

## Introduction to JavaScript

### What JS can do?

Can change HTML content

Can modify the attributes associated with HTML tags

Can be used to modify CSS styles

Can be used for data validation

### Where to write the JS code?

Within the `<script></script>` tags in the head or body section of the HTML document

(Place scripts at the bottom of the `<body>` element.

This can improve page load, because HTML display is not blocked by scripts loading. [suggestive])

External JavaScript

Accessing it on the Web page by using the `<SCRIPT src>` tag

External scripts cannot contain `<script>` tags

### How to display output?

Writing into an alert box, using **`window.alert()`**.

Writing into the HTML output using **`document.write()`**.

Writing into an HTML element, using **`innerHTML`**. (To define the HTML content)

Writing into the browser console, using **`console.log()`**.

## JavaScript elements

Characters

Values: Literals and Variables

Operators

Expressions

Statements and semi-colons

Code blocks

Keywords

Comments (// or /\* \*/)

Data types

Numbers

Strings (Empty values)

Booleans

The typeof operator

JavaScript is case sensitive

JavaScript Identifier Names

- Names can contain letters, digits, underscores, and dollar signs.
- Names must begin with a letter
- Names can also begin with \$ and \_
- Names are case sensitive
- Reserved words cannot be used as names

Variable declaration

Variable initialization (assignment operator)

Value=undefined

Operators

Arithmetic:

<b>Operator</b>	<b>Description</b>
<b>+</b>	Addition
<b>-</b>	Subtraction
<b>*</b>	Multiplication
<b>/</b>	Division
<b>%</b>	Modulus
<b>++</b>	Increment
<b>--</b>	Decrement

Assignment:

Operator	Example	Same As
=	x = y	x = y
+=	x += y	x = x + y
-=	x -= y	x = x - y
*=	x *= y	x = x * y
/=	x /= y	x = x / y
%=	x %= y	x = x % y

String operator (+)

Adding strings n numbers

Comparison operators

Operator	Description	Comparing	Returns
==	equal to	x == 8	false
		x == 5	true
===	equal value and equal type	x === "5"	false
		x === 5	true
!=	not equal	x != 8	true
!==	not equal value or not equal type	x !== "5"	true
		x !== 5	false
>	greater than	x > 8	false
<	less than	x < 8	true
>=	greater than or equal to	x >= 8	false
<=	less than or equal to	x <= 8	true

Logical Operators

Operator	Description
&&	and
	or

! not

Conditional Operator ( ? : )

Events

The onchange (when the value of an element changes) , onclick, onmouseover, onmouseout, onkeydown, onload events..

JavaScript functions

Function definition

Function declaration

```
function <name>()
```

```
{ }
```

Function expressions

The Function constructor

Self-invoking function

Function Parameters and Arguments

Default parameters

Pass by Value

Function invocation

Function return/return statement

Invoking the function without ()

Understanding the scope of JavaScript variables

Local

Global

JavaScript Objects

Methods and Properties

Accessing Object Properties and Methods

*objectName.propertyName*

*objectName[propertyName]*

*objectName.methodName()*