Lecture 1: Getting started…

Olivier Liechti
TWEB

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Today's agenda

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14h00 - 15h00	60'	**Lecture** Introduction Fist tools JavaScript 101, part 1
15h00 - 15h10	*10'*	*Break*
15h10 - 16h25	75'	**Lecture** Introduction to lab (exercices) Heroku demo JavaScript 101, part 2

Quick Poll

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- **What is your current perception of Web development?**
- **Personal interest**
  - Web apps? It's **for junior developers and kids**, but real software engineers have better things to do.
  - Web apps? I am not a **graphics designer**… what am I doing here?
  - The Web is where some of the **most exciting technologies** are emerging.
  - When I grow up, I want to be a **front-end engineer**.

Quick Poll

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- **What is your current perception of Web development?**
- **Scope**
  - Web development is **purely about building user interfaces**. It's about HTML and CSS pages.
  - Web development is about building **complete applications**, including a user interface.
  - Is there **any kind of application** that does not rely on the Web, in one way or another? Mobile apps, interactive apps, business apps: all of this is built on the Web!

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Introduction

The Web as an Application Platform

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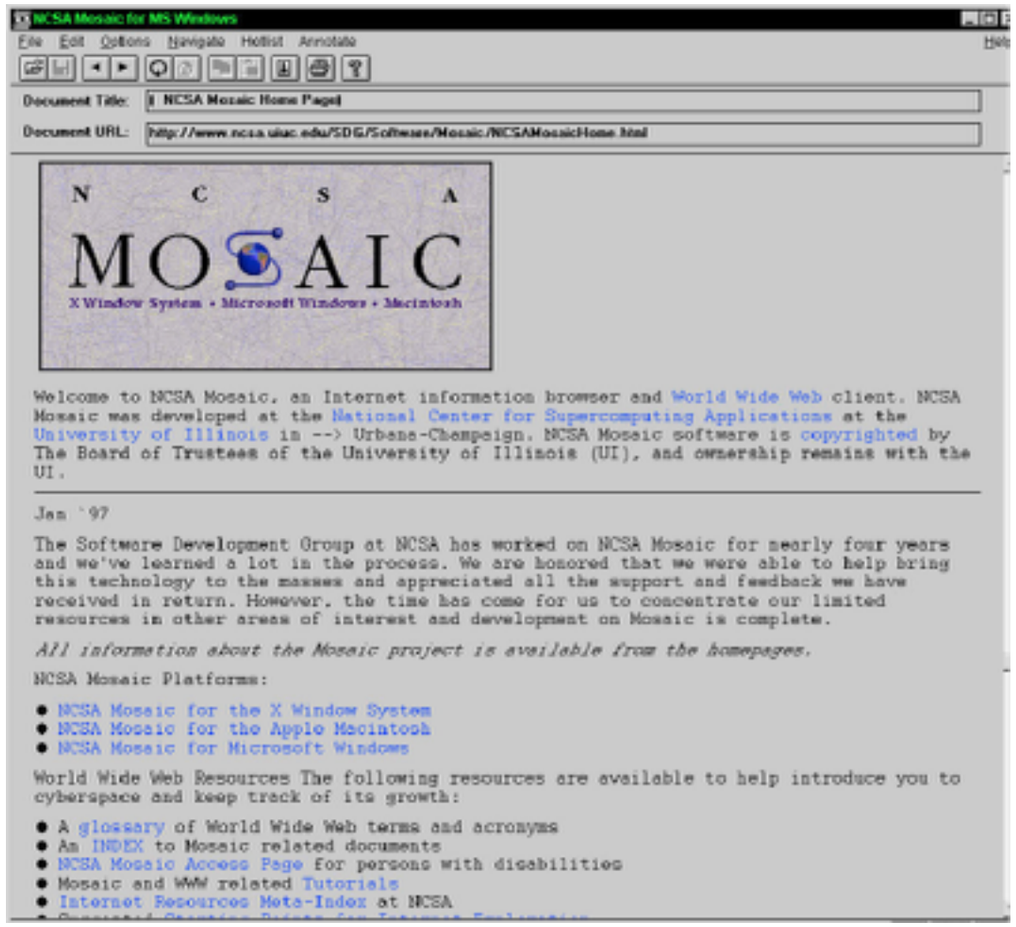

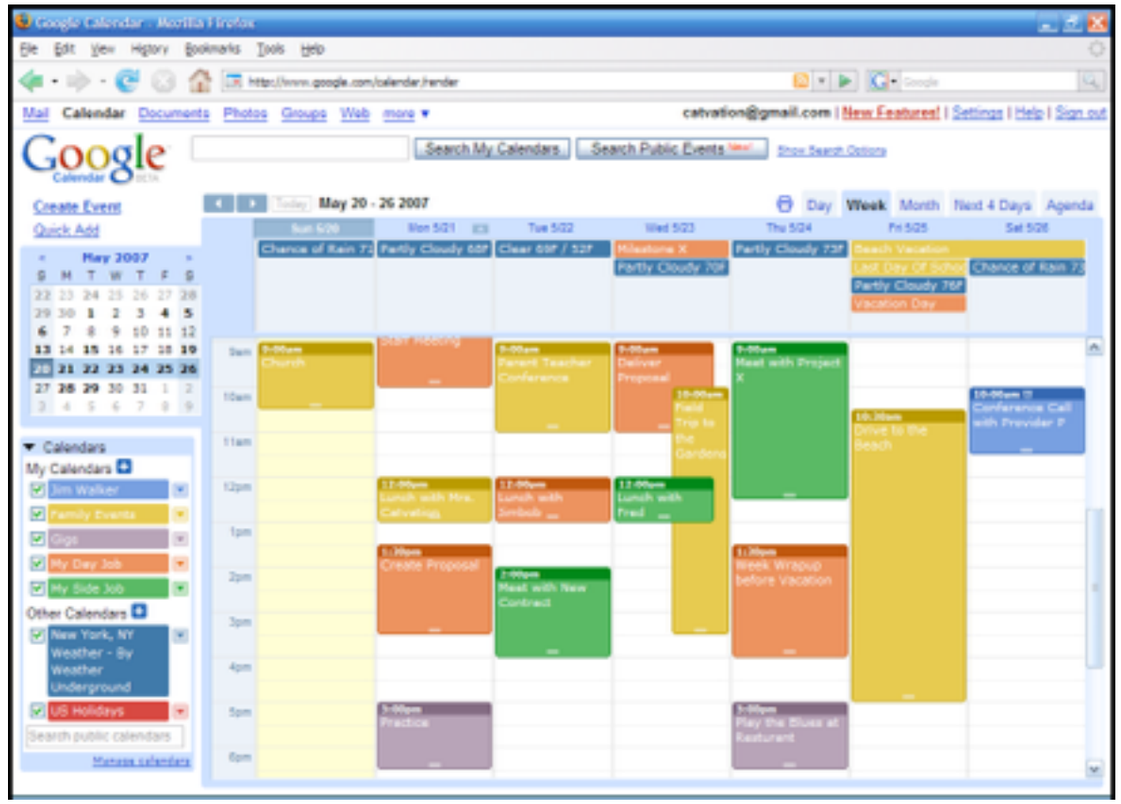

Some Trends

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SPA

Server Push

Mobile & RWD

Automated Development Workflows

Web of Things

Languages, Platforms, Communities

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Client

Server

Languages, Platforms, Communities

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JavaScript - End to End

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Client

Server

ECMAScript 6 is on its way (but not for us)

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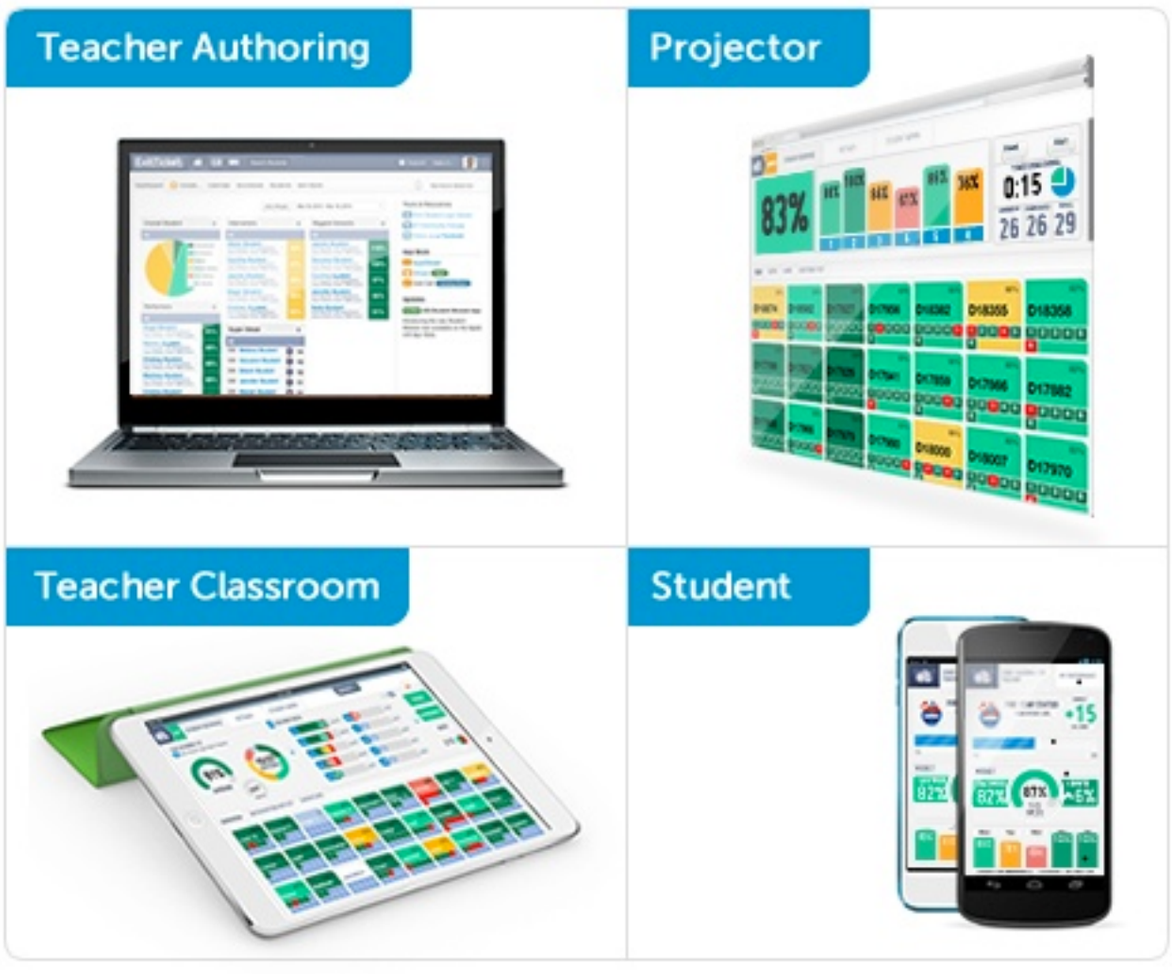
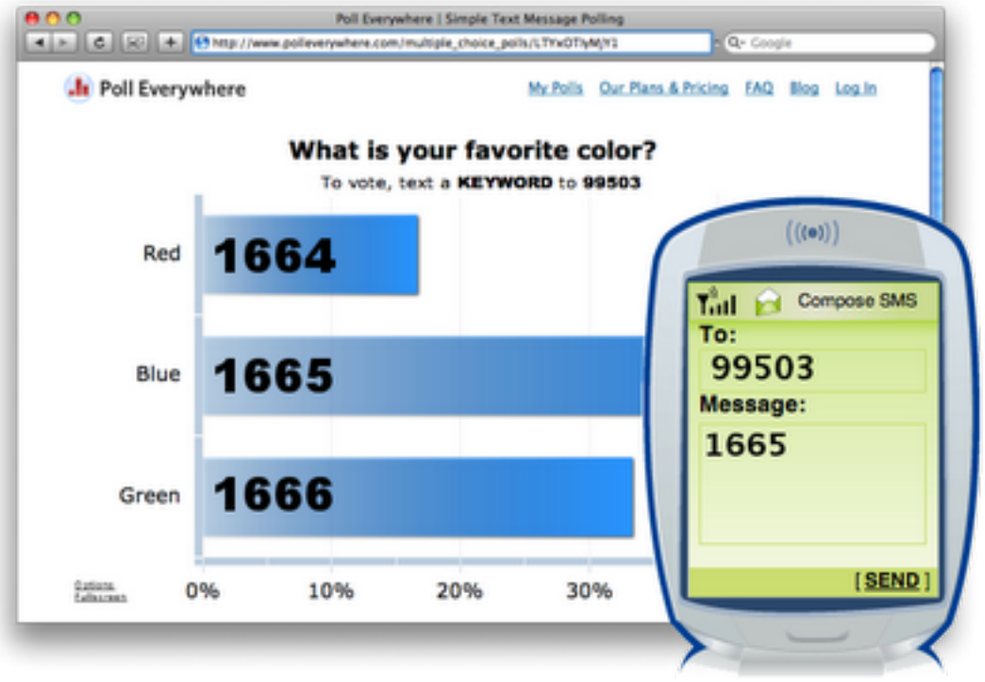
http://es6-features.org/

