JavaScript

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Agenda

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Introduction

- JavaScript was developed by **Brendan Eich**.
- JavaScript is most commonly used as a client side scripting language.
- This means that JavaScript code is written into an HTML page. When a user requests an HTML page with JavaScript in it, the script is sent to the browser and it's up to the browser to do something with it.

What is JavaScript?

- JavaScript is a lightweight, interpreted programming language.
- Designed for creating network-centric applications.
- Complementary to and integrated with Java and HTML.
- Open and cross-platform

Advantages of JavaScript

- **Less server interaction**
- **Immediate feedback to the visitors**
- **Increased interactivity**
- **Richer interfaces**

Scripting <script> tag

- The <script> tag alerts the browser program to start interpreting all the text between these tags as a script.

- A simple syntax of your JavaScript will appear as follows.

<script **type**="text/javascript"> *JavaScript code* </script>

Understanding Variables

- JavaScript variables are containers for storing data values.
- We can define the variable with keyword **var**

```
var num1,num2;
```

Array in JS

- **Array** object is a global object that is used in the construction of array.

- Arrays are list-like objects whose prototype has methods to perform traversal and mutation operations.

We can create array as follows:

```
var cars = ["Saab", "Volvo", "BMW"];
```

Using JavaScript new keyword:

```
var cars = new Array("Saab", "Volvo", "BMW");
cars.length;                    //give you length of the array.
```

Operators in JS

Category	Operator	Name/Description	Example	Result
Arithmetic	+	Addition	3+2	5
	-	Subtraction	3-2	1
	*	Multiplication	3*2	6
	/	Division	10/5	2
	%	Modulus	10%5	0
	++	Increment and then return value	X=3; ++X	4
		Return value and then increment	X=3; X++	3
	--	Decrement and then return value	X=3; --X	2
		Return value and then decrement	X=3; X--	3
Logical	&&	Logical “and” evaluates to true when both operands are true	3>2 && 5>3	**True**
	||	Logical “or” evaluates to true when either operand is true	3>1 || 2>5	True
	!	Logical “not” evaluates to true if the operand is false	3!=2	True
Comparison	==	Equal	5==9	False
	!=	Not equal	6!=4	True
	<	Less than	3<2	False
	<=	Less than or equal	5<=2	False
	>	Greater than	4>3	True
	>=	Greater than or equal	4>=4	True
String	+	Concatenation(join two strings together)	“A”+”BC”	ABC

Control Structures

- if-else
- switch case
- while loop
- do while
- for loop
- break and continue

Functions in JS

There are two types of function is JS:

- Built in functions
- User Defined Functions

Few Built in functions are:

- isNaN() checks whether the parameter is not a number
- parseInt() convert input to Integer
- parseFloat() convert input to Float
- prompt()
- confirm()
- alert()

