

INDEX

Symbols

- { } (braces)
 - for function contents, 18
 - and object properties, 9
- == (double equals operator), 5
- === (triple equals operator), 5
- [] (square brackets)
 - for array literals, 10
 - for property access, 11–12
- [[]] (double-square-bracket notation), 17
- _ (underscore), in property name prefix, 38, 80

A

- accessor properties, 37–38
 - attributes, 41–43
 - creating, 42–43
- adding properties, 8
- anonymous functions, 20, 80
- apply() method, 27, 75
- arguments, functions as, 20
- arguments object, 21
- arity, 21
- Array built-in type, 8
- Array.isArray() method, 13–14
- array literals, 9–10
- Array.prototype, modifying, 62
- arrays
 - identifying, 13–14
 - passing to apply(), 27
- assignment expressions, 18
- attributes of properties, 38–44
 - accessor properties, 41–43
 - data properties, 40–41
- autoboxing, 14

B

- bind() method, 28
- Boolean object, 3, 15–16
- Boolean primitive wrapper type, 14–15
- braces ({ })
 - for function contents, 18
 - and object properties, 9
- bracket notation, for property access, 11–12
- built-in object prototypes, 62–63
- built-in types, instantiating, 8–11

C

- call() method, 26–27, 75
- [[Call]] property, 17
- capitalization, of constructor names, 50
- capitalize() method, for strings, 62
- charAt() method, 6
- classes, JavaScript lack of support for, 1
- closure functions, 81
- comparison functions, 20
- comparison without coercion, 5
- [[Configurable]] attribute, 39, 42
 - for sealed object, 46
- console.log function, 51
- constructor property, 50–51
 - changing by object literal notation, 59
- constructors, 6–7, 49–53
 - inheritance, 72–75
 - Object.defineProperty() method
 - inside, 52
 - private members for, 82–84
 - prototype use with, 57–60
 - purpose of, 51
 - scope-safe, 90–92

- constructors (*continued*)
 - stealing, 75–76
 - subtype, 72, 75–76
 - supertype, 72, 75–76
- create() method, 70
- creating
 - accessor properties, 42–43
 - objects, 6–7
 - properties, on temporary objects, 15
- Crockford, Douglas, 69
- D**
- data
 - sharing private, 83–84
 - storing on prototype, 57
 - types. *See* primitive types; reference types; types
- data properties, 37
 - attributes, 40–41
 - from mixins, 88–89
- Date built-in type, 8
- Date object, valueOf() method, 67
- declarations, vs. expressions, 18–19
- defineProperties() method, 43–44
- defineProperty() method, 39–41, 52
- [[Delete]] operation, for object property, 35
- delete operator, 35, 48
- dereferencing, objects, 7–8
- detecting properties, 33–35
- dot notation, for property access, 11
- double equals operator (==), 5
- double-square-bracket notation ([[]]), 17
- E**
- enumerable properties
 - adding to Object.prototype, 69
 - copying between supplier and receiver, 84
- [[Enumerable]] property attribute, 39, 42
- enumeration, 36–37
- equals operators, double (==) and triple (===), 5
- Error built-in type, 9
- errors
 - from constructors in strict mode, 53
 - for primitive wrapper objects, 16
- event support, adding to objects, 85–87
- expressions, vs. declarations, 18–19
- [[Extensible]] attribute, 45–47
- extensions for objects, preventing, 45
- F**
- falsy values, 33
- first-class functions, 2
- flexibility of JavaScript, 2
- for-in loops, 36, 69, 84
- frames of web pages, passing values between, 13
- freeze() method, 47, 61
- freezing objects, 47
- frozen objects, prototype modification and, 61
- Function constructor, 9, 10, 20
- function keyword, 18
- function literals, 10–11
- functions, 2, 17–29
 - declarations vs. expressions, 18–19
 - hoisting, 18–19
 - overloading, 23–24
 - parameters, 21–22
 - as values, 19–21
- G**
- garbage-collection language, JavaScript as, 7
- [[Get]] attribute, 41
- getOwnPropertyDescriptor() method, 44
- getPrototypeOf() method, 55
- getter functions, 37–38
- global object, this to represent, 25
- H**
- hash maps, JavaScript objects as, 48
- hasOwnProperty() method, 34–35, 53, 66, 69
- hoisting functions, 18–19
- I**
- if condition, 33
- immediately invoked function expression (IIFE), 80
- inheritance, 65–78
 - constructor, 72–75
 - methods from Object.prototype, 66–68
 - between objects, 69–72
 - prototype chaining, 65–69
 - pseudoclassical, 76, 87