Project: interactive presentations & polls





Planning

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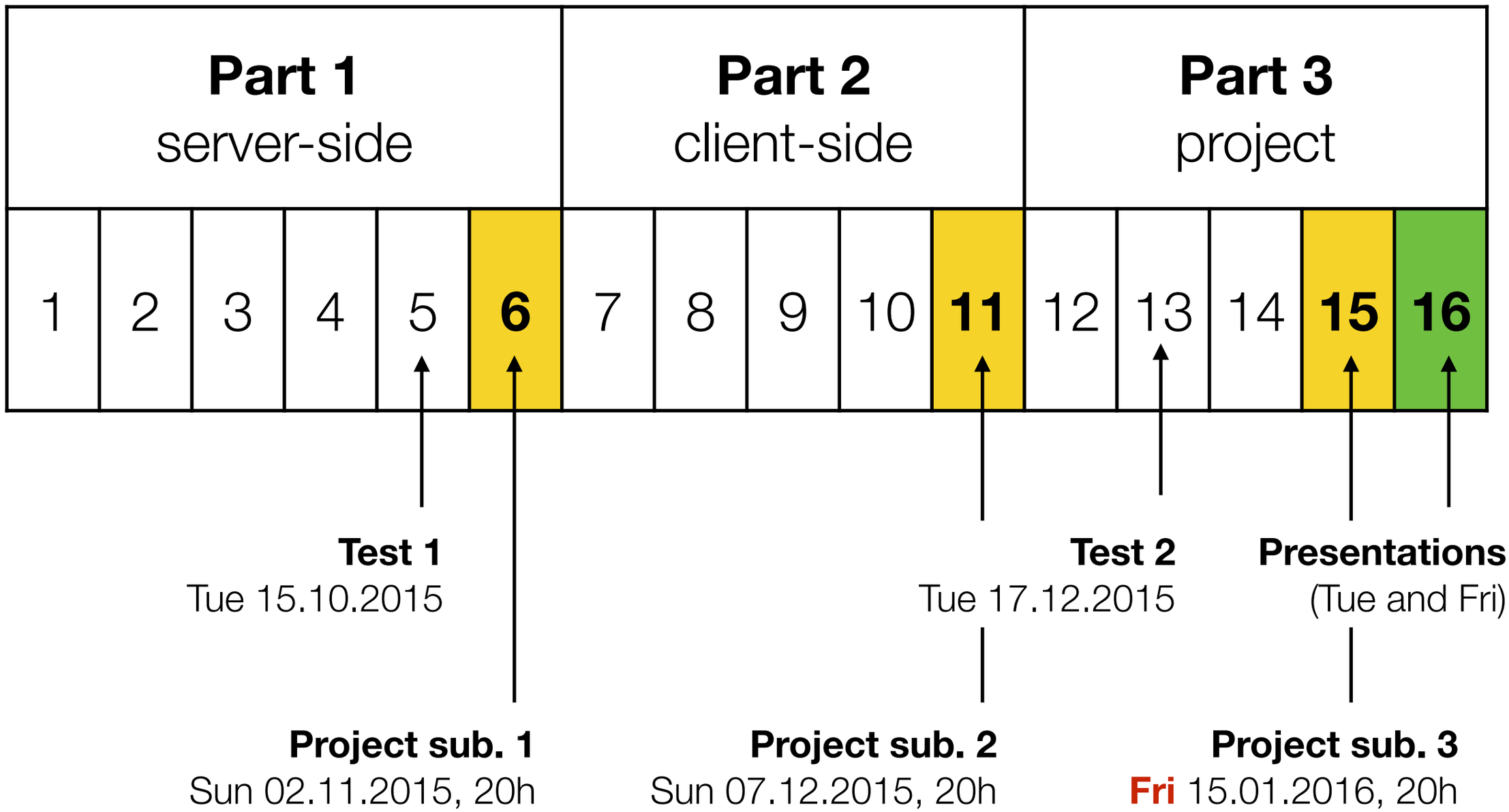

Evaluation

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Theory	Practice	
Test 1 50%	**Project part 1** 33%	
Test 2 50%	**Project part 2** 34%	
	Project part 3 33%	
Theory grade 50%	**Practice grade 50%**	**Final Grade**

Quick Poll

Quick Poll

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- **What is your current perception of JavaScript?**
- **Scope**
  - It's a **"toy" language for creating animations** on web pages, but I would not use it for anything "serious".
  - It's **a very powerful language**. It is essential on the client side, but it is also really interesting on the server side.

Quick Poll

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- **What is your current perception of JavaScript?**
- **Personal taste**
    - I **hate** it.
    - I am not a big fan.
    - It's kind of interesting.
    - I **love** it.
    - I don't care.

Quick Poll

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- **What is your current perception of JavaScript?**
- **Relationship to Java**
  - **It's Java**, with a few syntactic differences.
  - **It has nothing to do with Java**, except for some common syntax.

Quick Poll

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- **What is your current perception of JavaScript?**
- **Current knowledge**
  - **Novice**: I may have hacked a few scripts on web pages, but mostly by copy-pasting examples and without fully understanding the language (what is a prototype?).
  - **Intermediate**: I have used JavaScript quite a bit. I can describe the object-oriented model, I understand what a constructor is and how it works. I have quite a bit of experience with JQuery and other libraries. I am always working with a debugger.
  - **Expert**: closures and modules have no secret for me, I have read "JavaScript: the good parts". I have designed my development workflow with yeoman, grunt, bower and a few other tools. I know who Paul Irish is.

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Douglas Crockford: JavaScript: The Good Parts

https://www.youtube.com/watch?v=_DKkVvOt6dk

JavaScript is built on some very good ideas and a few very bad ones.

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JavaScript is an important language because it is the language of the web browser. Its association with the browser makes it one of the most popular programming languages in the world. **At the same time, it is one of the most despised programming languages in the world**. […]

Most people in that situation **don't even bother to learn JavaScript first**, and then they are surprised when JavaScript turns out to have significant differences from the some other language they would rather be using, and that those differences matter.

The amazing thing about JavaScript is that it is possible to get work done with it without knowing much about the language, or even knowing much about programming. It is a language with enormous expressive power. It is even better when you know what you're doing. **Programming is difficult business. It should never be undertaken in ignorance.**

JavaScript is important. That wasn't always so, but it's true now.

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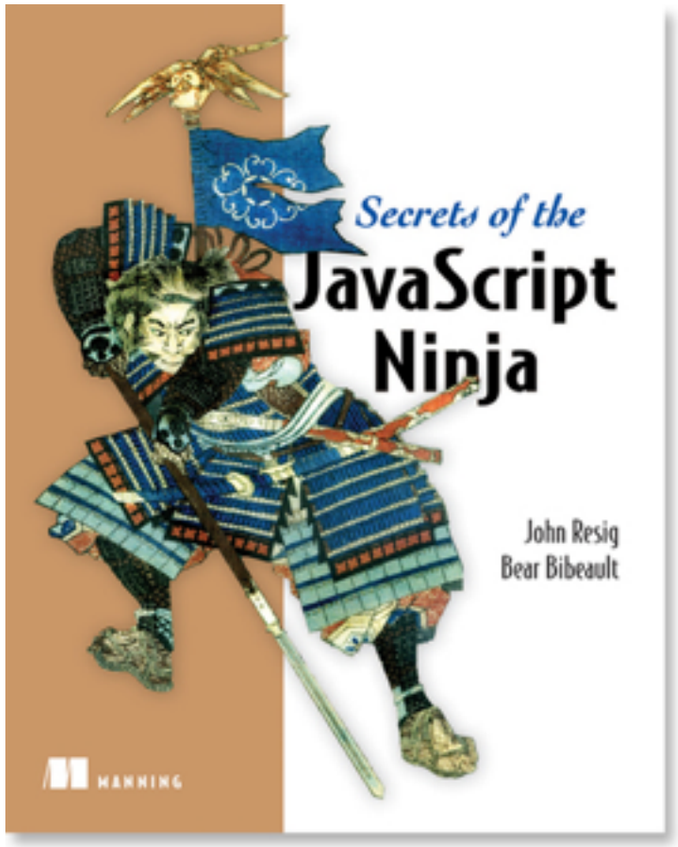
Web applications are expected to give users a rich user interface experience, and without JavaScript, you might as well just be showing pictures of kittens. More than ever, web developers need to have a sound grasp of the language that brings life to web applications.

And like orange juice and breakfast, **JavaScript isn't just for browsers anymore**. The language has knocked down the walls of the browser and is being **used on the server** in engines such as Rhino and V8, and in frameworks like Node.js.

Although this book is primarily focused on JavaScript for web applications, the fundamentals of the language presented in part 2 of this book are applicable across the board.

With more and more developers using JavaScript, it's now more important than ever that they **grasp its fundamentals**, so that they can become true ninjas of the language.



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Tools, part 1

Experimenting with JavaScript

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What do I need to write, execute and debug JavaScript code?

- Should I work on the **server side** or on the **client side**?
- Should I use a **simple text editor** or a **complete IDE**?
- Should I rather use an **online programming environment**?
- What kinds of **developer tools**, such as debuggers, are available?

