

JavaScript®

Notes for Professionals



400+ pages

of professional hints and tricks

Contents

About	1
Chapter 1: Getting started with JavaScript	2
Section 1.1: Using console.log()	2
Section 1.2: Using the DOM API	4
Section 1.3: Using window.alert()	5
Section 1.4: Using window.prompt()	6
Section 1.5: Using window.confirm()	7
Section 1.6: Using the DOM API (with graphical text: Canvas, SVG, or image file)	8
Chapter 2: JavaScript Variables	10
Section 2.1: Defining a Variable	10
Section 2.2: Using a Variable	10
Section 2.3: Types of Variables	10
Section 2.4: Arrays and Objects	11
Chapter 3: Built-in Constants	12
Section 3.1: null	12
Section 3.2: Testing for NaN using isNaN()	12
Section 3.3: NaN	13
Section 3.4: undefined and null	14
Section 3.5: Infinity and -Infinity	15
Section 3.6: Number constants	15
Section 3.7: Operations that return NaN	16
Section 3.8: Math library functions that return NaN	16
Chapter 4: Comments	17
Section 4.1: Using Comments	17
Section 4.2: Using HTML comments in JavaScript (Bad practice)	17
Chapter 5: Console	19
Section 5.1: Measuring time - console.time()	22
Section 5.2: Formatting console output	23
Section 5.3: Printing to a browser's debugging console	24
Section 5.4: Including a stack trace when logging - console.trace()	26
Section 5.5: Tabulating values - console.table()	26
Section 5.6: Counting - console.count()	28
Section 5.7: Clearing the console - console.clear()	30
Section 5.8: Displaying objects and XML interactively - console.dir(), console.dirxml()	30
Section 5.9: Debugging with assertions - console.assert()	32
Chapter 6: Datatypes in JavaScript	33
Section 6.1: typeof	33
Section 6.2: Finding an object's class	34
Section 6.3: Getting object type by constructor name	34
Chapter 7: Strings	37
Section 7.1: Basic Info and String Concatenation	37
Section 7.2: Reverse String	38
Section 7.3: Comparing Strings Lexicographically	39
Section 7.4: Access character at index in string	40
Section 7.5: Escaping quotes	40
Section 7.6: Word Counter	41

Section 7.7: Trim whitespace	41
Section 7.8: Splitting a string into an array	41
Section 7.9: Strings are unicode	42
Section 7.10: Detecting a string	42
Section 7.11: Substrings with slice	43
Section 7.12: Character code	43
Section 7.13: String Representations of Numbers	43
Section 7.14: String Find and Replace Functions	44
Section 7.15: Find the index of a substring inside a string	45
Section 7.16: String to Upper Case	45
Section 7.17: String to Lower Case	46
Section 7.18: Repeat a String	46
Chapter 8: Date	47
Section 8.1: Create a new Date object	47
Section 8.2: Convert to a string format	49
Section 8.3: Creating a Date from UTC	50
Section 8.4: Formatting a JavaScript date	53
Section 8.5: Get the number of milliseconds elapsed since 1 January 1970 00:00:00 UTC	55
Section 8.6: Get the current time and date	55
Section 8.7: Increment a Date Object	56
Section 8.8: Convert to JSON	57
Chapter 9: Date Comparison	58
Section 9.1: Comparing Date values	58
Section 9.2: Date Difference Calculation	59
Chapter 10: Comparison Operations	60
Section 10.1: Abstract equality / inequality and type conversion	60
Section 10.2: NaN Property of the Global Object	61
Section 10.3: Short-circuiting in boolean operators	63
Section 10.4: Null and Undefined	65
Section 10.5: Abstract Equality (==)	65
Section 10.6: Logic Operators with Booleans	66
Section 10.7: Automatic Type Conversions	67
Section 10.8: Logic Operators with Non-boolean values (boolean coercion)	67
Section 10.9: Empty Array	68
Section 10.10: Equality comparison operations	68
Section 10.11: Relational operators (<, <=, >, >=)	70
Section 10.12: Inequality	71
Section 10.13: List of Comparison Operators	72
Section 10.14: Grouping multiple logic statements	72
Section 10.15: Bit fields to optimise comparison of multi state data	72
Chapter 11: Conditions	74
Section 11.1: Ternary operators	74
Section 11.2: Switch statement	75
Section 11.3: If / Else If / Else Control	77
Section 11.4: Strategy	78
Section 11.5: Using and && short circuiting	79
Chapter 12: Arrays	80
Section 12.1: Converting Array-like Objects to Arrays	80
Section 12.2: Reducing values	82
Section 12.3: Mapping values	84