- in operator, 53
 - testing for property instance with, 33–34
 - instanceof operator, 12–13
 - temporary objects and, 15
 - instances. *See also* objects
 - checking type of, 50–51
 - prototype link to constructor, 60
 - of reference types, 6
 - instantiating
 - built-in types, 8–11
 - objects, 6
 - primitive wrappers, 16
 - internal property, of functions, 17
 - isArray() method, 13–14
 - isExtensible() method, 45, 46
 - isFrozen() method, 47
 - isPrototypeOf() method, 55, 66
 - isSealed() method, 46
- K**
- keys() method, 36, 89–90
 - key/value pairs, 48
- L**
- length property, of functions, 21–22
 - literals, 3, 9
 - array, 10
 - function, 10–11
 - object, 9–10
 - regular expression, 11
- M**
- memory location, pointer to, 7
 - methods, 6, 24–28
 - adding to arrays, 62
 - primitive, 6
 - privileged, 80
 - prototypes for defining, 57–60
 - for supertypes, accessing, 77
 - mixins, 84–90
 - data properties from, 88–89
 - module patterns, 80–82
- N**
- names
 - for constructors,
 - capitalization of, 50
 - multiple functions with same, 23
 - for properties, 80
 - new operator, 6, 90–92
 - constructors and, 49, 50, 52
 - instantiating reference types with, 9
 - this object created with, 51
 - null value, 3
 - determining if a value is, 5
 - setting object variable to, 7–8
 - setting property to, 35
 - typeof operator and, 5
 - Number primitive wrapper type, 14–15
 - number type, 3
- O**
- Object built-in type, 9
 - Object constructor, 32
 - Object.create() method, 70
 - Object.defineProperties() method, 43–44
 - Object.defineProperty() method,
 - 39–41, 52
 - Object.freeze() method, 47, 61
 - Object.getOwnPropertyDescriptor()
 - method, 44
 - Object.getPrototypeOf() method, 55
 - Object.isExtensible() method, 45, 46
 - Object.isFrozen() method, 47
 - Object.isSealed() method, 46
 - Object.keys() method, 36, 89–90
 - object literals, 9–10
 - object patterns, 79–92
 - private and privileged members, 80–84
 - Object.preventExtensions() method, 45
 - Object.prototype.isPrototypeOf() method,
 - 55, 66
 - Object.prototype prototype
 - methods inherited from, 66–68
 - modifying, 68–69
 - objects, 2, 6, 31–48
 - creating, 6–7
 - dereferencing, 7–8
 - freezing, 47
 - inheritance, 69–72
 - methods, 24–28
 - modification, preventing, 45–47
 - properties, defining, 32–33
 - property inheritance from prototype, 65–69
 - reference types as, 2
 - sealing, 45–46
 - Object.seal() method, 45–46, 61
 - overloading functions, 23–24

