

1. JavaScript Introduction

JavaScript is the world's most popular programming language. It is the language for HTML and the web, for servers, PCs, laptops, tablets, smart phones, and more.

JavaScript is *THE* scripting language of the Web.

JavaScript is used in billions of Web pages to add functionality, validate forms, communicate with the server, and much more.

1.1. JavaScript is a Scripting Language

A scripting language is a lightweight programming language.

JavaScript is programming code that can be inserted into HTML pages.

JavaScript inserted into HTML pages, can be executed by all modern web browsers.

JavaScript is easy to learn.

Example

```
<!DOCTYPE html>
<html>
<head>
<script>
function displayDate()
{
document.getElementById("demo").innerHTML=Date
();
}
</script>
</head>
<body>

<h1>My First JavaScript</h1>
<p id="demo">This is a paragraph.</p>

<button type="button"
onclick="displayDate()">Display Date</button>

</body>
</html>
```

1.2. JavaScript: Writing Into HTML Output

Example

```
document.write("<h1>This is a heading</h1>");  
document.write("<p>This is a paragraph</p>");
```



You can only use *document.write* in the HTML output. If you use it after the document has loaded, the whole document will be overwritten.

1.3. JavaScript: Reacting to Events

Example

```
<button type="button" onclick="alert('Welcome!') ">  
    Click Me!  
</button>
```

The `alert()` function is not much used in JavaScript, but it is often quite handy for trying out code. The `onclick` event is only one of the many HTML events you will learn about in this tutorial.

1.4. JavaScript: Changing HTML Content

Using JavaScript to manipulate the content of HTML elements is a very powerful functionality.

Example

```
x=document.getElementById("demo")    //Find the element  
x.innerHTML="Hello JavaScript";      //Change the content
```

You will often see **`document.getElementById("some id")`**. This is defined in the HTML DOM. The DOM (**D**ocument **O**bject **M**odel) is the official W3C standard for accessing HTML elements. You will find several chapters about the HTML DOM in this tutorial.

1.5. JavaScript: Changing HTML Images

This example dynamically changes the source (src) attribute of an HTML <image> element:

```
<!DOCTYPE html>
<html>
<body>
<script>
function changeImage()
{
element=document.getElementById('myimage')
if (element.src.match("bulbon"))
{
element.src="pic_bulboff.gif";
}
else
{
element.src="pic_bulbon.gif";
}
}
</script>



<p>Click the light bulb to turn on/off the light</p>

</body>
</html>
```

JavaScript can change most of the attributes of any HTML element, not only images.

1.6. JavaScript: Changing HTML Styles

Changing the style of an HTML element, is a variant of changing an HTML attribute.

Example

```
x=document.getElementById("demo") //Find the element
x.style.color="#ff0000";           //Change the style
```

1.7. JavaScript: Validate Input

JavaScript is commonly used to validate input.

Example

```
if isNaN(x) {alert("Not Numeric")};
```

1.8. Did You Know?

JavaScript and Java are two completely different languages, in both concept and design. Java (invented by Sun) is a more complex programming language in the same category as C.



ECMA-262 is the official name of the JavaScript standard.

JavaScript was invented by Brendan Eich. It appeared in Netscape (a no longer existing browser) in 1995, and has been adopted by ECMA (a standard association) since 1997.