Browsers and Developers Tools

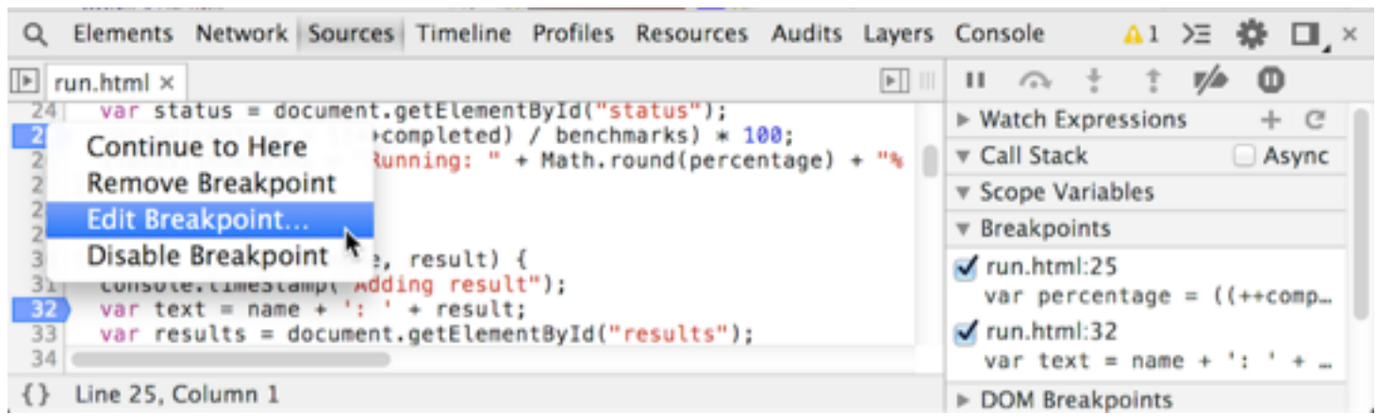
Browsers and Developers Tools

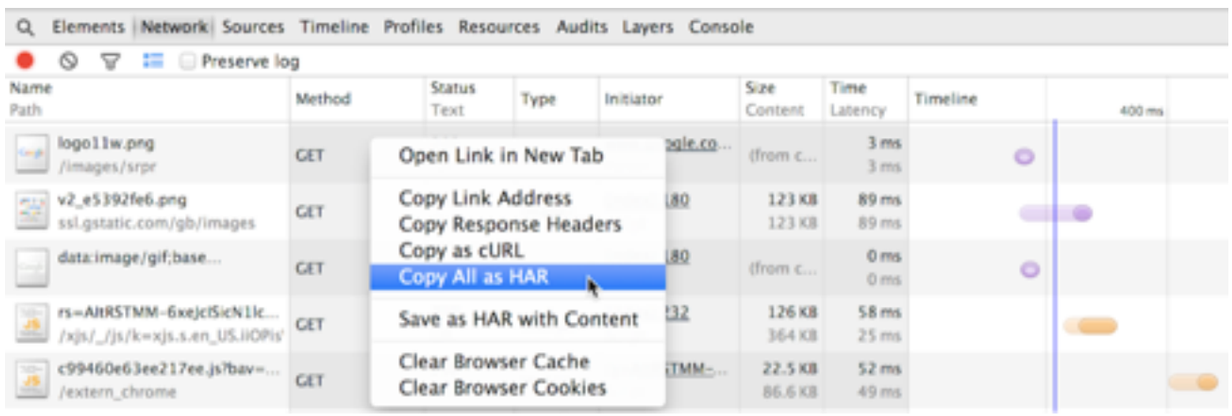
Chrome DevTools Overview

https://developer.chrome.com/devtools

The Chrome Developer Tools (DevTools for short), are a set web authoring and debugging tools built into Google Chrome. The DevTools provide web developers deep access into the internals of the browser and their web application. Use the DevTools to efficiently track down layout issues, set JavaScript breakpoints, and get insights for code optimization.

> **Note:** If you are a web developer and want to get the latest version of DevTools, you should use **Google Chrome Canary**.





How to access the DevTools

The DevTools window

Inspecting the DOM and styles

Working with the console

Debugging JavaScript

Improving network performance

Audits

Improving rendering performance

JavaScript CSS performance

Inspecting storage

Further reading

Further resources +

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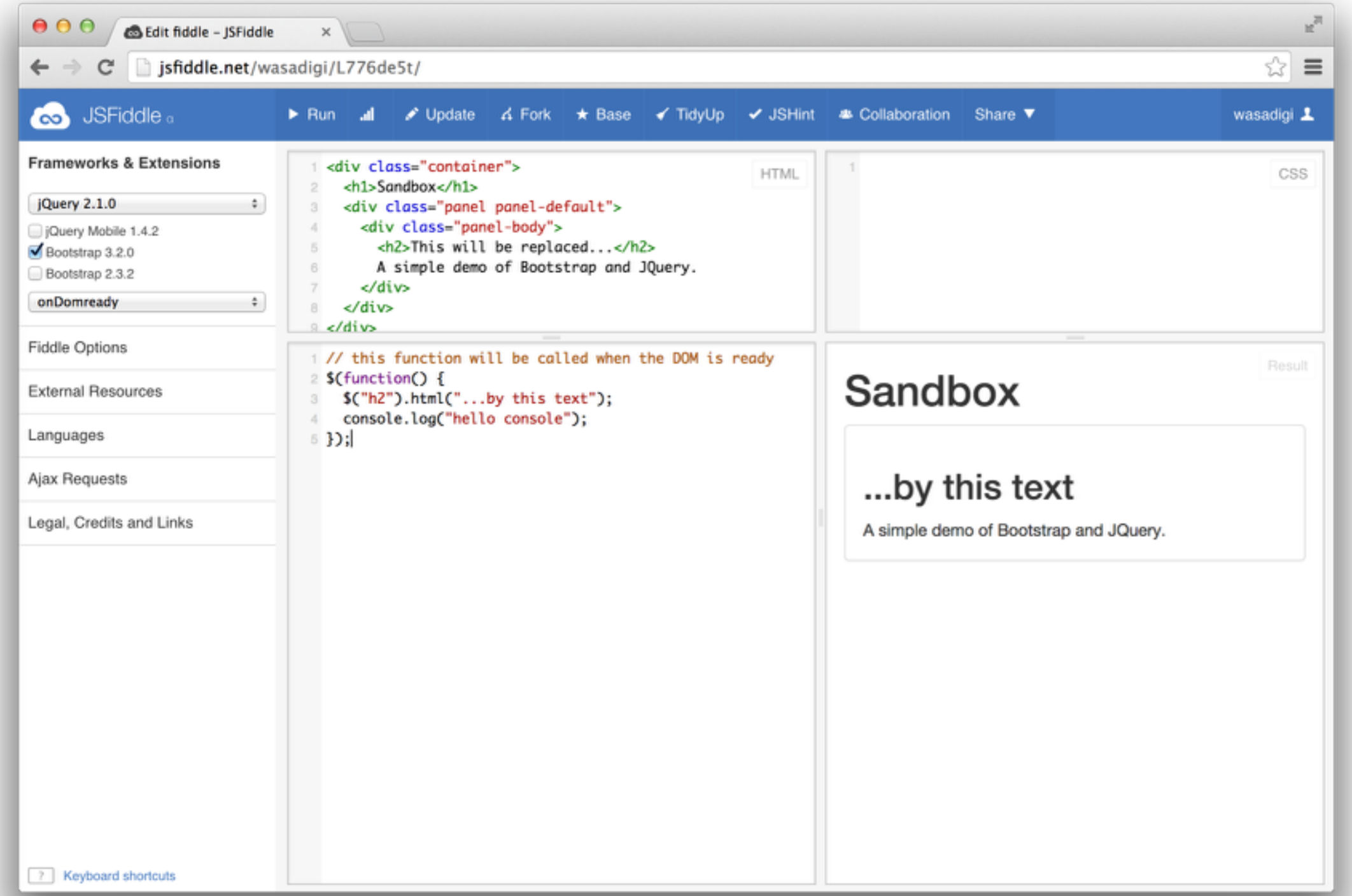
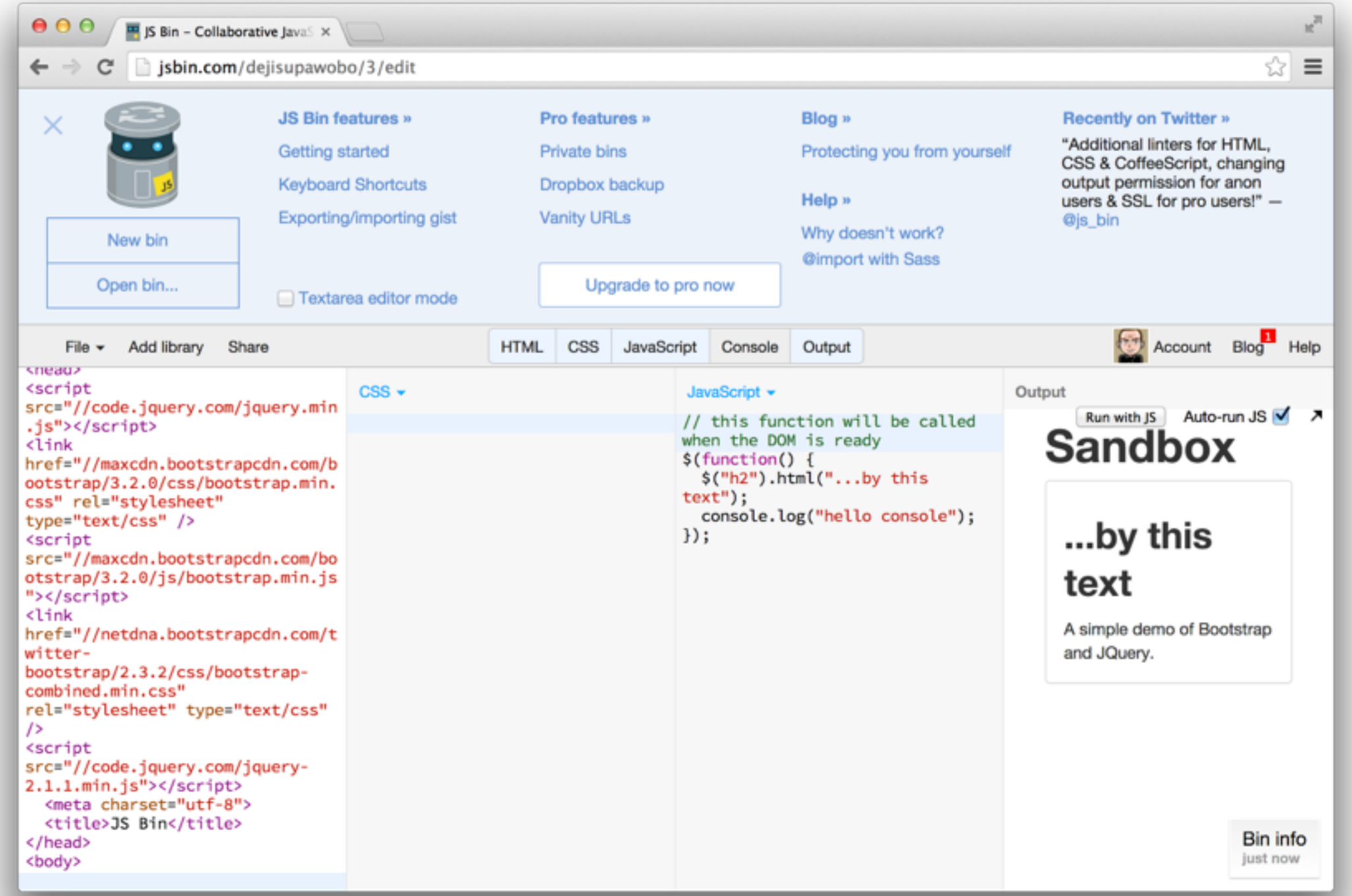
Setup 1: Online Programming Environment

- There are several online environments, which can be used to write, execute, debug and **share** JavaScript programs.
- Use your browser and **developer tools** within your browser.

