




ITP 211

Object Oriented Analysis, Design and Project

JavaScript, jQuery



JavaScript, Not Java

- JavaScript is a programming language but more specifically, it is a scripting language. JavaScript codes are interpreted by the browser, just like HTML. They do not need to be compiled in order to run.
 - Java is a programming language, and codes written in Java has to be compiled first before they can run.
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➡ <http://htmlcheatsheet.com/js/>

Dates

```

a && b      // logical and
a || b      // logical or
    
```

Sun Apr 01 2018 23:24:15 GMT+0800 (Malay Peninsula Standard Time)

```

var d = new Date();
1522596255684 milliseconds passed since 1970
Number(d)

Date("2017-06-23");           // date declaration
Date("2017");                 // is set to Jan 01
Date("2017-06-23T12:00:00-09:45"); // date - time YYYY-MM-I
Date("June 23 2017");          // long date format
Date("Jun 23 2017 07:45:00 GMT+0100 (Tokyo Time)"); // time
    
```

Get Times

```

var d = new Date();
a = d.getDay();    // getting the weekday

getDate();         // day as a number (1-31)
getDay();          // weekday as a number (0-6)
getFullYear();     // four digit year (yyyy)
getHours();        // hour (0-23)
getMilliseconds(); // milliseconds (0-999)
getMinutes();      // minutes (0-59)
getMonth();        // month (0-11)
getSeconds();      // seconds (0-59)
getTime();         // milliseconds since 1970
    
```

Numbers and Math

```

var pi = 3.141;
pi.toFixed(0);       // returns 3
pi.toFixed(2);       // returns 3.14 - for working with i
pi.toPrecision(2);   // returns 3.1
pi.valueOf();        // returns number
Number(true);        // converts to number
Number(new Date())   // number of milliseconds since 1970
parseInt("3 months"); // returns the first number: 3
parseFloat("3.5 days"); // returns 3.5
Number.MAX_VALUE     // largest possible JS number
Number.MIN_VALUE     // smallest possible JS number
Number.NEGATIVE_INFINITY // -Infinity
Number.POSITIVE_INFINITY // Infinity
    
```

Math.

```

var pi = Math.PI;           // 3.141592653589793
Math.round(4.4);            // = 4 - rounded
Math.round(4.5);            // = 5
Math.pow(2,8);              // = 256 - 2 to the power of 8
Math.sqrt(49);              // = 7 - square root
Math.abs(-3.14);            // = 3.14 - absolute, positive value
Math.ceil(3.14);            // = 4 - rounded up
Math.floor(3.99);           // = 3 - rounded down
Math.sin(0);                // = 0 - sine
Math.cos(Math.PI);          // OTHERS: tan,atan,asin,acos,
Math.min(0, 3, -2, 2);      // = -2 - the lowest value
Math.max(0, 3, -2, 2);      // = 3 - the highest value
Math.log(1);                // = 0 natural logarithm
Math.exp(1);                // = 2.71828pow(E,x)
    
```

Arrays

```

var dogs = ["Bulldog", "Beagle", "Labrador"];
var dogs = new Array("Bulldog", "Beagle", "Labrador"); // i

alert(dogs[1]);           // access value at index, first
dogs[0] = "Bull Terrier"; // change the first item
    
```

Strings

```

var str = "Hello World!";
str.length; // 11
str.charAt(0); // H
str.charCodeAt(0); // 72
str.indexOf("World"); // 6
str.lastIndexOf("l"); // 10
str.substring(0, 5); // Hello
str.substr(0, 5); // Hello
str.slice(0, 5); // Hello
str.replace("World", "Universe"); // Hello Universe
str.split(""); // [H,e,l,l,o,W,o,r,l,d,!]
str.split(" "); // ["Hello","World!"]
    
```

DOM Manipulation

```

// Selecting Elements
document.getElementById("id");
document.getElementsByClassName("className");
document.getElementsByTagName("tagName");
document.querySelector("selector");
document.querySelectorAll("selectors");

// Modifying Content
element.innerHTML;
element.textContent;
element.setAttribute("attribute", "value");
element.removeAttribute("attribute");

// Event Handling
element.addEventListener(eventType, function() {
    // code to execute when event occurs
});
    
```

Form Validation

```



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```



E-Learning of JavaScript, jQuery and DOM

- Complete the entire module “JavaScript Essential Training” on Lynda.com
- <https://www.lynda.com/JavaScript-tutorials/JavaScript-Essential-Training/574716-2.html>
- In the module, you learn about
 - Basic functions of JavaScript such as manipulation of strings and numbers, conditional statements, Arrays, etc.
 - jQuery, which is a JavaScript library which will enable you to easily traverse and manipulate HTML document. With event handling, it can make the webpage dynamic (ever changing content)
 - HTML DOM (Document Object Model), which is the logical structure of document and the way a document is accessed and modified.



Assignment

- Assignment will be on JavaScript. Question will be released at the end of week 2.
- Submit your source code to Blackboard.