



# Objects In JavaScript

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# Types of Object in JavaScript

- Built-in objects
- User Defined Objects
- Browser Object
- Document Object Model



# Built-in Object

- Provided by JavaScript language
- Implemented in Browser, if you have a browser, you have built-in object.
- Ex:
  - ☐ String
  - ☐ Number
  - ☐ Boolean
  - ☐ Array and so on.



# User Defined Object

- Objects created by Programmer
- JavaScript provided a built-in object called as **Object**.
- You can use **Object** to create new objects.



# JavaScript Built-in Object

- String
- Date
- Array
- Boolean
- Math



# Example of Built-in Object

- JavaScript is an Object Oriented Language.
- A JavaScript Object has properties and methods

- Ex: `String` JavaScript Object has `length` property and `toUpperCase()` method

```
<script type="text/javascript">  
  var txt="Hello World!"  
  document.write(txt.length)  
  document.write(txt.toUpperCase())  
</script>
```



# Date Objects

- Handles everything to do with dates, times, and timers in JavaScript
  - Can find out the date and time now
  - Can store dates
  - Do calculations with dates
  - Convert dates into Strings





```
<script>
```

```
var date=new Date();
```

```
var day=date.getDate();
```

```
var month=date.getMonth()+1;
```

```
var year=date.getFullYear();
```

```
document.write("<br>Date is: "+day+"/"+month+"/"+year);
```

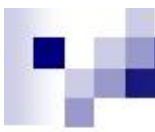
```
</script>
```





# Declare an Array

- `var members = new Array( );`
- Then populate the list...
  - `members[0] = "Steve";`  
`members[1] = "Jane";`
- Or...
  - `var members = new Array("Steve", "Jane");`



# JavaScript Math Methods

Let's see the list of JavaScript Math methods with description.

<code>max()</code>	It returns maximum value of the given numbers.
<code>min()</code>	It returns minimum value of the given numbers.
<code>pow()</code>	It returns value of base to the power of exponent.
<code>random()</code>	It returns random number between 0 (inclusive) and 1 (exclusive).
<code>round()</code>	It returns closest integer value of the given number.



# JavaScript Boolean

JavaScript Boolean is an object that represents value in two states: *true* or *false*.

```
Boolean b=new Boolean(value);
```

The default value of JavaScript Boolean object is *false*.

```
<script>
```

```
document.write(10<20);//true
```

```
document.write(10<5);//false
```

```
</script>
```



# Browser Object

- Objects Provided by browser.
- Allows programmer to access web page functionality
- Ex: window, document, navigator, history, images[], forms[], anchors[], links[].



# DOM

- Document Object Model
- allows us to make dynamic HTML page.
- Allows us to make dynamic CSS
- Allows us to modify HTML code dynamically
- Allows us to modify CSS code dynamically



# DOM Classification

- DOM Level0
- DOM Level1
- DOM Level2



# Dom Level 0

- Is same as Browser Object (Slide 5)
- Ex: window, document, navigator, history, images[], forms[], anchors[], links[].





# DOM Level 2

- ☐ Provide access to all elements of a web page using `document.all[ ]`



# DOM Level 3

- Combines features of Level 1 and Level 2.
- Provides Additional features like
  - Creating and Modifying CSS dynamically
  - Creating and Modifying XML dynamically
  - Provide library to traverse document tree.

This is the most important DOM level.



# Type of DOM (W3C)

- Core DOM
- HTML DOM
- CSS DOM
- Events DOM
- XML DOM



# Type of DOM (W3C)

- Core DOM

- ☐ Presents a marked document as a document tree
- ☐ Provide library for modifying a marked document dynamically.

- DOM HTML

- ☐ DOM that works with HTML
- ☐ Provide features to modify and create HTML page dynamically.



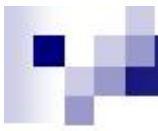
# Types of DOM (W3C)

- DOM CSS

- ☐ Provide library to modify and create CSS dynamically

- DOM Events

- ☐ Even Handling using DOM



**Thank You..!**