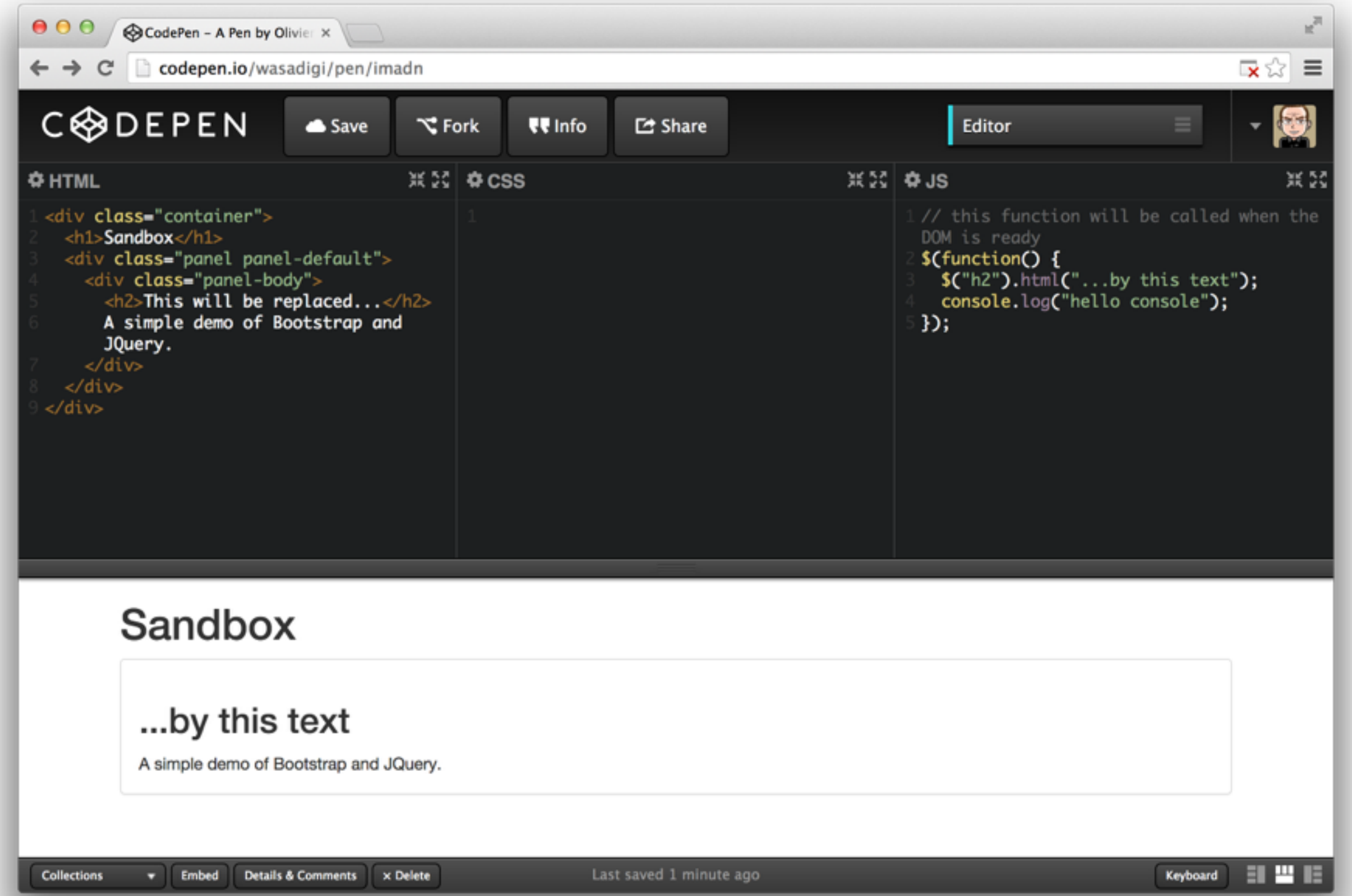
Experimenting with JavaScript



Experimenting with JavaScript



Experimenting with JavaScript



Experimenting with JavaScript

Codepen Vs JSFiddle Vs CSSDeck Vs Liveweave Vs JSBin Vs Dabblet

January 13, 2014

http://mediaunmasked.com/reviews/software/codepen-jsfiddle-cssdeck-liveweave-jsbin-dabblet/

Experimenting with JavaScript

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Setup 2: IDE + Browser + Dev Tools

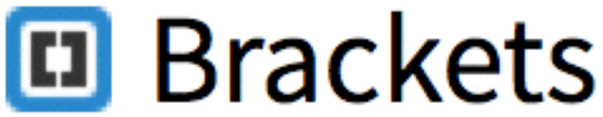
- Select an editor to write the JavaScript (and HTML/CSS) code.
- **Configure the editor with "JSLint" capabilities**
- Select one browser.
- Use developer tools within the browser.

Some of the Available Editors…

TextMate

Komodo IDE

Sublime Text



Cloud9 IDE

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JavaScript 101 (Part 1)

JavaScript 101, Part 1

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- Types
- Scopes
- Objects
- Prototypal inheritance
- Functions
- Constructors
- Arrays

Rule #1
JavaScript defines 6 types

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```
var aNumber = 3.12;
var aBoolean = true;
var aString = "HEIG-VD";
var anObject = {
  aProperty: null
};

// t is true for all of these:
var t;
t = typeof aNumber === "number";
t = typeof aBoolean === "boolean";
t = typeof aString === "string";
t = typeof anObject === "object";
t = typeof anObject.aProperty ===
"object";
t = typeof anObject.foobar ===
"undefined";
```

http://codepen.io/wasadigi/full/tJFoy/

- The 6 types are:
  - number
  - boolean
  - string
  - object
  - undefined
  - null
- `null` is a type, but `typeof null === object`.
- JavaScript is a dynamic language: when you declare a variable, you don't specify a type (and the type can change over time).

Rule #2
There are 2 scopes for variables: the (evil) global scope and the function scope

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```
var aVariableInGlobalScope;

function myFunction() {
  var aVariableInFunctionScope;
      anotherVariableInGlobalScope;
}

function myFunction2() {
  for (i=0; i<10; i++) {
    //i is in global scope!
  }
  for (var j=0; j<10; j++) {
    //j is in function scope!
  }
}
```

http://codepen.io/wasadigi/full/sucyK

- A variable declared within a function is **not accessible** outside this function.
- Unless using **strict mode**, it is not mandatory to declare variables (beware of typos…)
- Two scripts loaded from the same HTML page share the same global scope (beware of **conflicts**…).
- There is **no block scope**.

Rule #3
Objects are dynamic bags of properties

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```
// let's create an object
var person = {
  firstName: 'olivier',
  lastName: 'liechti'
};

// we can dynamically add properties
person.gender = 'male';
person['zip'] = 1446;

// and delete them
delete person.zip;

for (var key in person) {
  console.log(key + " : " +
person[key]);
};
```

http://codepen.io/wasadigi/full/cmjGA

- There are different ways to **access properties** of an object.
- JavaScript is **dynamic**: it is possible to **add** and **remove** properties to an object at any time.
- Every object has a different list of properties (**no class**).

Rule #4
The language has no support for classes
There are 3 ways to create objects

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```
// create an object with a literal
var person = {
  firstName: 'olivier',
  lastName: 'liechti'
};

// create an object with a prototype
var child = Object.create(person);

// create an object with a constructor
var child = new Person('olivier',
'liechti');
```

- **`class`** is a reserved word in JavaScript, but it is not used in the current version of the language (reserved for the future).
- A **constructor** is function like any other (uppercase is a coding convention).
- It is the use of the **`new`** keyword that triggers the object creation process.

Rule #5
Every object inherits from a prototype object

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```
var person = {
    firstName: "olivier",
    lastName: "liechti"
};
// person's prototype is Object.prototype

var father = {};
var child = Object.create(father);
// child's prototype is father

function Person(fn, ln) {
  this.firstName = fn;
  this.lastName = ln;
}
var john = new Person("John", "Doe");
// john's prototype is Person.prototype
```

http://codepen.io/wasadigi/full/nklil

Rule #5
Every object inherits from a prototype object

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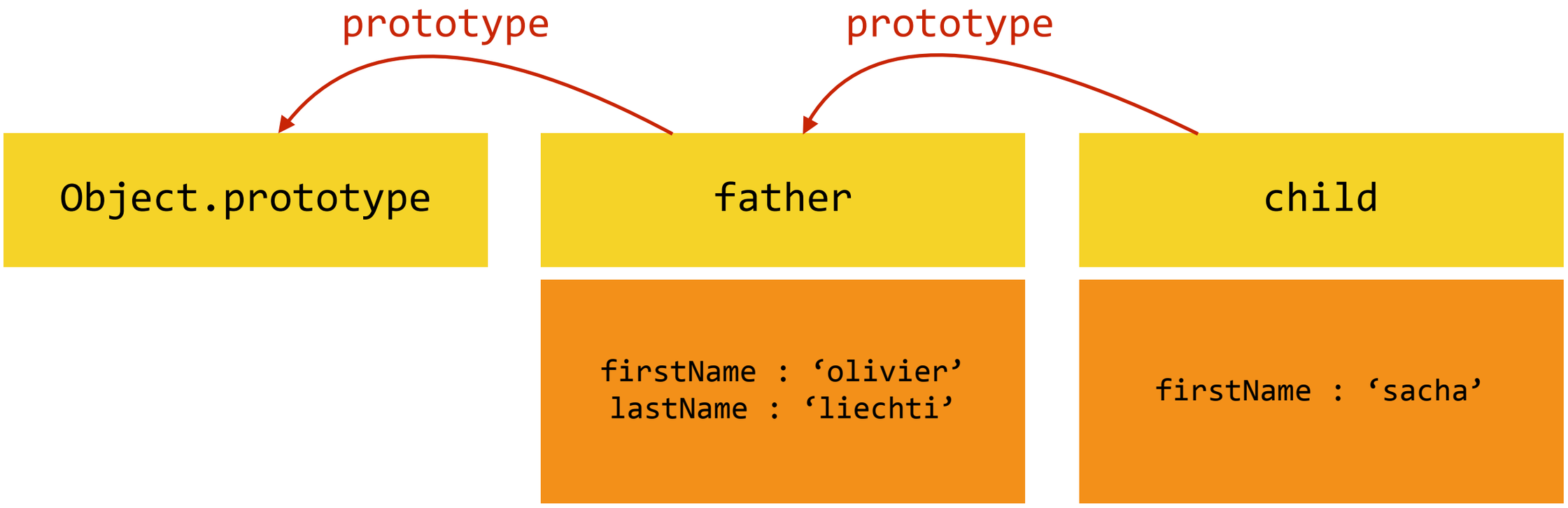


```
console.log(child.lastName);
// prints ‘liechti’ on the
console
```

- Every object inherits from a prototype object. **It inherits and can override its properties**, including its methods.
- Objects created with object literals inherit from **Object.prototype**.
- When you access the property of an object, JavaScript **looks up the prototype chain** until it finds an ancestor that has a value for this property.

Rule #6
With patterns, it is possible to implement class-like data structures

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```
function Person(fn, ln) {
  var privateVar;
  this.firstName = fn;
  this.lastName = ln;
  this.badGreet = function() {
    console.log("Hi " + this.firstName);
  };
};

Person.prototype.greet = function() {
  console.log("Hey " + this.firstName);
};

var p1 = new Person("olivier", "liechti");

p1.badGreet();
p1.greet();
```

http://codepen.io/wasadigi/full/FeiAd/

- **`badGreet`** is a property that will be replicated for every object created with the Person constructor:
  - poor memory management
  - not possible to alter behavior of all instances at once
- **`greet`** is a property that will be shared by all instances (because it will be looked up along the object inheritance chain).
- **`privateVar`** is not accessible outside of the constructor.
- **`fistName`** is publicly accessible (no encapsulation).

