



UTM
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**Online
Learning**

JavaScript Fundamentals

Part 2

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Javascript Array

- Activity 08 (.1, .2, .3)

- Array is a built-in object in JS
 - http://www.w3schools.com/jsref/jsref_obj_array.asp
- Means have methods and properties
- Important properties:
 - length (total elements)
 - For traversing array elements
- Example method:
 - sort() : sorting array elements
 - join() : combine all array elements into a string

Javascript Array - creating

```
var a = new Array(12);
```

```
var b = new Array();
```

```
var c = new Array(12,10,11);
```

```
var d = [12,10,11]; // same as c
```

```
var e = [1,,,10]; // 4 elements array, only first &  
last element initialized
```

Javascript array: inserting values

```
var A =new Array();  
A[0]= 10;  
A[1]= 20;  
A[2]="Ali";  
A[3]=2.34;
```

Result:

A[0]	10
A[1]	20
A[2]	Ali
A[3]	2.34

JS Array: creating and accessing

```
<html>
<head>
<script type="text/javascript">
<!--
    var mycars = new Array()
    mycars[0] = "Saab"
    mycars[1] = "Volvo"
    mycars[2] = "BMW"

    for (i=0;i<mycars.length;i++)
    {
        document.write(mycars[i] + "<br />")
    }
//-->
</script>
</head>
<body>
</body>
</html>
```

JS Array: sort method

```
<html>
<head>
<script type="text/javascript">
<!--
    var arr = new Array(6)
    arr[0] = "Jani"
    arr[1] = "Hege"
    arr[2] = "Stale"
    arr[3] = "Kai Jim"
    arr[4] = "Borge"
    arr[5] = "Tove"

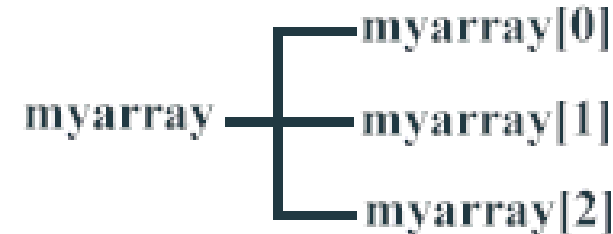
    document.write("<b>Before sort:</b> " + arr + "<br />")
    document.write("<b>After srt:</b> " + arr.sort())
//-->
</script>
</head>
<body>
</body>
</html>
```

Javascript Array - Multidimensional - Activity 08.4

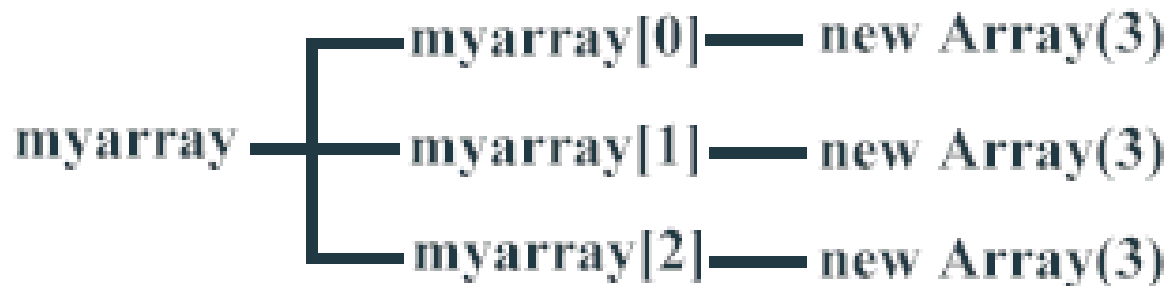
- Technically, JavaScript doesn't support multi-dimensional arrays
- Because array is an object, you can put object inside of another object, so emulating a multi dimensional array
- So it is possible to have a different dimension (column) for each row!

