

Javascript

Lecture 24

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- 1 Javascript
- 2 The Document Object Model (DOM)
- 3 Javascript Functions
- 4 Javascript Event Handlers
- 5 Manipulating Form Elements
 - The `getElementById()` Function
 - The `innerHTML` Property
- 6 Assignment

Outline

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Javascript

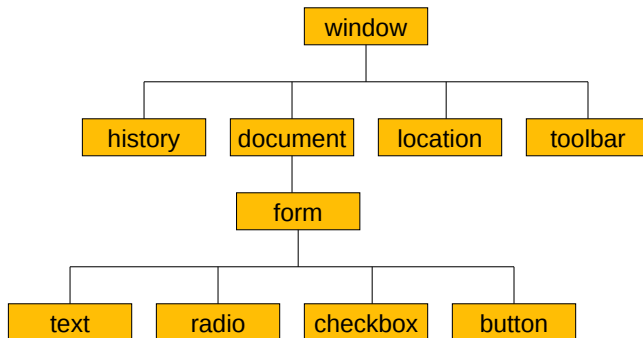
- **Javascript** is a programming language.
- Javascript programs are embedded within HTML files.
- They are executed either while the HTML file is being loaded or after it has been loaded on the client's computer.
- Recall that PHP programs are executed *before* the file is loaded.

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The DOM

- JavaScript views an HTML file through a hierarchical model called the **Document Object Model (DOM)**.



A portion of the DOM

Script Tags

```
<script language="javascript">  
    Javascript_program  
</script>
```

- Javascript programs are embedded within `<script>` tags.
- The `language` attribute is not necessary because Javascript is the default.

Example

“Hello, World!” in Javascript

```
<html>
<body>
The following message is from Javascript:
<script>
document.write("Hello, World!");
</script>
</body>
</html>
```

- The “Hello, world!” program in Javascript.
- The `write()` function will write the text to a browser window.
- It is not necessary to specify the `window` object because there is only one window.

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Javascript Functions

Hello, World Function

```
<head>
<script>
function hello()
{
    document.write("Hello, World");
}
</script>
</head>
<body>
The following greeting is from Javascript:
<script>hello()</script>
</body>
```

- The Hello, World script could be placed in a function.

Javascript Functions

Javascript Functions

```
<head>
<script>
function f(x)
{
    document.write(x + 100);
}
</script>
</head>
<body>
<script>f(123)</script>
</body>
```

- Javascript functions may take arguments.

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Javascript Event Handlers

Event Handlers

Attribute	Event
onclick	The mouse is clicked on the element
ondblclick	The mouse is double-clicked on the element
onchange	The value of the element changes
onfocus	The mouse is moved over the element
onblur	The mouse is moved away from the element

- Form elements may have any of the above attributes (and many more).
- Each attribute invokes a Javascript function assigned by the programmer.

Javascript Event Handlers

The Form

```
<form name="adder">
1st number: <input type="text" name="num1" value="0"/><br/>
2nd number: <input type="text" name="num2" value="0"/><br/>
<input type="button" value="Get Sum" onclick="get_sum()" />
<input type="reset"/><br/>
The sum: <input type="text" name="sum"/>
</form>
```

- For example, a button could use the onclick attribute.
- We will create an HTML page that will add two numbers.

Javascript Event Handlers

The Form

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```

- For example, a button could use the onclick attribute.
- We will create an HTML page that will add two numbers.

Javascript and Input Elements

The `get_sum()` Function

```
function get_sum()  
{  
    var a = document.adder.num1.value;  
    var b = document.adder.num2.value;  
    document.adder.sum.value =  
        parseFloat(a) + parseFloat(b);  
}
```

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Manipulating Form Elements

- Suppose the user is to choose from among four radio buttons labeled
 - Basketball
 - Football
 - Baseball
 - Other _____
- The text box following Other is distinct from the Other radio button.
- Yet, when the user clicks in the text box, we want the Other radio button to be checked.
- We can accomplish this with the `onclick` attribute in the text box.

Manipulating Form Elements

Manipulating Form Elements

```
<form method="GET" name="sportform" action="sport.php">
What is your favorite sport?<br/>
<input type="radio" name="sport" value="bskt" checked="checked"/>
Basketball<br/>
<input type="radio" name="sport" value="foot"/> Football<br/>
<input type="radio" name="sport" value="base"/> Baseball<br/>
<input type="radio" name="sport" value="other"/> Other
<input type="text" name="other" onclick="set_radio_button()" /><br/>
<input type="submit" value="Submit"/>
<input type="reset"/>
</form>
```

Manipulating Form Elements

The `set_radio_button()` Function

```
function set_radio_button()
{
    document.sportform.sport[3].checked = true;
}
```

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The `getElementById()` Function

```
document.getElementById("bskt").checked = true;
```

- The function `getElementById()` will locate an element anywhere in the page by its `id`.
- This function makes it unnecessary to “navigate” the DOM tree.

The `getElementById()` Function

```
document.getElementById("bskt").checked = true;
```

- The function `getElementById()` will locate an element anywhere in the page by its `id`.
- This function makes it unnecessary to “navigate” the DOM tree.
- And THAT is a VERY good thing!

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The innerHTML Property

```
<h1 id="heading">My Web Page</h1>
document.getElementById("heading").innerHTML
= "Choose Your Favorite Sports";
```

- The `innerHTML` property of an element refers to everything between the opening and closing tags of the element.
- It can be used to change elements of a web page dynamically.

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Assignment

Assignment

- Visit the W3Schools website
 - <http://www.w3schools.com/js/>
 - Visit the sections labeled “JS HOME” through “JS Comments.”