Rule #7
Arrays are objects

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```
var fruits = ["apple", "pear"];

fruits.push("banana");
console.log(Object.getPrototypeOf(fruits));

for (var i=0; i<fruits.length; i++) {
  console.log("fruits[" + i + "] = " + fruits[i]);
}

var transformedFruits = fruits.map( function(fruit) {
  return fruit.toUpperCase();
});
transformedFruits.forEach( function(fruit) {
  console.log(fruit);
});

var count = fruits.reduce( function(val, fruit) {
  console.log("reducer invoked with " + val);
  return val+1;
}, 0);
console.log("There are " + count + " fruits in the array");
```

http://codepen.io/wasadigi/full/LtnAp/

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JavaScript/CSS Libraries

Bootstrap

getbootstrap.com/2.3.2/index.html

Home Get started Scaffolding Base CSS Components JavaScript Customize Bootstrap

Bootstrap

Sleek, intuitive, and powerful front-end framework for faster and easier web development.

Download Bootstrap

GitHub project Examples Extend Version 2.3.2

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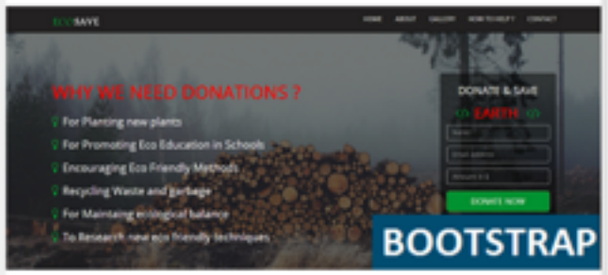
EcoSave



Accept Donations

Bcore

Dashboard Admin Template

Ruma

Multipurpose Template

Binary

Admin theme

Blocks

Single-page admin

mPurpose

Clean, multipurpose template

DarkAdmin | FirmaSite | DevOOPS

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https://wrapbootstrap.com

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jQuery is a **fast**, **small**, and feature-rich JavaScript library. It makes things like HTML **document traversal** and **manipulation**, **event handling**, **animation**, and **Ajax** much simpler with an easy-to-use API that works **across a multitude of browsers**.

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Using jQuery Core

- $ vs $()
- $(document).ready()
- Avoiding Conflicts with Other Libraries
- Attributes
- Selecting Elements
- Working with Selections
- Manipulating Elements
- The jQuery Object
- Traversing
- CSS, Styling, & Dimensions
- Data Methods
- Utility Methods
- Iterating over jQuery and non-jQuery Objects
- Using jQuery's .index() Function

http://learn.jquery.com/using-jquery-core/

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Selecting Elements by ID

```
1 | $( "#myId" ); // Note IDs must be unique per page.
```

Selecting Elements by Class Name

```
1 | $( ".myClass" );
```

Selecting Elements by Attribute

```
1 | $( "input[name='first_name']" ); // Beware, this can be very slow in older browsers
```

Selecting Elements by Compound CSS Selector

```
1 | $( "#contents ul.people li" );
```

http://learn.jquery.com/using-jquery-core/selecting-elements/

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Handlebars.js is an extension to the Mustache **templating language** created by Chris Wanstrath.

Handlebars.js and Mustache are both **logicless templating languages that keep the view and the code separated** like we all know they should be.

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```
Hello
{{firstName}}
!
```

template

```
{
  firstName: “Olivier”,
  lastName: “Liechti”
}
```

object

```
Hello
Olivier!
```

HTML

```
var source = $("#student-template").html();
var template = Handlebars.compile(source);
var student = {firstName: ‘Olivier’};
var html = template(student);
```

UNDERSCORE.JS

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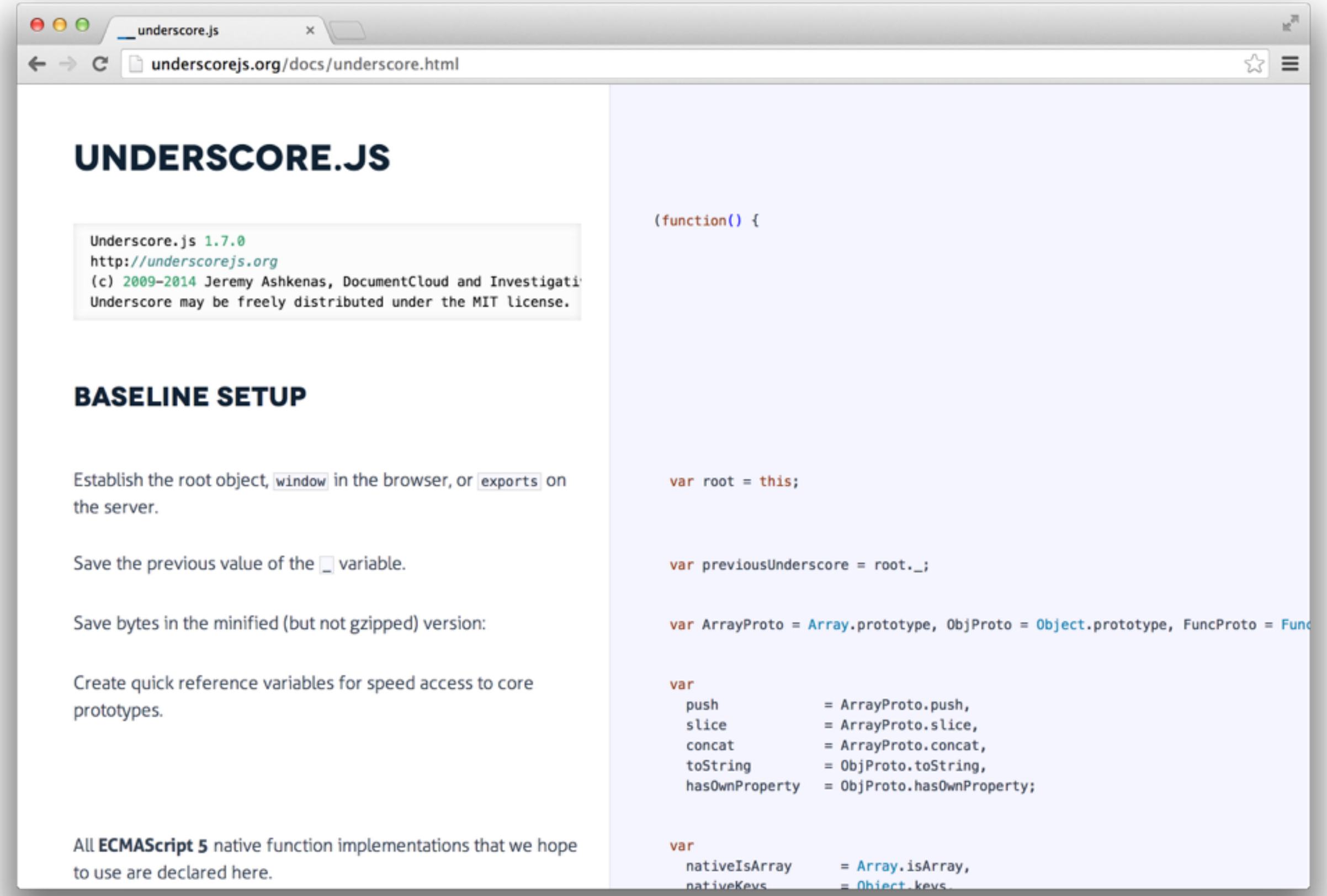
Underscore is a JavaScript library that provides a whole mess of useful **functional programming helpers** without extending any built-in objects.

It's the answer to the question: "If I sit down in front of a blank HTML page, and want to start being productive immediately, what do I need?" … and **the tie to go along with jQuery's tux and Backbone's suspenders**.


underscore.js
underscorejs.org/docs/underscore.html
UNDERSCORE.JS
Underscore.js 1.7.0
http://underscorejs.org
(c) 2009-2014 Jeremy Ashkenas, DocumentCloud and Investigati
Underscore may be freely distributed under the MIT license.
BASELINE SETUP
Establish the root object, window in the browser, or exports on the server.
Save the previous value of the _ variable.
Save bytes in the minified (but not gzipped) version:
Create quick reference variables for speed access to core prototypes.
All ECMAScript 5 native function implementations that we hope to use are declared here.
(function() {
var root = this;
var previousUnderscore = root._;
var ArrayProto = Array.prototype, ObjProto = Object.prototype, FuncProto = Func
var
push = ArrayProto.push,
slice = ArrayProto.slice,
concat = ArrayProto.concat,
toString = ObjProto.toString,
hasOwnProperty = ObjProto.hasOwnProperty;
var
nativeIsArray = Array.isArray,

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Lab 01

https://www.youtube.com/watch?v=F6HcVrZTaVs&list=PLfKkysTy70Qa3LHon4n0RWAuAyEiMzDkO&index=1

