[VALUES](#_79pjkvk3zkqw)

[TYPES](#_qsmbx8xzr573)

[INHERITANCE](#_ej8zlojnuffy)

[OBJECTS](#_xsrjx5gcqsef)

[SCOPE](#_4ehx5mu25jbt)

[FUNCTIONS](#_xxv30odyk1f9)

[THIS](#_u8hos5te9u1p)

## VALUES

What is a value?

An expression that cannot be evaluated any further

What types of values does JS have?

primitives and non-primitives

What is a primitive?

A value with no properties

primitives - string, numeric, boolean, null, undefined

What is a type?

A specification for what values a piece of data may have and what operations may be performed on that data

Are javascript primitives objects?

no

How are primitives and other types of data different?

primitives have no properties

primitives are immutable

How is a primitive different from a constant?

A primitive is a type of value

A constant is a variable modifier stating that the value referred to by a variable cannot be changed.

Why primitive wrapper objects?

To allow you to do things like calling length on a number.

Javascript uses coersion to temporarily convert primitives into objects such that more robust behavior can be used than otherwise provided by primitives

What other types are there in javascript?

Objects - String, Number, Boolean, Array, Object, Function, RegExp

What is an object in Javascript?

A bag of properties which has a prototype property.

What is a literal?

Notation for a value

A literal creates a value of a specific type

What kinds of literals are there?

Arrays, Booleans, Floating points, integers, objects, Strings

What is coersion?

When an attempt to call a property of a primitive, the engine will attempt to coerce the primitive into an object

**VARIABLES**

A symbol associated with a value, a value which may change.

A constant is a special type of variable whose value cannot change.

Reference variable

a variable which references another variable

An alias for another variable

Refers to the same value / storage location as the underlying variable

Pass by reference / value

Refers to the way in which variables passed as function arguments are evaluated by a function

Passing by reference passes a pointer to a storage location as opposed to a copy of the value of the storage location itself such that any changes to the passed parameter affect the passed variable’s value.

Passing by value resolves the value of the variable before passing it to the function.

## TYPES

const?

Can be of any type, but cannot be changed

How do you remove a variable?

delete x

How do you check for the existence of a variable?

if (typeof x !== "undefined")

Reference type

A data type which points to a storage location

## INHERITANCE

What is inheritance?

The ability to reuse state, behavior

What is a prototype?

A property of every object

What is the prototype chain?

The set of references in which every object contains a prototype property, which in turn has a prototype property, up until a prototype property is reached which itself has a prototype of null

What is meant in javascript by an object being an instance of something?

TODO

In js, what can one object be an instance of?

A constructor function.

An object is an instance of a function constructor if somewhere in it's prototype chain the function constructor is present.

What is shadowing?

When an object contains a property that also exists lower in the prototype chain.

shadowed properties are not invoked

What are the downsides of using inherited properties?

The deeper in the chain a property exists, the more expensive it is to invoke.

What happens if a property isn't found on a prototype chain?

"undefined" is returned.

What is the prototype of an object created as an object literal?

Object.prototype

What properties are defined on Object.prototype?

TODO

When does inheritance make sense?

When several objects want to share common properties / behaviors.

## OBJECTS

Does the concept of a class exist in Javascript?

No.

Is there such a thing as an instance in javascript?

yes, except it's not based on the concept of a class, rather, an object's prototype chain

Is javascript object oriented?

Yes

How can javascript be object oriented if it has no concept of classes?

Everything is an object in javascript. Classes aren't needed to create an object.

What is an object?

A collection of unordered key/value pairs (attributes) encapsulated into a single entity.

Anything that isn't a primitive is an object

How are objects created in Javascript?

new Object()

Object literal

Function constructor

Object.create()

What is a constructor function?

A function designed to create an object having well known state and behavior.

Difference between a constructor function and a regular function?

Nothing save that a constructor function is invoked using the new keyword and creates a new object

What is Object.create?

Takes the prototype of the object as the first argument

When does it make sense to use each of the various ways of creating a new object?

TODO

What is the relationship between an array and an object?

An array is an object.

## SCOPE

What is meant by scope?

The context in which code is executed.

What types of scope are there?

Global scope and function scope.

what is the global scope in a browser?

the window object

## FUNCTIONS

anonymous function

a function for which no identifier exists to call it.

Is assigning an anonymous function to a variable the same as creating a named function?

Not necessarily.

self-invoked function

What is the value of this in an anonymous closure declared in ?

What is the value of this in a function defined as an object property?

The instance of the

What is the Function?

Used to create instances of function objects

What is a Function instance?

What is the relationship between functions and objects in javascript?

How are Strings created in Javascript?

new String()

String literal

given a closure defined in the global scope that returns a variable, what is the effect?

The returned variable is placed in global scope, however any other variables defined in the closure are hidden.

instanceof operator?

Checks whether the constructor argument was used to create any instance in the object's prototype chain.

Function vs function?

Same as calling new String() vs declaring a string literal "test".

declaring a function using function foo(text) {blah} is the same as saying window.foo = new Function('text', 'blah;')

Assigning property to a function constructor?

## THIS

What is meant by this?

TODO

How do you know what "this" refers to?

In the context of a function, it refers to the object that the function is a property of.

In the context of a function inherited from the prototype chain, refers to the inheriting object

## OPERATORS

=== equal value and equal type

== equal to

!== not equal value or not equal type

## ENGINE

what is meant by defining a function at parse time versus runtime?

What is a 2-pass read?

Read-time

Run-time

What happens at read-time?

engine interprests / reads all the code and evaluates everything at the global scope.

Attaches code to execute on event.

MISC

undefined

variable has been declared but uninitialized

null

representation of an empty value

shadowing

object has variable of same name as parameter

Can they be the same?

Does javascript have GC?

yes

Misc

arrays

map(fct)

returns an array holding the contents of invoking function on every element of the passed in array