

Essential JavaScript

Section	Subject	Page
One	JavaScript Introduction	2
	– Some of its main uses	5
Two	JavaScript Structure	6
	– Basic Structure of JavaScript	7
	– Using document.write	13
	– Concatenating	15
	– Case sensitivity	16
	– Use of Escape Characters	17
	– document.write with Calculations	18
	– Use of JS with HTML 	21
	– Use of Alert	22
	– Commenting code in JS	24
Three	Defining JavaScript Variables	27
	– Introduction	28
	– Defining JavaScript Variables	29
	– Naming JavaScript Variables	30
	– Populating JS Variables	33
	– Flexibility of Datatypes	34
	– Difference between var and let	35
	– Another way to define variables	37
	– 'use strict'	38
	– Deleting variables	40
	– Constant variable	41
Four	Manipulating Variables in JavaScript	43
	– Introduction	44
	– Mathematics	46
	– Incrementing Values	50
	– Prefix and Postfix	52
	– Additional Assignments	55
	– Concatenation	56
Five	Using Console to view errors	57
	– Introduction	58
	– Switching on in Firefox	60
	– Switching on in Opera	61
	– Switching on in Internet Explorer	62
	– Switching on in Safari	64
	– Switching on in Chrome	66
	– Using Console for messages	68
	– Additional useful Console commands	69
	– <i>Exercise One</i>	71
Six	Using JavaScript built in String Functions	75
	– Introduction	76
	– length	77
	– toLowerCase and toUpperCase	78
	– substr and substring	79
	– slice	82
	– concat	84
	– repeat	85
	– search	86
	– replace	87
	– includes	88
	– Ascii conversions	89
	– indexOf	92
	– Other String Functions	93
	– Nesting Functions	94

Essential JavaScript

Section	Subject	Page
Seven	Using built in Number Functions	95
	– Introduction	96
	– toString	97
	– toFixed	98
	– Number	99
	– parseInt	100
	– List of Functions	101
	– Constants	102
	– Math.round	103
	– Math.ceil	104
	– Math.floor	105
	– Math.random	106
	– Math.min & Math.max	108
	– Math.min & Math.max with String	109
	– Math Functions	110
	– Math Constants	111
– <i>Exercise Two</i>	112	
Eight	Introduction to JavaScript Arrays	114
	– Introduction	115
	– Numeric Arrays	116
	– Populating Numeric Arrays	117
	– Associative Arrays	120
	– Populating Associative Arrays	121
	– Multidimensional Arrays	124
	– Three dimensional arrays	128
	– Accessing Three Dimensional Arrays	129
	– Alternative declaration of Arrays	130
	– Multi-Dimensional Objects	131
Nine	Using Array Functions	132
	– Introduction	133
	– Using length()	134
	– toString()	135
	– sort	136
	– sort descending	137
	– fill	138
	– indexOf	139
	– pop	140
	– push	141
	– shift	142
	– unshift	143
	– splice	144
	– split	147
	– Object.keys	150
– Object.values	151	
– List of Functions	152	
– <i>Exercise Three</i>	153	
Ten	Conditional JavaScript Statements	160
	– Conditional tests	161
	– Comparison Operators	162
	– If statement structure	164
	– Grouping processes in an 'If' statement	166
	– Alternative processing	168
	– Multiple 'If' statements	169

Essential JavaScript

Section	Subject	Page
	- Testing Strings	173
	- Testing Booleans	179
	- Testing for nulls	181
	- Testing for undefined	182
	- Testing for Infinity	183
	- Testing for NaN	185
	- Multiple Condition tests (and)	186
	- Multiple Condition tests (or)	187
	- Multiple Condition tests (xor)	188
	- Nested If Conditions	189
	- Using Functions with Conditions	190
	- Checking Datatype	191
	- isArray	192
	- isFinite	193
	- isInteger	194
	- Date.parse	195
	- typeof	196
Eleven	Using Ternary in Condition Testing	200
	- Ternary	201
	- Ternary Variations	202
	- Nested Ternary	204
	- <i>Exercise Four</i>	205
Twelve	Using Switch in Condition Testing	208
	- Introduction	209
	- The Switch Syntax	210
	- Using Break with Switch	211
	- Using Default with Switch	213
	- Advanced Switch Testing	214
	- Mixing If Conditions with Switch	217
	- <i>Exercise Five</i>	219
Thirteen	Looping through values in JavaScript	222
	- Introduction	223
	- While Loops	224
	- Do .. While Loops	226
	- While Loops with Arrays	227
	- For Loops	228
	- For Loops with empty expressions	230
	- For Loops with more than one variable	232
	- Using Break to exit Loops	233
	- Advanced Breaking of Loops	234
	- Using Continue with Loops	240
	- For Of Loops with Arrays	243
	- Using Continue with Loops	240
	- Multidimensional Arrays with For Of	244
	- For In Loops with Arrays	246
	- Multidimensional Arrays with For In	247
	- Additional uses of break	249
	- Multidimensional Arrays with For Of	244
	- <i>Exercise Six</i>	251