color is mapped to gender

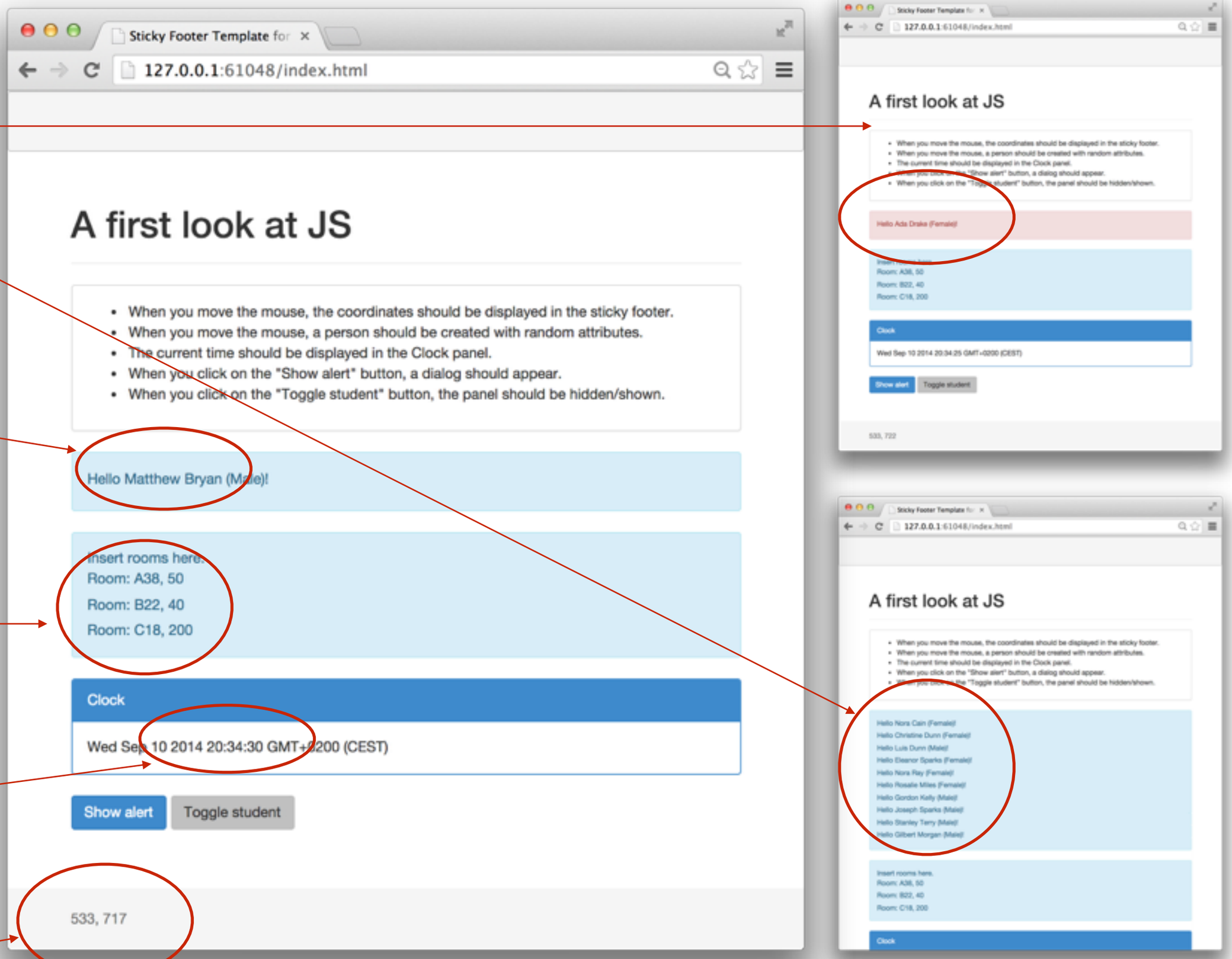
pressing SHIFT adds lines

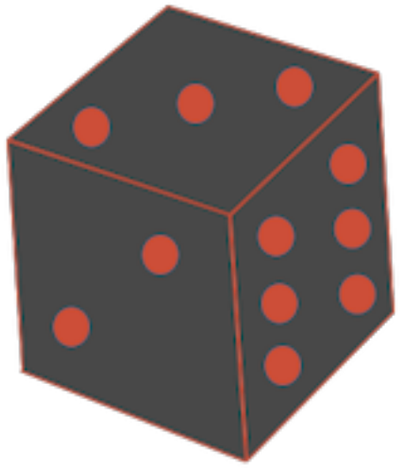
data is generated randomly when mouse moves

data is fetched via AJAX

clock is updated regularly

mouse coordinates are updated





Chance

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Chance is a **minimalist generator of random strings, numbers, etc**. to help reduce some monotony particularly while writing automated tests or anywhere else you need anything random.

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https://pages.github.com

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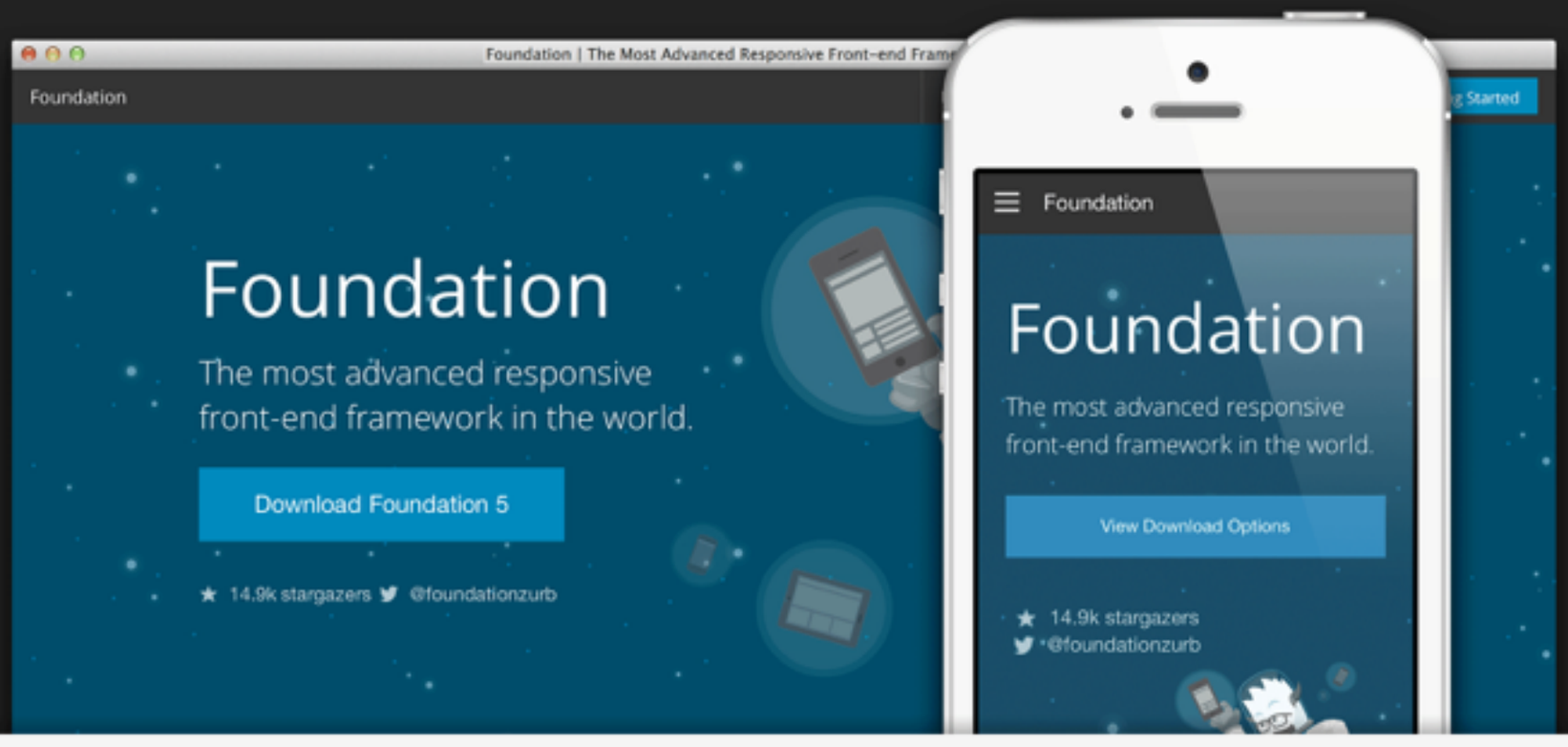

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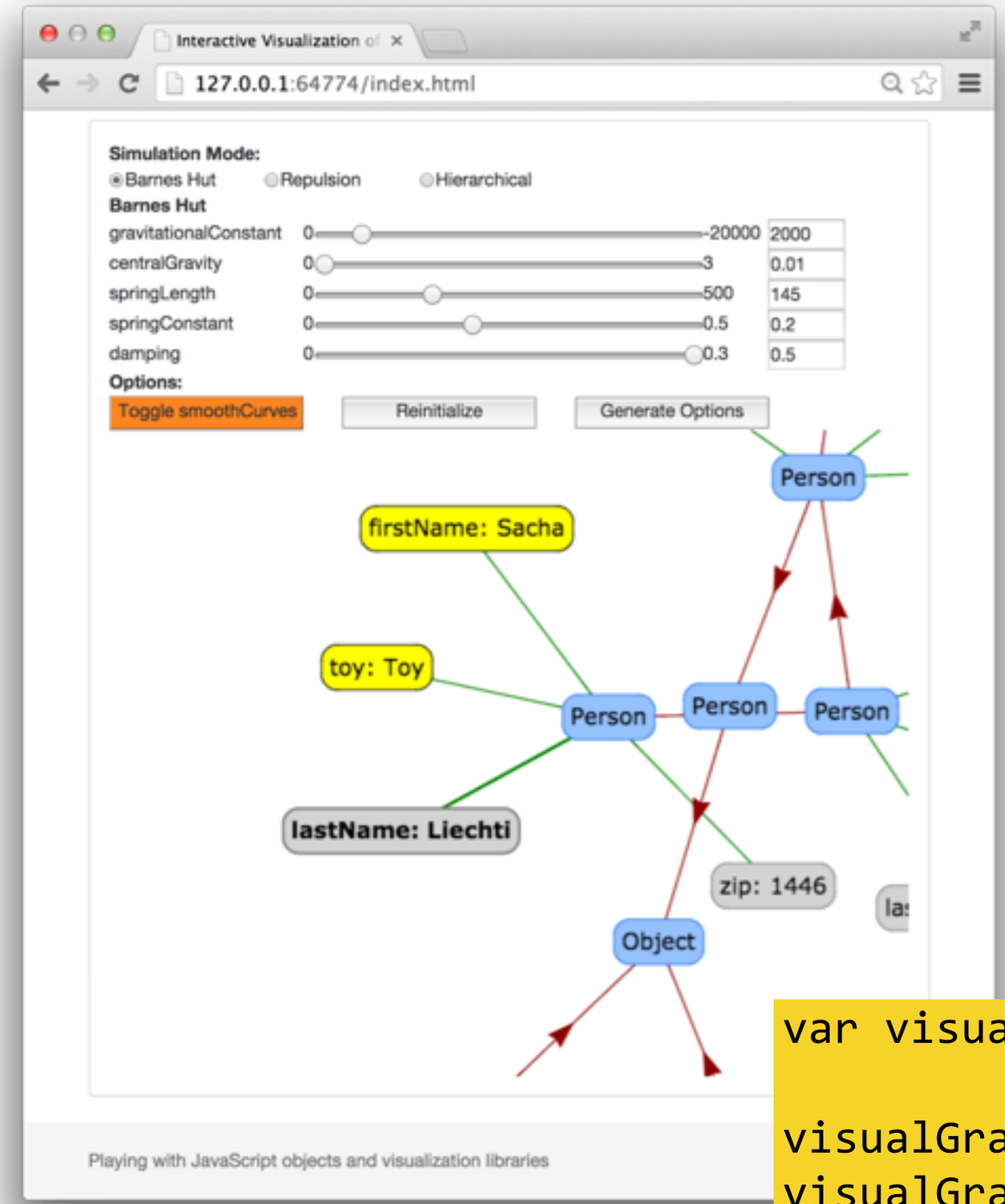
Lab 02



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https://www.youtube.com/watch?v=3VoYI-HHfz0&list=PLfKkysTy70Qa3LHon4n0RWAuAyEiMzDkO&index=2

```
var visualGraph3 = new jsvis.VisualizationGraph();

visualGraph3.addJsObjectToGraph(sacha);
visualGraph3.addJsObjectToGraph(sacha.toy);
visualGraph3.addJsObjectToGraph(stephan);
visualGraph3.addJsObjectToGraph(akebono);
```

