WEB :: JavaScript

TalentSprint

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Learning Objectives

The content in this presentation is aimed at teaching learners to:

- Deploy event driven code
- Get the data from the form controls
- Dynamically change the page content
- Validate HTML WebPages
- Use JavaScript built-in objects

Accessing HTML Elements

We can access HTML Elements from Javascript to perform following action:

1. Change content
2. Change Style
3. Change CSS Classes
4. Setting and Getting Values
5. Changing Attribute values

```
var object = document.geElementById(“element_id”)
```

CSS to JavaScript

CSS Property	**Javascript Property**
color	object.style.color
text-align	object.style.textAlign
text-decoration	object.style.textDecoration
white-space	object.style.whiteSpace
text-transform	object.style.textTransform
letter-spacing	object.style.letterSpacing
text-indent	object.style.textIntent
line-height	object.style.lineHeight
word-spacing	object.style.wordSpacing

Similarly we can work with all CSS Properties in Javascript

CSS to JavaScript

Element Type	Javascript Property
Input	object.value object.name object.type
Img	object.src
Select	object.selectedIndex
Form	object.name object.action object.elements
Div, span, td etc.	object.innerHTML object.className

JavaScript

The String Object

Javascript Automatically converts between string primitives and String objects.

Syntax

```
var val = new String(“string”) ;
var txt =  “ string ”;
```

JavaScript

String Object Methods

charAt() returns the character at the specified index (position)

charCodeAt() returns the Unicode of the character at the specified index

concat() joins two or more strings, and returns a copy of the joined strings

valueOf() returns the primitive value of a String object

JavaScript

String Object Methods

indexOf() returns the position of the first found occurrence of a specified value in a string

lastIndexOf() returns the position of the last found occurrence of a specified value in a string

match() searches a string for a match against a regular expression, and returns the matches

JavaScript

String Object Methods

replace() searches a string for a value and returns a new string with the value replaced

search() searches a string for a value and returns the position of the match

substring() extracts a part of a string between two specified positions

toLowerCase() converts a string to lowercase letters

toUpperCase() converts a string to uppercase letters

JavaScript

String HTML Wrapper Methods

anchor() creates an HTML anchor that is used as a hypertext target.

big() creates a string to be displayed in a big font as if it were in a <big> tag.

blink() creates a string to blink as if it were in a <blink> tag.

bold() creates a string to be displayed as bold as if it were in a <b> tag.

JavaScript

String HTML Wrapper Methods

fixed() causes a string to be displayed in fixed-pitch font as if it were in a <tt> tag

fontcolor() causes a string to be displayed in the specified color as if it were in a <font color="color"> tag

Fontsize() causes a string to be displayed in the specified font size as if it were in a <font size="size"> tag

italics() causes a string to be italic, as if it were in an <i> tag

JavaScript

String HTML Wrapper Methods

link() creates an HTML hypertext link that requests another URL

small() causes a string to be displayed in a small font, as if it were in a <small> tag

strike() causes a string to be displayed as struck-out text, as if it were in a <strike> tag

sub() causes a string to be displayed as a subscript, as if it were in a <sub> tag

sup() causes a string to be displayed as a superscript, as if it were in a <sup> tag

JavaScript

The Array Object

- Store multiple values in a single variable

```
var fruits = new Array(“apple”, “ orange”, “ mango”);
```

- The Array parameter is a list of strings or integers
- The maximum length allowed for an array is 4,294,967,295
- You can create array by simply assigning values as follows:

```
var fruits = [“ apple”, “ orange”, “ mango”];
```

JavaScript

Array Methods

concat() returns a new array comprised of this array joined with other array(s) and/or value(s).

every() returns true if every element in this array satisfies the provided testing function.

filter() creates a new array with all of the elements of this array for which the provided filtering function returns true.

JavaScript

Array Methods

indexOf() returns the first (least) index of an element within the array equal to the specified value or 1 if none is found.

join() joins all elements of an array into a string.

lastIndexOf() returns the last (greatest) index of an element within the array equal to the specified value or 1 if none is found.

JavaScript

Array Methods

map() creates a new array with the results of calling a provided function on every element in this array.

pop() removes the last element from an array and returns that element.

push() adds one or more elements to the end of an array and returns the new length of the array.