Essential JavaScript

Section	Subject	Page
Fourteen	Using Debugger	257
	– Introduction	258
	– Breakpoints	260
	– Removing Breakpoints	264
	– Breakpoints and variables	265
Fifteen	Using Dates within JavaScript	267
	– Introduction	268
	– Displaying a simple Date	269
	– Date() instances	270
	– Date() and milliseconds	272
	– Date() and date components	276
	– Date() and Strings	279
	– Date() and Time-zones	285
	– Working with Dates	288
	– setDate()	289
	– setMonth()	291
	– setFullYear()	294
	– Other Date set functions	296
	– Outputting and Testing Dates	297
	– getDate	298
	– getMonth	299
	– getFullYear	300
	– Formatting Date Output	302
	– Comparing Dates	303
	– Other Date Functions	304
	– Math.min and Math.max with Dates	306
	– <i>Exercise Seven</i>	308
Sixteen	Alerts, Confirm and Prompt	311
	– Introduction	312
	– Using Alert	313
	– Using Confirm	315
	– Using Prompt	317
Seventeen	Regular Expressions	319
	– Introduction	320
	– Testing for 'Contains' within a String	323
	– Starts or Ends using Line Anchors	324
	– Starts and Ends using Line Anchors (or)	326
	– Using the Dot (Any Character)	327
	– Using {Intervals}	329
	– Using Character Lists []	331
	– Using Character Lists to exclude matches	334
	– Using Escape Sequences	335
	– Using the Question Mark (Optional)	337
	– Using the Plus sign (Mandatory)	339
	– Using the Star sign (Optional)	340
	– Backreferencing	341
	– Using match	343
	– Using search	345
	– Using replace	346
	– Using exec	347
	– Using test	349

Essential JavaScript

Section	Subject	Page
	– <i>Exercise Eight</i>	350
Eighteen	JavaScript Functions	354
	– Introduction	355
	– Rudimentary Functions	356
	– Function Positioning (Hoisting)	358
	– Passing Parameters to Functions	359
	– Passing Multiple Parameters	361
	– Defaulting Parameters in Functions	363
	– Returning Values	364
	– Returning Values in an Array	366
	– The scope of Variables	367
	– Functions using arguments	370
	– Self-Invoking Functions	373
	– Dynamic Function Calls	375
	– Calling other Functions within page	377
	– Calling Functions from files	382
	– Calling Functions using async	387
	– Calling Functions using defer	388
	– JavaScript Expressions	389
	– Arrow Functions	391
Nineteen	Using forEach with Arrays	394
	– Introduction	395
	– forEach with numeric Arrays	396
	– <i>Exercise Nine</i>	397
Twenty	Document Object Model	402
	– Introduction	403
Twenty One	Using innerHTML	408
	– Introduction	409
	– Using innerHTML	411
	– Using href	413
	– Multiple innerHTML	414
	– Using style	415
	– Images	417
	– innerHTML and Arrays	419
	– document.getElementById	420
	– document.getElementsByTagName	421
	– document.getElementsByClassName	423
	– parentNode / parentElement	427
	– <i>Exercise Ten</i>	428
Twenty Two	HTML Dynamic Elements	430
	– Introduction	431
	– setAttribute	436
	– Image	438
	– Ordered List	439
	– Select	442
	– Style	443
	– Miscellaneous	445
	– insertBefore	446
	– removeChild	447
	– cloneNode	448
	– <i>Exercise Eleven</i>	451

Essential JavaScript

Section	Subject	Page
Twenty Three	Using HTML events	455
	– Introduction	456
	– Mouse Events	458
	– Keyboard Events	469
	– In-line JavaScript	474
	– Bubbling and Capturing	476
	– Event.stopPropagation	479
	– addEventListener	481
	– removeEventListener	484
	– attachEvent	485
	– <i>Exercise Twelve</i>	486
Twenty Four	JavaScript Cookies	490
	– Introduction	491
	– Creating Cookies in JavaScript	492
	– Expiring Cookies in JavaScript	494
	– Other Cookie settings in JavaScript	496
	– Viewing Cookies in JavaScript	497
	– Deleting Cookies in JavaScript	500
Twenty Five	JavaScript Timer	502
	– Introduction	503
	– setTimeout	505
	– clearTimeout	506
	– setInterval	507
	– Countdown example	508
	– <i>Exercise Thirteen</i>	509
Twenty Six	JavaScript Environment	512
	– Introduction	513
	– screen	514
	– navigator	516
	– navigator (Geolocation)	519
	– location	522
	– location.assign	526
	– location.replace	527
	– location.reload	528
	– history	529
Twenty Seven	JavaScript Window	531
	– Introduction	532
	– Open	533
	– Close	537
	– Attributes	538
	– Closed	539
	– Opener	540
	– localStorage	541
	– sessionStorage	543
	– Sizes and locations	545
	– Movement	549
	– Miscellaneous	551
	– Attributes	552
	– Methods	553
– <i>Exercise Fourteen</i>	554	

Essential JavaScript

Section	Subject	Page
Twenty Eight	JavaScript Exceptions	557
	– Introduction	558
	– Exception Syntax	559
	– The 'try' and 'catch'	560
	– Standard Exceptions	563
	– RangeError	564
	– ReferenceError	565
	– SyntaxError	566
	– TypeError	567
	– URIError	568
	– The 'throw'	569
	– Re-throwing Exceptions	571
	– Finally	573
	– Ducking the throw	574
Twenty Nine	JavaScript Objects	576
	– Introduction	577
	– Defining Objects	579
	– Updating Objects	581
	– Amending Objects	582
	– Looping Objects	583
	– Using Standard Methods	585
	– Defining Methods	586
	– Changing Methods	590
	– Calling Methods	591
	– Constructors	593
	– Prototype	603
	– <i>Exercise Fifteen</i>	605
Thirty	HTML Forms and JavaScript	609
	– Introduction	610
	– Input Field	611
	– Input Field variations	612
	– Button	613
	– Input Field Validation using document.forms	614
	– Input Field Focus	615
	– Tab Index	616
	– Alternatives to using Alert	617
	– Checkboxes	622
	– Radio	623
	– Option	629
	– Dynamic Option	632
– TextArea	637	
– Submitting the Form	639	
Thirty One	Communication between JS and PHP	644
	– Introduction	645
	– Calling JavaScript from PHP	646
	– Passing value back from JS	649
	– <i>Exercise Sixteen</i>	651