



CS50B Web Dev 2

Fall 2018 ~ Ethan Wilde

Week 7



Welcome

- **Course Outline**
- **Reading + Viewing This Week**
- **Introducing JavaScript**
 - **JavaScript Basics**
 - **Using JavaScript with jQuery + Bootstrap**
- **Preparing for the Midterm Project**

Course Outline

1 Responsive HTML5 + CSS3	10 WordPress: Intro to CMS
2 Introduction to Bootstrap	11 WordPress Posts
3 Page Elements + Components	12 WordPress Pages + Menus
4 Navigation	13 WordPress Plugins + Themes
5 Forms + Decoration	14 WordPress Bootstrap Theme
6 Customizing Bootstrap CSS	15 Intro to Sass: CSS Preprocess
7 Introduction to JavaScript	16 Customizing Bootstrap Sass
8 Bootstrap + JavaScript	17 Mastering Sass + Bootstrap
9 Midterm Review + Midterm	18 Final Exam (online)

Get all of the details in the complete syllabus on Canvas.

Reading This Week

JavaScript For Cats

An introduction for new programmers

So easy your human companion could do it too!

JavaScript is a programming language or, in other words, a means by which a computer is instructed to do things. Just the same as one controls humans with hisses and meows, one controls computers with statements written in a programming language. All web browsers understand JavaScript and you can take advantage of that to make web pages do crazy things!



JavaScript for Cats

<http://srjc.ethan.com/js4cats/>

Viewing This Week



Jeremy Kubica

SmallTalks: “Computational Fairy Tales”

<https://vimeo.com/70188494>

JavaScript Basics

“Become a JavaScript tourist and learn the basics of using limited phrases to accomplish big things.”

You are not being asked to learn the entire vocabulary and capabilities of JavaScript this term.

Take CS50C: Web Dev 3 to learn JavaScript.

JavaScript Basics

JavaScript	A programming language that can control a Web browser.
jQuery	A JavaScript file written by John Resig that adds ability to find HTML elements and change them easily.
Popper	A JavaScript file that adds ability to show and hide HTML elements easily.
Bootstrap	A framework that includes CSS and JavaScript. The JavaScript file for Bootstrap adds many abilities to work with components.

JavaScript Basics

- 1. Instructions (Lexical Structures)**
- 2. Comments**
- 3. Values + Variables**
- 4. Expressions + Operators**
- 5. Statements**
- 6. Functions**
- 7. JavaScript, the Web + Cloud9**

JavaScript Basics

1. Instructions (Lexical Structures)

2. Comments

3. Values + Variables

4. Expressions + Operators

5. Statements

6. Functions

7. JavaScript, the Web + Cloud9

Instructions (Reserved Terms)

break	finally	this
case	for	throw
catch	function	true
continue	if	try
debugger	in	typeof
default	instanceof	var
delete	new	void
do	null	while
else	return	with
false	switch	

RESERVED WORDS

Instructions (Syntax)

let a = 0;

let a = 0

END OF LINE (OPTIONAL)

JavaScript Basics

1. Instructions (Lexical Structures)

2. Comments

3. Values + Variables

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5. Statements

6. Functions

7. JavaScript, the Web + Cloud9

Comments

// a single line comment

/*

**a multi-line
comment**

***/**

COMMENTS

JavaScript Basics

1. Instructions (Lexical Structures)

2. Comments

3. Values + Variables

4. Expressions + Operators

5. Statements

6. Functions

7. JavaScript, the Web + Cloud9

Values + Variables

Number

String

Boolean

Null

Undefined

Symbol

PRIMITIVE TYPES AND OBJECTS

Values + Variables

Number

String

Boolean

Array Objects

Object Values

Null

Undefined

Symbol

PRIMITIVE TYPES AND OBJECTS

Values + Variables

```
const a = 15.67;
```

```
let my_Name = 'Frank';
```

```
var my_secret = true;
```