JavaScript

Array Methods

reduce() apply a function simultaneously against two values of the array (from left- to-right) as to reduce it to a single value.

reduceRight() apply a function simultaneously against two values of the array (from right- to-left) as to reduce it to a single value.

reverse() reverses the order of the elements of an array – the first becomes the last, and the last becomes the first.

JavaScript

Array Methods

shift() removes the first element from an array and returns that element.

slice() extracts a section of an array and returns a new array.

some() returns true if at least one element in this array satisfies the provided testing function.

toSource() represents the source code of an object

JavaScript

Array Methods

sort() sorts the elements of an array.

splice() adds and/or removes elements from an array.

toString() returns a string representing the array and its elements.

unshift() adds one or more elements to the front of an array and returns the new length of the array.

forEach() calls a function for each element in the array.

JavaScript

The Date Object

- Built into the JavaScript language.
- Date objects are created with the new Date()
- different variant of Date() constructor:

```
new Date()
new Date(milliseconds)
new Date(datestring)
new Date(year,month,date[,hour,minute,second,
  millisecond])
```

JavaScript

Getter Methods of Date

Date() returns today's date and time

getDate() returns the day of the month for the specified date according to local time.

getDay() returns the day of the week for the specified date according to local time.

getFullYear() returns the year of the specified date according to local time.

JavaScript

Getter Methods of Date

getHours() returns the hour in the specified date according to local time.

getMilliseconds() returns the milliseconds in the specified date according to local time.

getMinutes() returns the minutes in the specified date according to local time.

JavaScript

Getter Methods of Date

getMonth() returns the month in the specified date according to local time.

getSeconds() returns the seconds in the specified date according to local time.

getTime() returns the numeric value of the specified date as the number of milliseconds since January 1, 1970, 00:00:00 UTC.

JavaScript

Setter Methods of Date

setDate() sets the day of the month for a specified date according to local time.

setFullYear() sets the full year for a specified date according to local time.

setHours() sets the hours for a specified date according to local time.

setMilliseconds() sets the milliseconds for a specified date according to local time.

JavaScript

Setter Methods of Date

setMinutes() sets the minutes for a specified date according to local time.

setMonth() sets the month for a specified date according to local time.

setSeconds() sets the seconds for a specified date according to local time.

setTime() sets the Date object to the time represented by a number of milliseconds since January 1, 1970, 00:00:00 UTC.

JavaScript

The Math Object

- Provides you properties and methods for mathematical constants and functions.
- Math is not a constructor.

JavaScript

The Math Object

- All properties and methods of Math are static and can be called by using Math as an object without creating it.
- Syntax to call properties and methods of Math:

```
var pi_val = Math.PI;
var sine_val = Math.sin(30);
```

JavaScript

Math Properties

E euler’s constant and the base of natural logarithms, approximately 2.718.

LN2 Natural logarithm of 2, approximately 0.693.

LN10 Natural logarithm of 10, approximately 2.302.

LOG2E Base 2 logarithm of E, approximately 1.442.

JavaScript

Math Properties

LOG10E Base 10 logarithm of E, approximately 0.434.

PI Ratio of the circumference of a circle to its diameter, approximately 3.14159.

SQRT1_2 Square root of 1/2; equivalently, 1 over the square root of 2, approximately 0.707.

SQRT2 Square root of 2, approximately 1.414.

JavaScript

Math Properties

abs() returns the absolute value of a number.

acos() returns the arccosine (in radians) of a number.

asin() returns the arcsine (in radians) of a number.

atan() returns the arctangent (in radians) of a number.

atan2() returns the arctangent of the quotient of its arguments.

JavaScript

Math Properties

ceil() returns the smallest integer greater than or equal to a number.

cos() returns the cosine of a number.

exp() returns EN, where N is the argument, and E is Euler's constant, the base of the natural logarithm.

floor() returns the largest integer less than or equal to a number.

JavaScript

Math Properties

log() returns the natural logarithm (base E) of a number.

max() returns the largest of zero or more numbers.

min() returns the smallest of zero or more numbers.

pow() returns base to the exponent power, that is, base exponent.

random() returns a pseudo-random number between 0 and 1.

JavaScript

Math Properties

round() returns the value of a number rounded to the nearest integer.

sin() returns the sine of a number.

sqrt() returns the square root of a number.

tan() returns the tangent of a number.

toSource() Returns the string “Math”.

JavaScript