Events

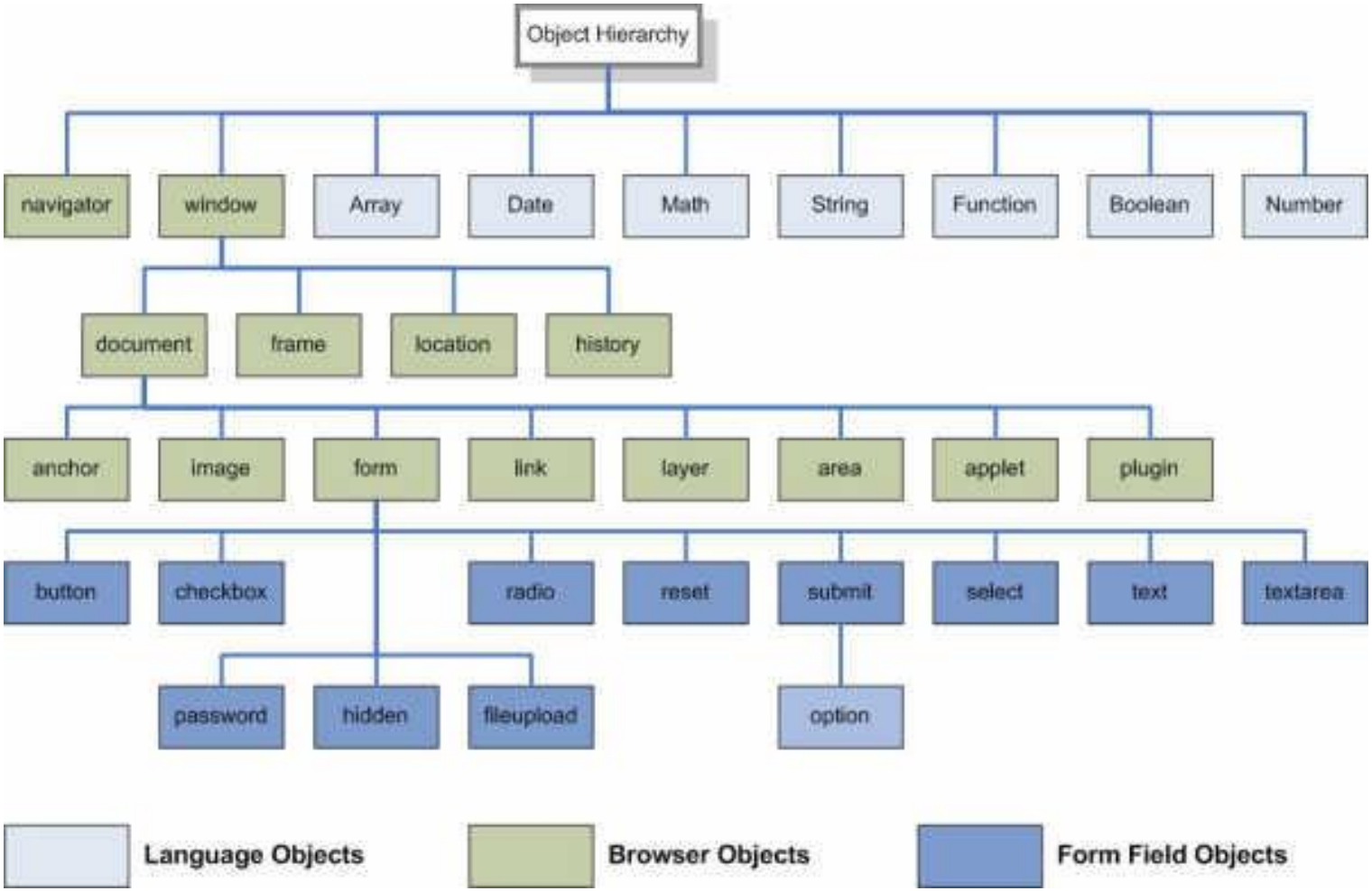
Event	Description
onchange	Script runs when the element changes
onsubmit	Script runs when the form is submitted
onreset	Script runs when the form is reset
onselect	Script runs when the element is selected
onblur	Script runs when the element loses focus
onfocus	Script runs when the element gets focus
onkeydown	Script runs when key is pressed
onkeypress	Script runs when key is pressed and released
onkeyup	Script runs when key is released
onclick	Script runs when a mouse click
ondblclick	Script runs when a mouse double-click
onmousedown	Script runs when mouse button is pressed
onmousemove	Script runs when mouse pointer moves
onmouseout	Script runs when mouse pointer moves out of an element
onmouseover	Script runs when mouse pointer moves over an element
onmouseup	Script runs when mouse button is released

JavaScript Browser Objects

- Here are some browser objects which helps us to interact with the browser:

- Window
- Screen
- Location
- Navigator
- Document
- History

Object Hierarchy



Window Object

- The window object represents an open window in a browser.
- If a document contain frames (<iframe> tags), the browser creates one window object for the HTML document, and one additional window object for each frame.

Window Object

Method	Description
alert()	Displays an alert box with a message and an OK button
blur()	Removes focus from the current window
close()	Closes the current window
open()	Opens a new browser window
print()	Prints the content of the current window
stop()	Stops the window from loading

Document Object

It provides properties and methods to work with many aspects of current document.

Few methods are:

- write()
- writeln()
- getElementById()
- getElementsByName()
- getElementsByTagName()

Navigator Object

- Navigator Object is an independent object in the hierarchy.
- It allows us to get access information of the current browser such as name, version and user platform.
- Few method are:
- navigator.javaenabled(); // to enable java on current browser

Screen Object

- The screen object is used to access details of the screen as width,height and resolution.

Property	Description
availHeight	Returns the height of the screen (excluding the Windows Taskbar)
availWidth	Returns the width of the screen (excluding the Windows Taskbar)
colorDepth	Returns the bit depth of the color palette for displaying images
height	Returns the total height of the screen
pixelDepth	Returns the color resolution (in bits per pixel) of the screen
width	Returns the total width of the screen

History Object

- This object contains history of all the pages visited.

Method	Description
back()	Loads the previous URL in the history list
forward()	Loads the next URL in the history list
go()	Loads a specific URL from the history list

Location Object

- The location object contains information about the current URL.
- The location object is part of the window object and is accessed through the window.location property.

Method	Description
assign()	Loads a new document
reload()	Reloads the current document
replace()	Replaces the current document with a new one

Any Questions?

Thank you!