

INTRODUCTION TO JAVASCRIPT

JAVASCRIPT

- ▶ JavaScript is used in millions of Web pages to improve the design, validate forms, detect browsers, create cookies, and much more.
- ▶ JavaScript is the most popular scripting language on the internet, and works in all major browsers, such as Internet Explorer, Mozilla, Firefox, Netscape, Opera.

WHAT IS JAVASCRIPT ?

- ▶ JavaScript was designed to add interactivity to HTML pages
- ▶ JavaScript is a scripting language (a scripting language is a lightweight programming language)
- ▶ A JavaScript consists of lines of executable computer code
- ▶ A JavaScript is usually embedded directly into HTML pages
- ▶ JavaScript is an interpreted language (means that scripts execute without preliminary compilation) (analyzes and immediately executes it.)
- ▶ Everyone can use JavaScript without purchasing a license

- ▶ Browsers have limited functionality
 - ▶ Text, images, tables, frames
- ▶ Browser/page manipulation
 - ▶ Reacting to user actions

How Does It Work?

- ▶ A type of programming language
 - ▶ Easy to learn
 - ▶ Developed by Netscape
- ▶ Embedded within HTML page
 - ▶ View source
- ▶ Executes on client
 - ▶ Fast, no connection needed once loaded
- ▶ Simple programming statements combined with HTML tags
- ▶ Interpreted (not compiled)
 - ▶ No special tools required

What is Java?

- ▶ Totally different
- ▶ A full programming language
- ▶ Much harder!
- ▶ A compiled language

Learning JavaScript

- ▶ Special syntax to learn
- ▶ Learn the basics and then use other people's (lots of free sites)
- ▶ Write it in a text editor, view results in browser
- ▶ You need to revise your HTML

Are Java and JavaScript the Same?

- ▶ NO!
- ▶ Java and JavaScript are two completely different languages in both concept and design!
- ▶ Java (developed by Sun Microsystems) is a powerful and much more complex programming language - in the same category as C and C++.

How to Put a JavaScript Into an HTML Page?

```
<html>  
<body>  
<script type="text/javascript">  
document.write("Hello World!");  
</script>  
</body>  
</html>
```

Ending Statements With a Semicolon ?

- ▶ With traditional programming languages, like C++ and Java, each code statement has to end with a semicolon (;).
- ▶ Many programmers continue this habit when writing JavaScript, but in general, semicolons are **optional!** However, semicolons are required if you want to put more than one statement on a single line.

JavaScript Statements

```
<html>
<head> <title> My Page </title> </head>
<body>
<script language="JavaScript">

document.write('<h1>This is my firstJavaScript Page</h1>');

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

HTML written
inside JavaScript



- ▶ The **getElementById()** method returns the element that has the ID attribute with the specified value.
- ▶ This method is one of the most common methods in the HTML DOM, and is used almost every time you want to manipulate, or get info from, an element on your document.
- ▶ The **innerHTML** property is part of the Document Object Model (DOM) that allows **Javascript** code to manipulate a website being displayed. Specifically, it allows reading and replacing everything within a given DOM element (HTML tag).

JavaScript Variables :-

- ▶ Variables are used to store data.
- ▶ A variable is a "container" for information you want to store. A variable's value can change during the script. You can refer to a variable by name to see its value or to change its value.
- ▶ Rules for variable names:
 - ▶ Variable names are case sensitive
 - ▶ They must begin with a letter or the underscore character
 - ▶ `strname` - `STRNAME` (not same)

- ▶ Variable are names associated stored values.
- ▶ They can begin with upper case letters (A-Z), a lower case letter (a-z), an under score (_), or a dollar sign (\$).
- ▶ For example ,
- ▶ Opl, _123, sum,l1_d etc

Java script supports:-

- ▶ 1. Number :- interger and floting point numbers.
- ▶ 2. Boolean ;- logical value true and false.
- ▶ 3. String :- String values that are enclosed in single or double quotes.
- ▶ 4. Null Types:- null or empty.

Data type;-

- ▶ Java script provides four basic data type that can be used to work with number and text.

▶ type	example
▶ 1. Number	Any number , such as 10, 23.5
▶ 2. String	“JavaScript”
▶ 3. Boolean	True or False
▶ 4. Null	the Null value means nothing.

- ▶ 1. Number:- it is possible to express both integers floating point values.
- ▶ 1. Integer:-
 - ▶ i) it does not contain decimal point.
 - ▶ ii) it can be either positive or negative.
 - ▶ eg:- 24 , -1
- ▶ 2. Float :-
 - ▶ i) it consist of decimal point.
 - ▶ ii) it can be positive or negative.
 - ▶ eg:- 24.5 , -1.5 .

▶ 2. String:-

- ▶ I) character or number enclosed in single or double quotes is called as string.
- ▶ li) it include any alphabets a to z or A to Z , number 0 to 9 or any special character.
- ▶ Eg:- “Happy”, '75'

▶ 3. Boolean :-

- ▶ i)a Boolean can take two values - true or false.
- ▶ ii) it can be used for comparing data and making decisions.

▶ 4. Null:-

- ▶ i) NULL value is a special value in javaScript.
- ▶ ii) NULL value represent just that nothing.

JavaScript Operators;-

► Arithmetic Operators:-

Operator	Description	Example	Result
+	Addition	x=2 y=2 x+y	4
-	Subtraction	x=5 y=2 x-y	3
*	Multiplication	x=5 y=4 x*y	20
/	Division	15/5 5/2	3 2,5
%	Modulus (division remainder)	5%2 10%8 10%2	1 2 0
++	Increment	x=5 x++	x=6
--	Decrement	x=5 x--	x=4

- ▶ JavaScript Variables:-
- ▶ JavaScript variables are containers for storing data values.
- ▶ In this example, x, y, and z, are variables:

- ▶