Section 12.4: Filtering Object Arrays	84
Section 12.5: Sorting Arrays	86
Section 12.6: Iteration	88
Section 12.7: Destructuring an array	92
Section 12.8: Removing duplicate elements	93
Section 12.9: Array comparison	93
Section 12.10: Reversing arrays	94
Section 12.11: Shallow cloning an array	95
Section 12.12: Concatenating Arrays	95
Section 12.13: Merge two array as key value pair	97
Section 12.14: Array spread / rest	97
Section 12.15: Filtering values	98
Section 12.16: Searching an Array	99
Section 12.17: Convert a String to an Array	100
Section 12.18: Removing items from an array	100
Section 12.19: Removing all elements	101
Section 12.20: Finding the minimum or maximum element	102
Section 12.21: Standard array initialization	103
Section 12.22: Joining array elements in a string	104
Section 12.23: Removing/Adding elements using splice()	105
Section 12.24: The entries() method	105
Section 12.25: Remove value from array	105
Section 12.26: Flattening Arrays	106
Section 12.27: Append / Prepend items to Array	107
Section 12.28: Object keys and values to array	107
Section 12.29: Logical connective of values	108
Section 12.30: Checking if an object is an Array	108
Section 12.31: Insert an item into an array at a specific index	109
Section 12.32: Sorting multidimensional array	109
Section 12.33: Test all array items for equality	110
Section 12.34: Copy part of an Array	110
Chapter 13: Objects	112
Section 13.1: Shallow cloning	112
Section 13.2: Object.freeze	112
Section 13.3: Object cloning	113
Section 13.4: Object properties iteration	114
Section 13.5: Object.assign	115
Section 13.6: Object rest/spread (...)	116
Section 13.7: Object.defineProperty	116
Section 13.8: Accesor properties (get and set)	117
Section 13.9: Dynamic / variable property names	117
Section 13.10: Arrays are Objects	118
Section 13.11: Object.seal	119
Section 13.12: Convert object's values to array	120
Section 13.13: Retrieving properties from an object	120
Section 13.14: Read-Only property	123
Section 13.15: Non enumerable property	123
Section 13.16: Lock property description	123
Section 13.17: Object.getOwnPropertyDescriptor	124
Section 13.18: Descriptors and Named Properties	124
Section 13.19: Object.keys	126

Section 13.20: Properties with special characters or reserved words	126
Section 13.21: Creating an Iterable object	127
Section 13.22: Iterating over Object entries - Object.entries()	127
Section 13.23: Object.values()	128
Chapter 14: Arithmetic (Math)	129
Section 14.1: Constants	129
Section 14.2: Remainder / Modulus (%)	129
Section 14.3: Rounding	130
Section 14.4: Trigonometry	132
Section 14.5: Bitwise operators	133
Section 14.6: Incrementing (++)	135
Section 14.7: Exponentiation (Math.pow() or **)	135
Section 14.8: Random Integers and Floats	136
Section 14.9: Addition (+)	137
Section 14.10: Little / Big endian for typed arrays when using bitwise operators	137
Section 14.11: Get Random Between Two Numbers	138
Section 14.12: Simulating events with different probabilities	139
Section 14.13: Subtraction (-)	140
Section 14.14: Multiplication (*)	140
Section 14.15: Getting maximum and minimum	140
Section 14.16: Restrict Number to Min/Max Range	141
Section 14.17: Ceiling and Floor	141
Section 14.18: Getting roots of a number	142
Section 14.19: Random with gaussian distribution	142
Section 14.20: Math.atan2 to find direction	143
Section 14.21: Sin & Cos to create a vector given direction & distance	143
Section 14.22: Math.hypot	144
Section 14.23: Periodic functions using Math.sin	145
Section 14.24: Division (/)	146
Section 14.25: Decrementing (--)	146
Chapter 15: Bitwise operators	148
Section 15.1: Bitwise operators	148
Section 15.2: Shift Operators	150
Chapter 16: Constructor functions	151
Section 16.1: Declaring a constructor function	151
Chapter 17: Declarations and Assignments	152
Section 17.1: Modifying constants	152
Section 17.2: Declaring and initializing constants	152
Section 17.3: Declaration	152
Section 17.4: Undefined	153
Section 17.5: Data Types	153
Section 17.6: Mathematic operations and assignment	153
Section 17.7: Assignment	155
Chapter 18: Loops	156
Section 18.1: Standard "for" loops	156
Section 18.2: "for ... of" loop	157
Section 18.3: "for ... in" loop	159
Section 18.4: "while" Loops	159
Section 18.5: "continue" a loop	160
Section 18.6: Break specific nested loops	161

[Click here to download full PDF material](#)