

JavaScript Intro

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About JavaScript

JavaScript is the language of the web

JavaScript is both the most popular and least popular programming language.

– Doug Crockford

Overview of JavaScript

- ▶ Shares many features with other programming languages
- ▶ “JavaScript” is not “Java”
- ▶ Note: you should already know how to program

Syntax Crash Course

Variables & Objects

```
var foo = 3.14;  
var bar = "thon"  
var baz = true;
```

- ▶ Similar to Python: no explicit type declarations
- ▶ `var` keyword declares a variable

Types!

- ▶ `number`
 - ▶ one number type (not both `int` and `float`)
- ▶ `string`
 - ▶ no explicit `char` type
- ▶ `boolean`
 - ▶ `true` or `false`
- ▶ `object`
 - ▶ TL;DR: basically Python dict
- ▶ `function`
 - ▶ Functions are values!
- ▶ `undefined` , `null`
 - ▶ `undefined` is for “never assigned a value”
 - ▶ `null` is for “intentionally useless” values

Truthiness

- ▶ Every value in JavaScript can be coerced to a boolean.
 - ▶ If it goes to `true`: "truthy"
 - ▶ If it goes to `false`: "falsy"

	falsy	truthy
number	<code>+0</code> , <code>-0</code> , <code>NaN</code>	all other numbers
string	<code>""</code>	all other strings
boolean	<code>false</code>	<code>true</code>
object	<code>null</code>	all other objects
function	<code>n/a</code>	all functions
undefined	<code>undefined</code>	<code>n/a</code>

Objects

- ▶ Key-value store
- ▶ Mutable
- ▶ Basically like Python dictionaries

```
// example: creating an object, and  
//           storing it in a variable  
var myFirstObject = {  
    foo: 3.14,  
    bar: "thon"  
};
```

Accessing Properties

There are two ways to access a property of an object:

- ▶ `.foo`
- ▶ `["foo"]`

The latter is useful for computed properties

```
myFirstObject.foo    === 3.14    // true
myFirstObject["foo"] === 3.14    // true
myFirstObject.foo    === 0       // false
```

// These have the value "thon"

```
myFirstObject.bar    === "thon"  // true
myFirstObject["bar"] === "thon"  // true
myFirstObject["bar"] === "hacka" // false
```

Functions

// First method: `function` keyword and name

```
function myFirstFunction() {  
    ...  
}
```

// Second method: assign "anonymous" method to a variable

```
var myFirstFunction = function() {  
    ...  
}
```

// Bonus method: named function in stack traces

```
var myFirstFunction = function myFirstFunction() {  
    ...  
}
```

Function Arguments

```
function mySecondFunction(arg1, arg2, anotherArg) {  
    ...  
    // use arg1, arg2, and arg3 variables  
    ...  
}
```

Learn More

JavaScript Intro writeup

Workshop

These are your primary tools as a web developer

- ▶ ad
- ▶ Chrome Developer Tools
- ▶ Mac: `Cmd + Option + J`
- ▶ Windows: `Ctrl + Shift + J`
- ▶ Previewing HTML files
 - ▶ Terminal? → `python -m SimpleHTTPServer`¹
 - ▶ Otherwise → "Open with... > Chrome"

¹You might have to use `python3 -m http.server`

This is how you'll complete the lab

1. Read step's **description**
2. Check the **"diff"** (i.e., what lines changed) for each step
3. Implement the **code** using the diff

▶ If you copy/paste, don't include the `+` signs

1. Repeat!