```
var x = 5;  
var y = 6;  
var z = x + y;
```

- ▶ From the example above, you can expect:
- ▶ x stores the value 5
- ▶ y stores the value 6
- ▶ z stores the value 11
- ▶

JavaScript Identifiers:-

- ▶ All JavaScript **variables** must be **identified** with **unique names**.
- ▶ These unique names are called **identifiers**.
- ▶ Identifiers can be short names (like x and y) or more descriptive names (age, sum, total).
- ▶ The general rules for constructing names for variables (unique identifiers) are:
- ▶ Names can contain letters, digits, underscores, and dollar signs.
- ▶ Names must begin with a letter.
- ▶ Names are case sensitive (y and Y are different variables).

```
var answer = 'Yes I am!';
```

[Try it Yourself »](#)

JavaScript Data Types;-

- ▶ JavaScript variables can hold numbers like 100 and text values like "John Doe".
- ▶ In programming, text values are called text strings.
- ▶ JavaScript can handle many types of data, but for now, just think of numbers and strings.
- ▶ Strings are written inside double or single quotes. Numbers are written without quotes.
- ▶ If you put a number in quotes, it will be treated as a text string.
- ▶

- ▶ `var pi = 3.14;`
- ▶ `var person = "John Doe";`
- ▶ `var answer = 'Yes I am!';`

Input & Output Statement js:-

▶ Input Statement:-

- ▶ There are only one input statement we used in JS.
- ▶ It Accept input data from user.
- ▶ Without inputing data it will not move to next page.
- ▶ `1} prompt () :-`
- ▶ The prompt method display the dialog box that prompts a visitor for input.
- ▶ A prompt box often used if you want the user to input a value before entering a page.

- ▶ When a prompt box display the user will have to click or cancel to proceed after entering an input value.
- ▶ The prompt () method returns the input value if the user clicks “ok” .
- ▶ If user clicks “cancel” the method returns null.

- ▶ Prompt(text, default text);

▶ Output Statement:-

▶ There are multiple output Statement we use in JS language .

▶ 1) `writeln()`

▶ 2) `alert()`

▶ 3) `getElementById()`

▶ 4) `confirm()`

- ▶ 1) Writeln or document.write():-
- ▶ This output statement is used to display string message .
- ▶ We write the string message in a simple quotation mark.
- ▶ Eg:-
- ▶ `Document.writeln('hello world!');`
- ▶ `Document.write(5+3);`

- ▶ 2) alert():-
- ▶ The alert () method display an alert box with a specified message & ok button.
- ▶ An alert box is often used if you want to make sure information comes through user .
- ▶ Eg:-
- ▶ `alert("hello | How are You?");`

▶ 3) getElementById(id):-

▶ You can give each & every Box in html a unique identifier (Id) JS can find boxes to manipulate **them**.

- ▶ 4) confirm();
- ▶ The confirm() method display a dialog box with a specified message ,
- ▶ Along with “ok” & “cancel” button.
- ▶ This confirm box is often used if you want the user to varyfy or accept something.

- ▶ Eg;-
- ▶ Confirm(“press a button. Either ok & cancel”);

the end