- own properties
 - determining existence of, 66
 - determining whether
 - enumerable, 66
 - in operator to check for, 34
 - for objects, 32
 - vs. prototype properties, 55–56
- P**
- parameters, 21–22
- person object, module pattern for
 - creating, 81
- pointer to memory location, 7
- preventExtensions() method, 45
- preventing object modifications, 45–47
- primitive methods, 6
- primitive types, 2, 3–6
- primitive wrapper types, 14–16
- private data, sharing, 83–84
- private members, 80–84
 - for constructors, 82–84
- privileged members, 80–84
- properties, 6, 11–12, 80
 - adding or removing, 8
 - copying enumerable, between
 - receiver and supplier, 84–86
 - creating on temporary objects, 15
 - defining, 32–33
 - defining multiple, 43–44
 - detecting, 33–35
 - enumerable, adding to
 - Object.prototype, 69
 - enumeration, 36–37
 - identifying on prototype, 54
 - removing, 35
 - string literals for names, 9
 - types, 37–38
- property attributes, 38–44
 - changing, 39–40
 - retrieving, 44
- propertyIsEnumerable() method, 37, 39, 66
- _proto_ property, 55
- prototype chaining, 65–69, 71, 74
 - object without, 72
 - overwriting, 73
- prototype properties
 - identifying, 54
 - vs. own properties, 55–56
- prototype property, of functions, 53, 72
- [[Prototype]] property, 54–56, 60–61
- prototypes, 53–63
 - built-in object, 62–63
 - changing, 60–62
 - identifying properties, 54
 - overwriting, 59
 - property inheritance from, 65–69
 - use with constructors, 57–60
- pseudoclassical inheritance, 76, 87
- pseudoinheritance, mixins for, 84
- [[Put]] method, 32–33
 - for data properties, 37
- R**
- read-only property, 38
- receiver, copying enumerable
 - properties between
 - supplier and, 84–86
- Rectangle constructor, 73–75
- reference types, 2, 6–8
 - identifying, 12–13
- reference values, storing on prototype, 57–58
- RegExp built-in type, 9
- RegExp constructor, 11
- regular expression literals, 11
- removing properties, 8, 35
- retrieving property attributes, 44
- revealing module pattern, 82
- S**
- scope-safe constructors, 90–92
- sealed objects, prototype modification
 - and, 61
- sealing objects, 45–46
- seal() method, 45–46, 61
- [[Set]] attribute, 32–33, 41
- setter functions, 37–38
- sharing private data, 83–84
- signatures, function with multiple, 23
- sort() method, 20
- square brackets ([])
 - for array literals, 10
 - for property access, 11–12
- Square constructor, 73–75
- stealing constructors, 75–76
- strict mode
 - for nonextensible objects, 45
 - for sealed objects, 46
- string literals, as property names, 9
- String primitive wrapper type, 14–15

- strings
 - capitalize() method, 62
 - conversion of values to,
 - for comparison, 21
 - methods, 6
- string type, 3
- substring() method, 6
- subtype constructors, 72, 75–76
- sum() function, 21
- supertype
 - constructors, 72, 75–76
 - methods, accessing, 77
- supplier, copying enumerable
 - properties between receiver and, 84–86

T

- temporary objects, creating
 - properties on, 15
- this object, 25–26
 - changing value of, 26–28
 - to create length and width
 - properties, 76
 - creating with `new`, 51
- `toFixed()` method, 6
- `toLowerCase()` method, 6
- `toString()` method, 6, 35, 66, 67–68
- triple equals operator (`===`), 5
- truthy values, 33
- `typeof` operator, 4–5, 12
- types, 2. *See also* primitive types;
 - reference types
 - checking for different, 24
 - checking instance for, 50–51
 - instantiating built-in, 8–11

U

- undefined type, 3
- underscore (`_`), in property name
 - prefix, 38, 80

V

- `[[Value]]` attribute, 40
- `valueOf()` method, 66, 67
- values
 - functions as, 19–21
 - passing, between web page frames, 13
- variable object, 2
- variables, for primitive types, 3–4

W

- web pages, passing values between
 - frames, 13
- wrapper types, primitive, 14–16
- `[[Writable]]` attribute, 40
- write-only properties, 38