

# JavaScript

## Basic Syntax:

**var x** Treated as though declared at top of function or global  
**let x** let declarations exist only in block  
**const x** Declares immutable value, block level  
**for(var x...**  
the value x will be accessible after the loop since 'var'

## Variable Declarations:

```
var stringx = "hello" | 'hello';
var charx = 'h';
var intx = [0-9]+;
var boolx = true | false;
var arrayx = ["x", "y", "z"];
var arrayx = new Array("x", "y", "z");
var objectx = {key1:"val1", key2:"val2", ... };
    objectx.key1 => val1
function myfunction(in1, in2){
    ...
}
var x = function(a,b){return a*b};
    x(4,3) => 12
```

## Logic:

```
while ( condition ) { ... }
if ( condition ) { ... }
else if ( condition ) { ... }
else { ... }
switch ( expression ) {
    case label_x: ...
        [break;]

    ...
    default:
        [break;]
}
for( x = y; x < z; x++) { ... }
try { ... }
catch (e) { ... }
finally { ... }
```

## Reg-Ex:

<b>^</b>	Start of string	<b>a+</b>	One or more of a
<b>\$</b>	End of string	<b>a+?</b>	One or more, ungreedy
<b>.</b>	Any single character	<b>a{3}</b>	Exactly 3 of a
<b>(a b)</b>	a or b	<b>a{3,}</b>	3 or more of a
<b>(...)</b>	Group section	<b>a{,6}</b>	Up to 6 of a
<b>[abc]</b>	In range (a, b or c)	<b>a{3,6}</b>	3 to 6 of a
<b>[^abc]</b>	Not in range	<b>a{3,6}?</b>	3 to 6 of a, ungreedy
<b>\s</b>	White space	<b>\</b>	Escape character
<b>a?</b>	Zero or one of a	<b>[ :punct:]</b>	Any punctuation
<b>a*</b>	Zero or more of a	<b>[ :space:]</b>	Any space character
<b>a*?</b>	Zero or more, ungreedy	<b>[ :blank:]</b>	Space or tab

## Array Functions:

<b>arr1.concat(arr2);</b> (array)	<b>arr.pop();</b> (var)
<b>arr.filter(func);</b> (array)	<b>arr.push(var);</b> ()
<b>arr.find(func);</b> (int)	<b>arr.reduce(func);</b> (var)
<b>arr.findIndex(func);</b> (int)	<b>arr.reverse();</b> ()
<b>arr.forEach(func);</b> ()	<b>arr.slice(int, int);</b> (array)
<b>arr.join();</b> (string)	<b>arr.splice(int, int, var...);</b> ()
<b>arr.isArray();</b> (bool)	<b>arr.toString();</b> ()
<b>arr.lastIndexOf(func);</b> (int)	

## String Functions:

<b>str.charAt(int);</b>	(char)
<b>str.concat(str2);</b>	(str)
<b>str.endsWith(expr);</b>	(bool)
<b>str.includes(expr);</b>	(bool)
<b>str.indexOf(str);</b>	(int)
<b>str.lastIndexOf(str);</b>	(int)
<b>str.match(regex);</b>	(array)
<b>str.repeat();</b>	(str)
<b>str.replace(str/regex, str);</b>	(str)
<b>str.search(str/regex);</b>	(int)
<b>str.substr(int, int);</b>	(str)
<b>str.toLowerCase();</b>	(str)
<b>str.toUpperCase();</b>	(str)
<b>var.toString();</b>	(str)
<b>str.trim();</b>	(str)

## Math Functions:

<b>num.abs()</b>	<b>num.random()</b>
<b>num.acos()</b>	<b>num.round()</b>
<b>num.asin()</b>	<b>num.sqrt()</b>
<b>num.atan()</b>	<b>num.toExponential()</b>
<b>num.ceil()</b>	<b>num.toFixed()</b>
<b>num.floor()</b>	<b>num.toPrecision()</b>
<b>num.cos()</b>	<b>num.toString()</b>
<b>num.sin()</b>	<b>num.MAX_VALUE()</b>
<b>num.tan()</b>	<b>num.MIN_VALUE()</b>
<b>num.exp()</b>	<b>num.NEGATIVE_INFINITY()</b>
<b>num.max()</b>	<b>num.POSITIVE_INFINITY()</b>
<b>num.min()</b>	<b>num.isNaN()</b>
<b>num.pow()</b>	

## Reg-Ex Modifiers:

<b>g</b>	Global match	<b>x *</b>	Allow comments and whitespace in pattern
<b>i *</b>	Case-insensitive	<b>e *</b>	Evaluate replacement
<b>m *</b>	Multiple lines	<b>U *</b>	Ungreedy pattern
<b>s *</b>	Treat as single line		