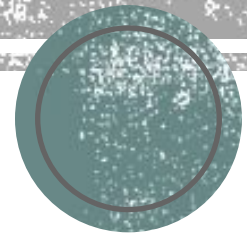


Full Stack Web Development

JavaScript / Getting Started



What Is JavaScript?

- **JavaScript** is a high level programming language used to create interactive effects within web browsers
- Can be used on the server and in more complicated environments that are not web based such as PDF docs, site-specific browsers and desktop widgets



The JavaScript Language

- **Scripting Language**
- **Interpreted**
- **Untyped**
- **Multi-Paradigm** – Object-Oriented, Imperative, Functional



What is ECMAScript?

- ECMAScript is a trademarked scripting-language specification and standard
- Standardized by **Ecma** International
- Implementations of ECMAScript include **JavaScript**, **Jscript** and **ActionScript**



Versions

- **ES5** - Standardized in 2009 implemented fairly completely in all browsers
- **ES6 / ES2015** – Partially implemented in most modern browsers
- **ES7 / ES2016** – Still being developed, can be used with additional tools



JavaScript Syntax

Set of rules for how JavaScript programs are built

JavaScript uses most of the usual instructions and syntax that many programming languages use

Variables, Expressions, Arrays, Objects, Loops, Conditionals, Comparisons, Switches, Functions



JavaScript Output

- **console.log('some value')** – Prints to console in browser or terminal
- **window.alert()** – Displays in an alert box in the browser
- **document.write()** – Display within `<script>` tags in the html
- **innerHTML** – Access an html element using `document.getElementById()` and output to it



Variables

Variables are used to store values

JavaScript uses the “**var**” keyword to declare variables and an equal sign to assign values

```
var x;
```

```
x = 100;
```

Same as

```
var x = 100;
```

- Variables ARE case sensitive
- Variables can contain letters, numbers, underscores (_) and dollar signs (\$)
- Variables MUST begin with a letter, underscore(_) or dollar sign (\$)



Expressions

- An expression is a combination of values, variables and operators which computes a value

$2 * 5$

$x * 5$

"Hello" + " " + "World"



Comments

Single Line Comment

```
var x = 5; // This is a single line comment
```

Multi Line Comment

```
/*  
    This is a  
    multi-line comment  
*/
```



Arrays

- JavaScript arrays allow us to store multiple values in a single variable

```
var names = ['Bob', 'Jim', 'Jose', 'Paula'];
```

```
console.log(names[0]); // Bob
```



Loops

Execute a block of code as long as a condition is true and repeat

For Loop:

```
for(i = 0; i < 10; i++){  
    console.log(i)  
}
```

While Loop:

```
while(i < 10){  
    console.log(i);  
    i++;  
}
```



Objects

Almost everything in JS can be considered an “object”.

Objects have properties and methods (functions)

```
// Assign Properties
```

```
var person = {name:"Mike", age:33, hairColor:"Brown"}
```

```
// Access Property
```

```
console.log(person.name); // Mike
```

```
// Accessing Method
```

```
person.getName()
```



Conditionals / If Statements

Runs a block of code if something is true

```
var x = 10;  
if(x > 5){  
    console.log('Yes');  
}
```

```
if(x > 5){  
    console.log('Yes');  
} else {  
    console.log('No');  
}
```



Switch

Selects one of many blocks of code to execute. Often used as an alternative for an if statement

```
Switch(x){  
  case 1:  
    console.log('Yes x is 1');  
    break;  
  case 2:  
    console.log('Yes x is 2');  
    break;  
  
  default:  
    console.log('No x is not 1 or 2');  
    break;  
}
```



Function

Block of code designed to run a task. Can be created and then invoked later on

```
function sayHello(){  
    console.log('Hello World');  
}
```

```
function sayHello(greeting){  
    console.log(greeting);  
}
```



Eduonix