Javascript Array - Multidimensional

- `var myarray=new Array(3)`



- Create a multidimensional array



Javascript Array - Multidimensional

```
var myArray = new Array(3);

//create the second dimension with fix column (3)
for(i=0; i < 3; i++)
    myArray[i] = new Array(3);

//fill the array
for(i=0; i < 3; i++)
    for(j=0; j < 3; j++)
        myArray[i][j] = j;

//print the array
for(i=0; i < 3; i++)
{
    for(j=0; j < 3; j++)
        document.write(myArray[i][j] + ". ");
    document.write("<br />");
}
```

0, 1, 2,
0, 1, 2,
0, 1, 2,

Javascript Array - Multidimensional

```
//change the dimension of one of the row  
myArray[1] = new Array (5);  
for(i=0; i < 5; i++)  
    myArray[1][i] = i;  
  
//reprint the array  
for(i=0; i < 3; i++)  
{  
    var arr = myArray[i];  
    for(j=0; j < arr.length; j++)  
        document.write(myArray[i][j] + ". ");  
    document.write("<br />");  
}
```

```
0, 1, 2,  
0, 1, 2, 3, 4,  
0, 1, 2,
```

Javascript Function – Activity 09

- Functions in Javascript behave similar to numerous programming languages (C, C++, PHP, etc).
- Put in head section or external
- Variables inside a function is local
- Use return to return value and exiting the function (return without value) without finishing

Javascript Functions

Involves two steps:

- **Define:** *to define what processes should be taken*
- **Call/Invoke:** *to execute the functions*

Syntax of function definition:

```
function function_name (param1, param2, ...,  
    param_n)  
    //parameters are optional  
{  
    //function's code goes here  
  
    return value_or_object; //optional  
}
```

Javascript function – Activity 09

```
<html>
<head>
<script type="text/javascript">
<!--
    function popup()
    {
        alert("Hello World")
    }
//-->
</script>
</head>
<body>
<input type="button" onclick="popup()" value="popup">
</body>
</html>
```

Javascript Object – Activity 10

- Objects in Javascript can be created directly using variable declaration

JS object: directly instantiated

```
var empty = {}; // An object with no properties
var point = { x:0, y:0 };
var circle = { x:point.x, y:point.y+1, radius:2 };
var homer = {
  "name": "Homer Simpson",
  "age": 34,
  "married": true,
  "occupation": "plant operator",
  'email': "homer@example.com"
};
```

JS Object: directly instantiated using var

```
<html>
<head>
<script type="text/javascript">
<!--
    var homer =
    {
        "name": "Homer Simpson",
        "age": 34,
        "married": true,
        "occupation": "plant operator",
        'email': "homer@example.com"
    };

    function objectTest()
    {
        document.write(homer.name + "<br />")
        document.write(homer.age + "<br />")
        document.write(homer.married + "<br />")
        document.write(homer.occupation + "<br />")
        document.write(homer.email + "<br />")
    }
//-->
</script>
</head>
<body onLoad="javascript:objectTest();">

</body>
</html>
```


JS: Built-in objects – Activity 11

- **Date**
 - http://www.w3schools.com/js/js_obj_math.asp
- **String**
 - http://www.w3schools.com/js/js_obj_string.asp
- **Math**
 - http://www.w3schools.com/js/js_obj_date.asp

Javascript – Window & Boxes

Activity 12

- Alert message
- Prompt (getting input)
- Confirm message
- Redirection

JS: Alert

- Creating message box
- No input, only Ok button to continue
- Useful for debugging
 - `alert ("hello world");`
 - `var name = "rosely";`
 - `alert ("hello " + name);`
 - `var age = 17;`
 - `alert ("your age is: " + age);`

JS: Prompt

- Getting input from user
 - `name = window.prompt("Please enter your name", "polan");`

JS: Confirm

- Confirmation are most often used to *confirm* an important action that is taking place on a website.
- For example they may be about to submit an order or about to visit a link that will take them away from the current website.

JS: Confirm

```
<html>
<head>
<script type="text/javascript">
<!--
    function confirmation()
    {
        var answer = confirm("Leave this page?")

        if (answer)
        {
            alert("Bye bye!")
            window.location = "http://www.google.com/";
        }
        else
        {
            alert("Thanks for sticking around!")
        }
    }
//-->
</script>
</head>
<body>
<form>
<input type="button" onclick="confirmation()" value="Leave this page?">
</form>
</body>
</html>
```

JS: Comment

- Same as Java/C++
 - `//` single line comment
 - `/*`
 - `this`
 - `is`
 - a multi line comment `*/`

JS: Redirect

- To send user to your new website location
- In case of changing website address/domain

THANK YOU