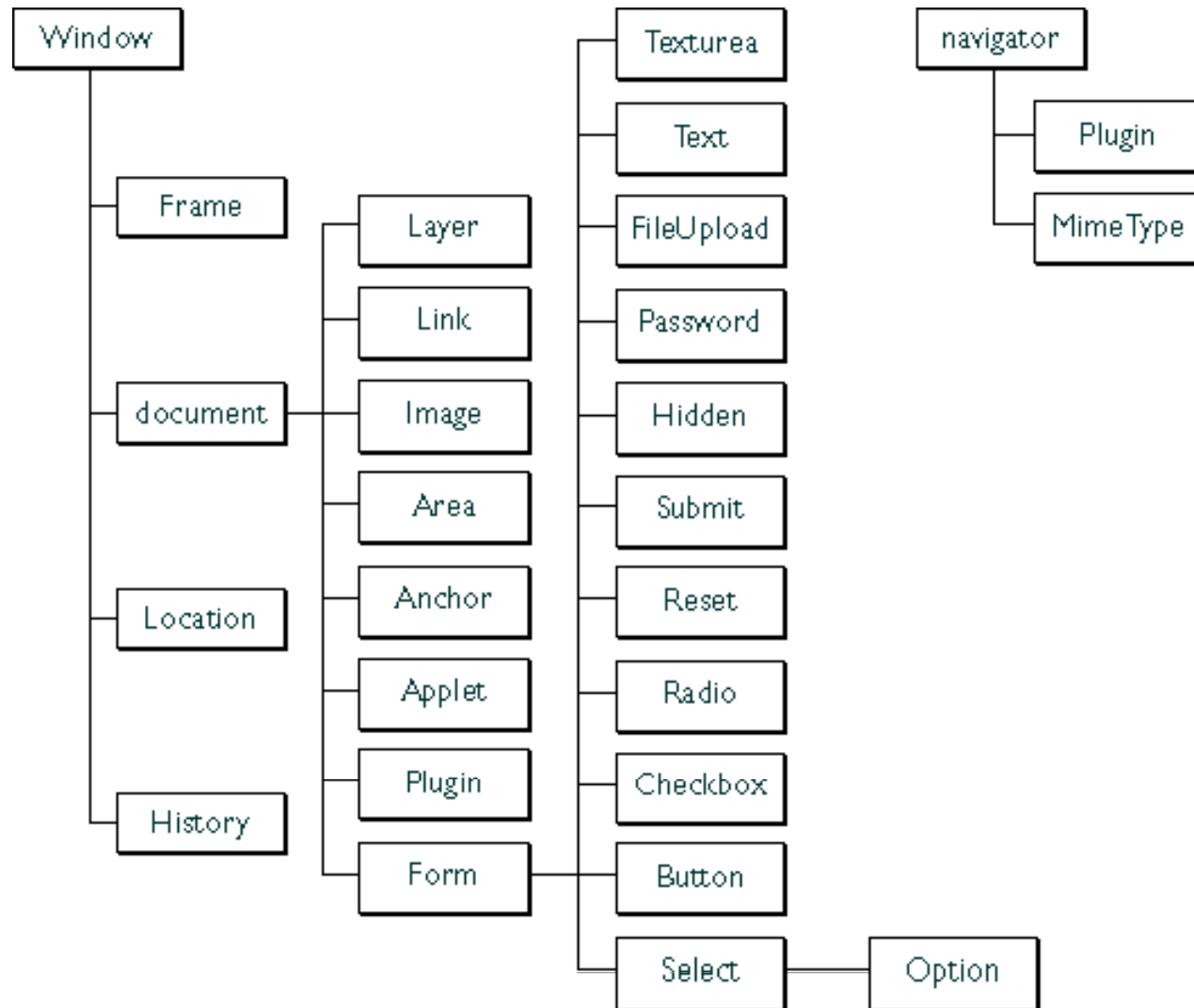
- The main idea is to let any script access any part of a web document, simply.
- This idea is extended to controlling browser related features.



# THE DOCUMENT OBJECT MODEL

- Root level of the JavaScript DOM is the window object
- Window objects have properties such as status line
- The next level up is the document object...which is the loaded HTML page
- Document objects have properties such as background color.
- Each HTML element (e.g. links or forms) is a property of the document object.