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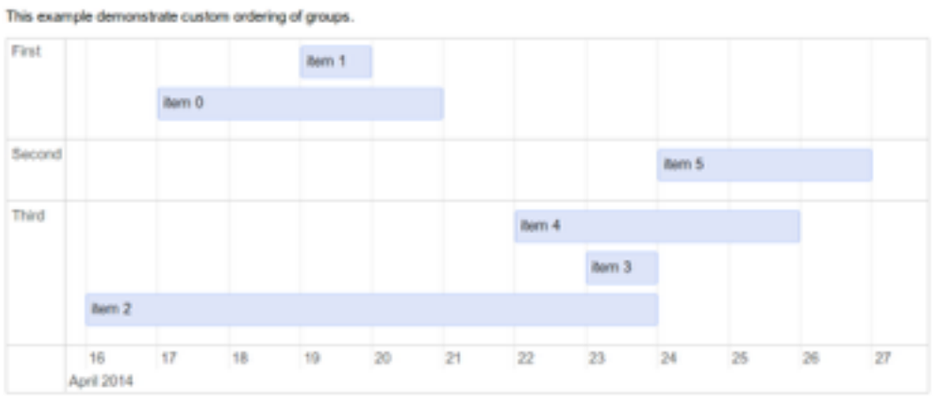
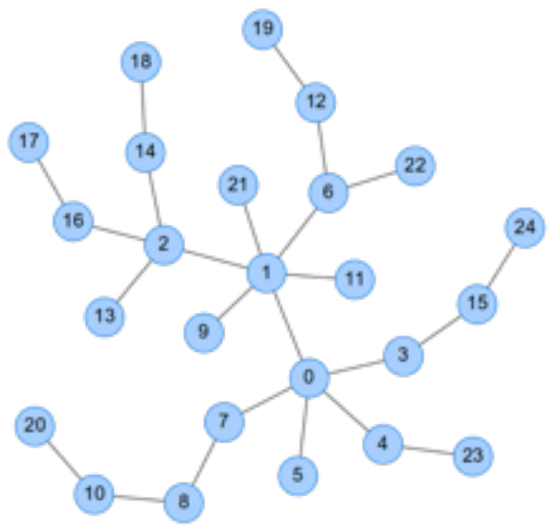
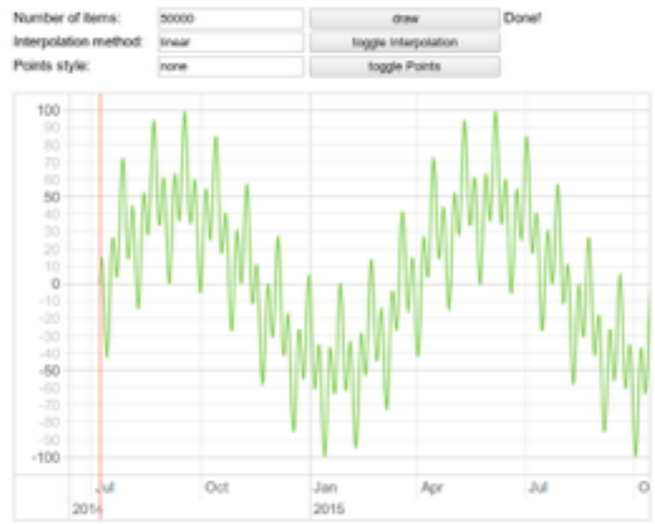
Vis.js is a dynamic, **browser based visualization** library. The library is designed to be easy to use, to handle large amounts of dynamic data, and to enable manipulation of and interaction with the data.







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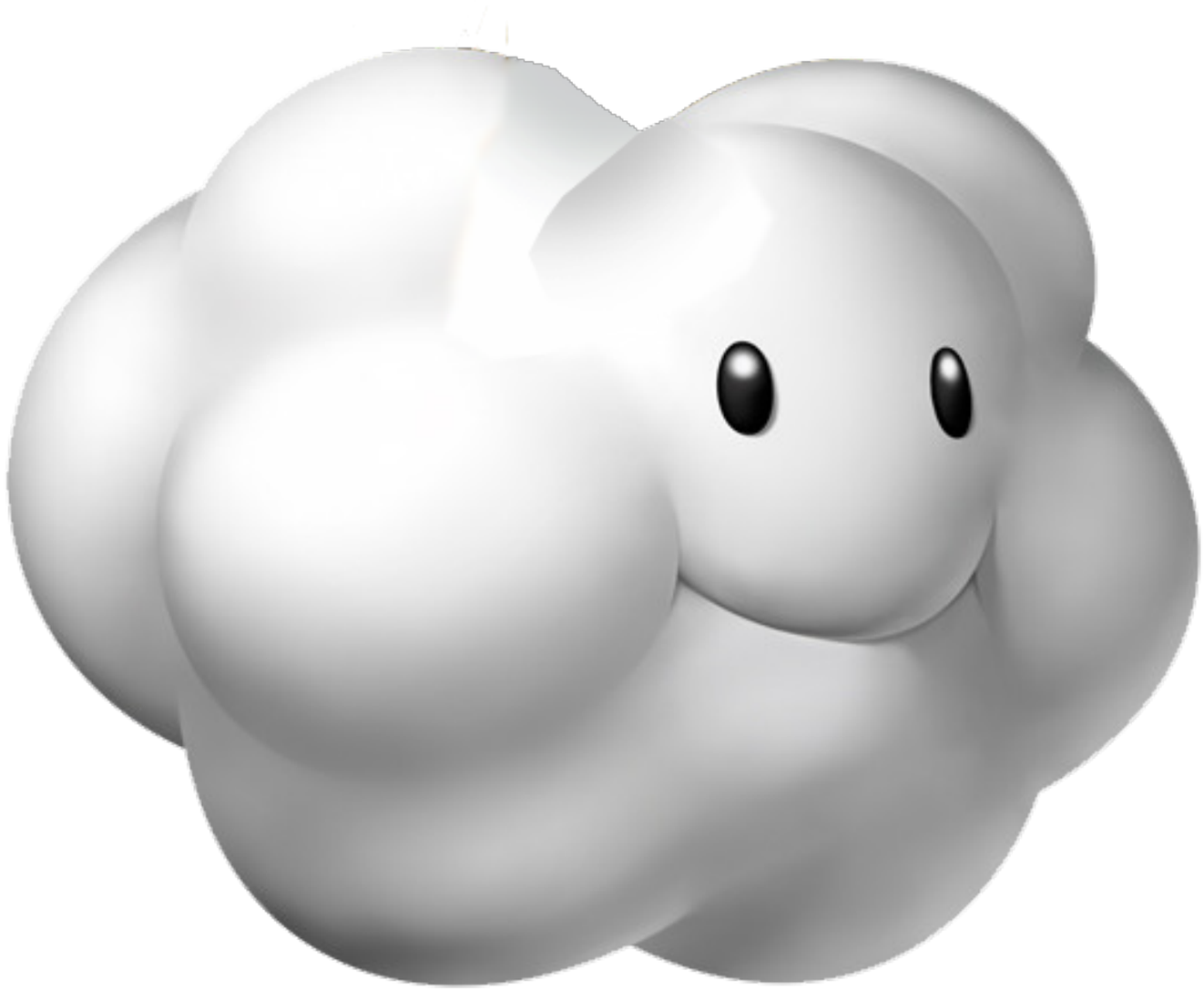

Welcome to The Cloud

tweb-demo · Resources | He ×

Olivier

Heroku, Inc. [US] https://dashboard.heroku.com/apps/tweb-demo/resources

Dashboard

olivier.liechti@wasabi-tech...

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Trick to deploy static content on heroku

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```
$ heroku login
$ git init
$ heroku create tweb-demo
$ echo "<h2>hello. i am on the cloud.</h2>" > home.html
$ echo "<?php include_once("home.html"); ?>" > index.php
$ echo "{}" > composer.json

$ git add *
$ git commit -m "My first static site on heroku”
$ git push heroku master

$ heroku logs
```

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JavaScript 101 (Part 2)

JavaScript 101, Part 2

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- Functions are objects
- `Function.prototype` vs `myFunction.prototype`
- Closures
- Module patterns
- `this`

Rule #8
Functions are objects

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```
function aFunction() {
}

var f = function() {
}

var g = function g() {
  g(); // recursive call
}

var h = function(functionParam) {
  functionParam();
}

h(f);
h(g);
```

Rule #9

Whenever a function is defined, an object is created.

Its prototype is Function.prototype.
Its prototype property is the object that will be the prototype of instances created with the function used as a constructor with the **new** keyword.

```
function Robot() {
}
var r2d2 = new Robot();


var t1 = Object.getPrototypeOf(Robot) === Function.prototype;
var t2 =  Robot.__proto__ === Function.prototype; //
deprecated

var t3 =  Object.getPrototypeOf(r2d2) === Robot.prototype;
var t4 =  Object.getPrototypeOf(Robot.prototype) ===
Object.prototype;
```

Rule #10
"new" makes constructors behave in a special way, but constructors are normal functions

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```
function Animal(name) {
  this.name = name;
}
var cat = new Animal("Félix");
```

1. A **new object** is created.
2. Its **prototype** is set to `Animal.prototype`
3. The constructor function is called; **`this`** is bound to the newly created object.
4. In general, the constructor does not return any object. In this case, the result of the new expression is the newly created object.

Rule #11
Functions can be nested

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```
function f1(p1) {
  console.log("f1 can see " + p1);
  function f2(p2) {
    console.log("f2 can see " + p2 + " " + p1);
    function f3(p3) {
      console.log("f3 can see " + p3 + " " + p2 + " " + p1);
    }
    f3(3);
  }
  f2(2);
}
f1(1);
```

- An **object** is created for every function.
- Each function has access to variables defined in the **parent** functions (an in the **global scope**).

Rule #12
A closure is formed when a nested function accesses a *free* variable

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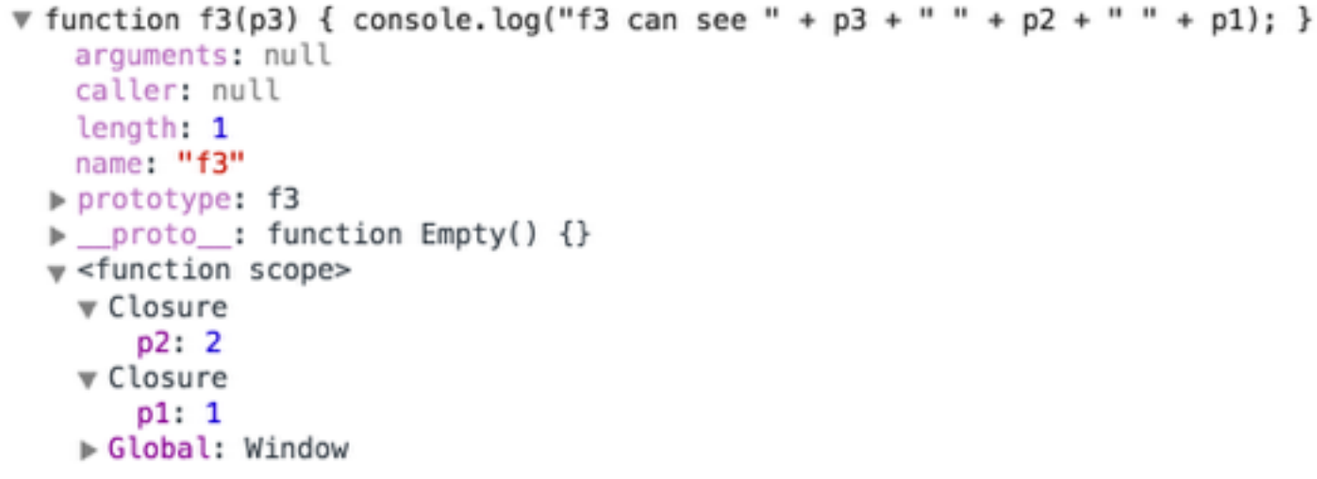
```
function f1(p1) {
  console.log("f1 can see " + p1);
  function f2(p2) {
    console.log("f2 can see " + p2 + " " + p1);
    function f3(p3) {
      console.log("f3 can see " + p3 + " " + p2 + " " + p1);
    }
    f3(3);
  }
  f2(2);
}
f1(1);
```

- In a function, a **free variable** is a variable that is neither a local variable, nor a parameter of the function.
- A **closure** is the combination of a code block (the function code) and saved parent environments.