# Javascript Document Object Model



18/07/2011

## Simple DOM example

```
<html>
```

```
<body>
```

```
<h1 id="header">Test theDOM</h1>
```

```
<script type="text/javascript">
```

```
document.getElementById('header').style.color="red"
```

```
document.getElementById('header').style.backgroundColor="green"
```

```
</script></body>
```

```
</html>
```

# DOM

## Example 1

```
<HTML>
<HEAD>
<TITLE>Test DOM</TITLE>
</HEAD>
<BODY BGCOLOR="#FFFFFF">
<FONT FACE="Verdana, Arial, Helvetica" SIZE=2>
<script language="javascript">
<!--
    var a=document.body.bgColor;
    document.write(a);
    document.body.bgColor='#109032';
    document.fgColor='#ffffff';
-->
</script>
</BODY></HTML>
```

# DOM

## Example 2

```
<HTML><HEAD><TITLE>Got Flash?</TITLE>
```

```
<SCRIPT LANGUAGE=JAVASCRIPT TYPE="TEXT/JAVASCRIPT">
```

```
hasFlash = false
for (i=0; i<navigator.plugins.length; i++) {
    if (navigator.plugins[i].name.indexOf("Flash") >= 0) {
        hasFlash = true
    }
}
```

```
</SCRIPT>
```

```
</HEAD><BODY BGCOLOR=WHITE><H2>
```

```
<SCRIPT LANGUAGE=JAVASCRIPT TYPE="TEXT/JAVASCRIPT">
```

```
if (hasFlash) {
    document.write("You have Flash, you are lucky person!")
}
else {
    document.write("Sorry, you don't have Flash.")
}
```

```
</SCRIPT>
```

```
</H2></BODY></HTML>
```

18/07/2011

## Accessing HTML Elements

Elements within a document can be accessed by name:

```
<HTML>
```

```
<HEAD>
```

```
<TITLE>Test DOM</TITLE>
```

```
</HEAD>
```

```
<BODY BGCOLOR="#FFFFFF">
```

```
<FONT FACE="Verdana, Arial, Helvetica" SIZE=2>
```

```
<div id="myobject" name="myobject"
```

```
style="position:absolute;top:120px;
```

```
left:150px;width:390px;height:190px;background:#aaffaa">
```

```
This is a test
```

```
</div>
```

```
<script language="JavaScript">
```

```
<!--
```

```
document.all.myobject.style.backgroundColor="Red";
```

```
-->
```

```
</script>
```

```
</BODY>
```

```
</HTML>
```

## DOM Example 3

```
<html><head>
<script type="text/javascript">
function addRow()
{
var tab = document.getElementById("table1");
var newRec = tab.insertRow(1);
newRec.insertCell(0).innerHTML = "Ahmad";
newRec.insertCell(1).innerHTML = 46;
}
</script>
</head>
<body onLoad="addRow()">
<table id="table1" width="50%" border="1">
<tr>
<td>Ali</td>
<td>45</td>
</tr>
</table>
</body>
</html>
```

# GRAPHICS AND ANIMATION

- The Image Object
  - Represents images created using `<img>` tag
  - Each `<img>` tag in an HTML document is represented in the DOM `images[]` array by an Image object
  - Use with JavaScript to change images based on user selection



# ANIMATION WITH THE IMAGE OBJECT

- Simple animation
  - Created by a sequence of images changed automatically
  - Enabled by combining Image object SRC attribute with setTimeout() or setInterval() methods

# ANIMATION WITH THE IMAGE OBJECT

- True animation
  - Requires a different graphic, or frame, for each movement that a character or object makes
  - Frames can be automatically cycled using JavaScript
    - Ensure each frame is consistent in size and position



runner0.jpg



runner1.jpg



runner2.jpg



runner3.jpg



runner4.jpg



runner5.jpg

## Runner script

```
<HTML>
<HEAD>
<TITLE>Runner 1</TITLE>
<SCRIPT LANGUAGE="JavaScript">
var runner = new Array(6);var curRunner = 0;
var startRunning;
runner[0] = "runner0.jpg"
runner[1] = "runner1.jpg"
runner[2] = "runner2.jpg"
runner[3] = "runner3.jpg"
runner[4] = "runner4.jpg"
runner[5] = "runner5.jpg"
function marathon() {
    if (curRunner == 5) curRunner = 0;
```

## Runner script

```
        else
            ++curRunner;
            document.animation.src = runner[curRunner];
    }
</SCRIPT></HEAD>
<BODY>
<P><IMG SRC = "runner0.jpg" NAME = "animation"></P>
<FORM>
<INPUT TYPE="button" NAME="run" VALUE=" Run "
onClick="startRunning=setInterval('marathon()',100);">
<INPUT TYPE="button" NAME="stop" VALUE=" stop "
onClick="clearInterval(startRunning);">
</FORM></BODY></HTML>
```

## What we did:

- JavaScript DOM
- Animation

## What you still need to cover:

- Cookies (<http://www.webreference.com/js/column8>)
- String manipulation ([http://www.w3schools.com/js/js\\_obj\\_string.asp](http://www.w3schools.com/js/js_obj_string.asp))
- Objects (<http://www.javascriptkit.com/javatutors/object.shtml>)