Rule #13
When 2 functions are created in the same scope, closures are formed on the same environment.

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```
function parent() {

  var sharedVariable;

  function child1() {
    sharedVariable = 1;
  }

  function child2() {
    sharedVariable = 2;
  }

  function getValue() {
    return sharedVariable;
  }

  return {
    toggleToOne: child1,
    toggleToTwo: child2,
    getValue: getValue
  }
}

var myToggle1 = parent();
var myToggle2 = parent();
myToggle1.toggleToTwo();
myToggle2.toggleToOne();
console.log(myToggle1.getValue());
console.log(myToggle2.getValue());
```

- This pattern can be used to implement **private variables** in Javascript.
- But remember that in this case, the code of the functions is **cloned** in all instances (unlike when you use `Class.prototype.method`).
- Be aware of a **well known issue** when closures are formed within a loop.

```
function test() {
  var functions = [];

  for (var i=0; i<10; i++) {
    functions.push(function() {
      console.log(i);
    });
  };

  return functions;
}

var fs = test();
fs.forEach( function(f) { f(); } );
```

- **What is happening?**
- **Why?**
- **How do you fix this?**

https://developer.mozilla.org/en-US/docs/Web/JavaScript/Guide/Closures

Rule #14
Patterns are applied to create modules

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```
var myModule = (function() {

  var aPrivateVar;
  var privateFunction_1 = function() {}
  var privateFunction_2 = function() {}

  return {
    publicFunction: privateFunction_1
  }

})();

myModule.publicFunction();
```

http://codepen.io/wasadigi/full/GxsfC/

- The function is **immediately invoked**.

- When `privateFunction_1` accesses `aPrivateVar`, a **closure** is formed.
- is **available even after** the immediately invoked function has returned.
- `privateFunction_1` and `privateFunction_2` share the same parent scope.

```
Hello world
> dir(myModule)
▼ Object
  ▼ publicFunction: function () {
      arguments: null
      caller: null
      length: 0
      name: ""
    ▶ prototype: Object
    ▶ __proto__: function Empty() {}
    ▼ <function scope>
      ▼ Closure
          aPrivateVar: "world"
      ▶ Global: Window
  ▶ __proto__: Object
< undefined
>
```

Rule #15
The value of this depends on the way a function has been called

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```
function Robot(name) {
  this.name = name;
}

Robot.prototype.greet = function greet() {
  debugger;
  console.log("hello " + this.name);
  if (this.name === undefined) {
    return; // oops...
  }
  greet(); // no dot notation!
}

var r2d2 = new Robot("r2d2");
r2d2.greet();
```

- When a function is called on an object (i.e. **as a method**), then this refers to the object.
- When a function is called **as a function** (no dot notation), then this refers to the global object).
- There are methods defined on `Function.prototype` to control the value of this: `apply` and `call`.

http://codepen.io/wasadigi/full/stkum/

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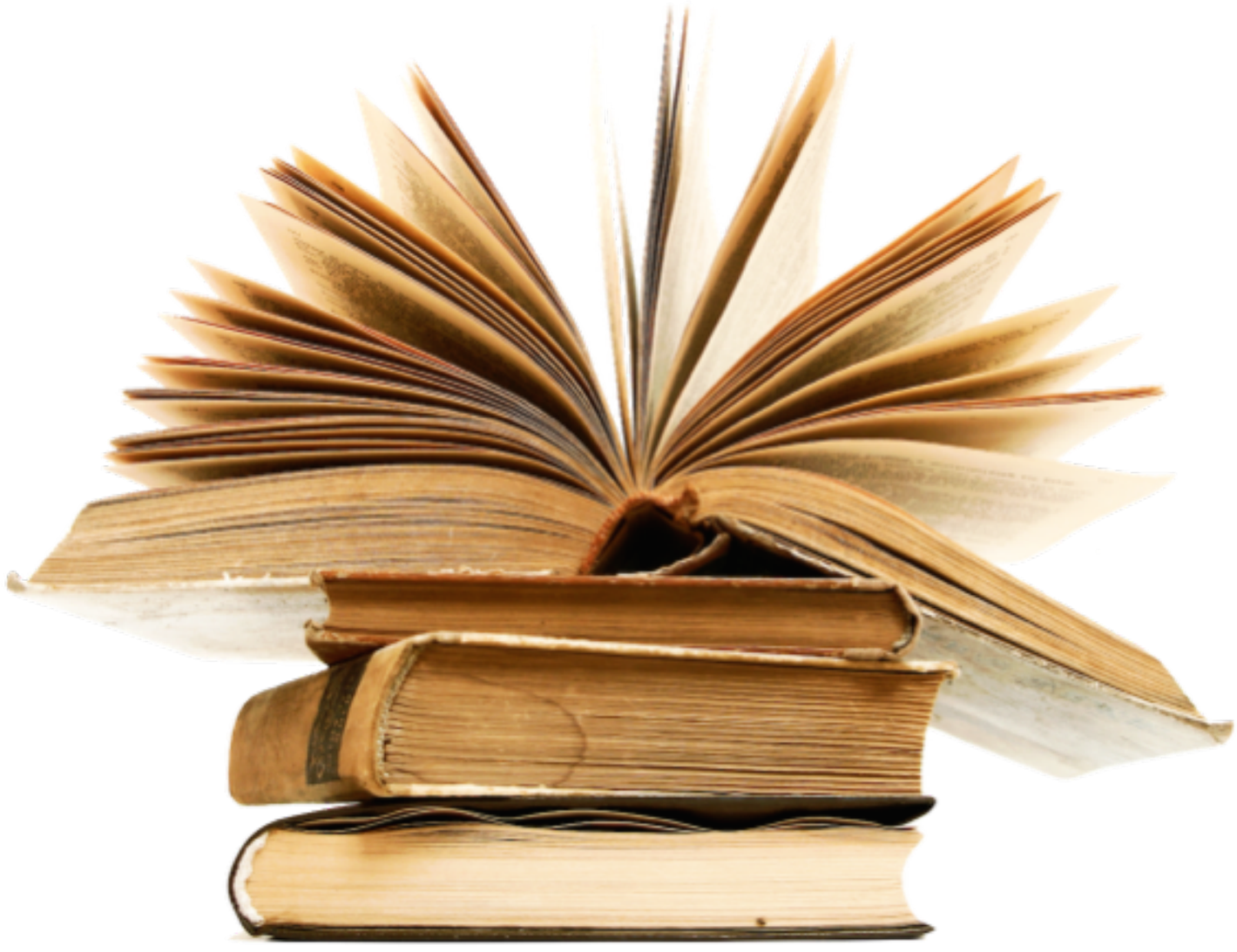

References

JavaScript | MDN

Mozilla Foundation [US] https://developer.mozilla.org/en/docs/Web/JavaScript

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  - JavaScript data structures
  - Equality comparisons and when to use them
- Advanced

JavaScript® (often shortened to JS) is a lightweight, interpreted, object-oriented language with first-class functions, most known as the scripting language for Web pages, but used in many non-browser environments as well such as node.js or Apache CouchDB. It is a prototype-based, multi-paradigm scripting language that is dynamic, and supports object-oriented, imperative, and functional programming styles. Read more about JavaScript.

The JavaScript standard is ECMAScript. As of 2012, all modern browsers fully support ECMAScript 5.1. Older browsers support at least ECMAScript 3. A 6th major revision of the standard is in the works.

This section of the site is dedicated to the JavaScript language itself, the parts that are not specific to Web pages, or other host environments. For information about APIs specific to Web pages, please see Web APIs and DOM.

JavaScript is not to be confused with the Java programming language. Java is a trademark or registered trademark of Oracle in the U.S. and other countries.

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Learn how to program JavaScript.

Introductory

Reference

Browse the complete JS reference documentation.

Standard objects

MUST READ for the Tests

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- **A re-introduction to JavaScript**
  - https://developer.mozilla.org/en-US/docs/Web/JavaScript/A_re-introduction_to_JavaScript
- **Inheritance and the prototype chain**
  - https://developer.mozilla.org/en-US/docs/Web/JavaScript/Guide/Inheritance_and_the_prototype_chain
- **Introduction to Object-Oriented JavaScript**
  - https://developer.mozilla.org/en-US/docs/Web/JavaScript/Introduction_to_Object-Oriented_JavaScript

JavaScript Objects in Detail

January 27 Last Year

JavaScript's core—most often used and most fundamental—data type is the Object data type. JavaScript has one complex data type, the Object data type, and it has five simple data types: Number, String, Boolean, Undefined, and Null. Note that these simple (primitive) data types are immutable, they cannot be changed, while objects are mutable.

What is an Object

An object is an unordered list of primitive data (and sometimes reference data types) types that are stored as name-value pairs. Each item in the list is called a property (functions are called methods) and each property name has to be unique and can be a string or a number.

Here is a simple object:

```
var myFirstObject = {firstName: "Richard", favoriteAuthor:
"Conrad"};
```

To reiterate: Think of an object as a list that contains items and each item (a property) in the list is stored by a name-value pair. The property names in the example above are firstName and favoriteAuthor. And the values for each are "Richard" and "Conrad."

ECMA-262

by Dmitry Soshnikov

JavaScript. The core.

Read this article in: Japanese, German (version 2), Arabic, Russian, French, Chinese.

This note is an overview and summary of the "ECMA-262-3 in detail" series. Every section contains references to the appropriate matching chapters so you can read them to get a deeper understanding.

Intended audience: experienced programmers, professionals.

We start out by considering the concept of an *object*, which is fundamental to ECMAScript.

An object

ECMAScript, being a highly-abstracted object-oriented language, deals with *objects*. There are also *primitives*, but they, when needed, are also converted to objects.

> An object is a *collection of properties* and has a *single prototype object*. The prototype may be either an object or the `null` value.

javascript the good parts

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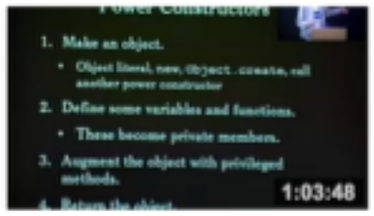

JavaScript: The Good Parts

by GoogleTechTalks • 5 years ago • 409,631 views

Google Tech Talks Web Exponents presented by Doug Crockford February 27, 2009 blog post: ...

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Douglas Crockford: JavaScript: The Good Parts

by YUI Library • 3 years ago • 13,180 views

In this talk from 2007, Douglas Crockford takes us on a journey through the lens of his own personal experience with **JavaScript** ...

Flexible Navigation | JavaScript Good Parts | CSS Animation Tricks | The Treehouse Show Episode 75

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In this episode of The Treehouse Show, Nick Pettit (@nickrp) and Jason Seifer (@jseifer) talk about the latest in web design, web ...

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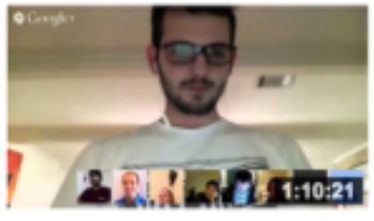

Houston Developers Book Club: JavaScript the Good Parts Ch 4

by Jonathan Birkholz • 8 months ago

This meeting will be about Chapter 4: Functions from **JavaScript the Good Parts**. For this time: - Less confusion with Google ...

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Test Your Knowledge of Function Scope with Douglas Crockford

by MJG International (Frontend Masters) • 1 year ago • 9,342 views

In this lesson Douglas Crockford tests your knowledge of **JavaScript** function scope.

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