NUMBERS, STRINGS + BOOLEANS

Values + Variables

```
let a = Math.round( 0.6 );
```

```
let b = Math.random();
```

MATH OBJECT FOR ARITHMETIC

JavaScript Basics

1. Instructions (Lexical Structures)

2. Comments

3. Values + Variables

4. Expressions + Operators

5. Statements

6. Functions

7. JavaScript, the Web + Cloud9

Expressions + Operators

```
let a = ( 4 + 6 ) * 200;
```

EXPRESSIONS EVALUATE TO A VALUE

Expressions + Operators

++ increment

-- decrement

- subtract

+ add or concat

*** multiply**

/ divide

! not

== equals

!= not equals

< less than

> greater than

<= It or equal

>= gt or equal

= assignment

COMMON OPERATORS

JavaScript Basics

1. Instructions (Lexical Structures)

2. Comments

3. Values + Variables

4. Expressions + Operators

5. Statements

6. Functions

7. JavaScript, the Web + Cloud9

Statements

```
var y = 965;
```

```
let x = 100.25;
```

```
const z = 12;
```

```
function my_guy() {
```

```
    // code block
```

```
}
```

DECLARATION STATEMENTS

JavaScript Basics

1. Instructions (Lexical Structures)

2. Comments

3. Values + Variables

4. Expressions + Operators

5. Statements

6. Functions

7. JavaScript, the Web + Cloud9

Functions

```
function sneeze( x ) {  
    let y = x * 2;  
    return y;  
}
```

ACCEPT ARGUMENTS THAT BECOME PARAMETERS

Functions

```
alert ( sneeze( 50 ) );
```

```
function sneeze( x ) {  
    let y = x * 2;  
    return y;  
}
```

WHAT NUMBER WILL BE DISPLAYED?

JavaScript Basics

1. Instructions (Lexical Structures)

2. Comments

3. Values + Variables

4. Expressions + Operators

5. Statements

6. Functions

7. JavaScript, the Web + Cloud9

JavaScript in Web Browsers

```
document.write( 'Frank' );
```

```
window.location.href =  
'http://santarosa.edu';
```

DOT NOTATION + THE OBJECT MODEL

JavaScript + jQuery

```
<div id="modal1" class="modal">  
</div>  
<script>  
  var x = $('#modal1');  
  x.text("Hello");  
</script>
```

JQUERY MAKES IT EASY TO FIND HTML ELEMENTS

JavaScript + jQuery

```
<div id="modal1" class="modal">  
</div>
```

```
<script>
```

```
var x = $('#modal1');
```

```
x.text("Hello");
```

```
</script>
```



jQuery finds HTML
element with id="modal1"

JQUERY MAKES IT EASY TO FIND HTML ELEMENTS

JavaScript + jQuery


```
<div id="modal1" class="modal">  
</div>
```

```
<script>
```

```
var x = $('#modal1');
```

```
x.text("Hello");
```

```
</script>
```



we can modify found elements
with jQuery functions

JQUERY MAKES IT EASY TO CHANGE HTML ELEMENTS

JavaScript, jQuery + Bootstrap

```
<div id="modal1" class="modal">  
</div>
```

```
<script>
```

```
var x = $('#modal1');
```

```
x.modal("show");
```

```
</script>
```



we can modify found elements
with Bootstrap functions

JQUERY TO FIND, BOOTSTRAP TO MODIFY

Preparing for the Midterm Project

**“An interactive
and responsive catalog.”**

What is the Midterm Project?

Preparing for the Midterm Project

Using Bootstrap 4.1

7 responsive pages

External CSS

Organized filesystem

**Content: self-authored or
with permission + attribution**

What is the Midterm Project?

Preparing for the Midterm Project

Sharing Your In-Progress Project

**Week 7: Share the Preview URL for your latest version
of your in-progress project
in Discussion Assignment 7.2.**

Share preview access URL with everyone this week!

This Week's Assignment

What to Do Next

- **Reading**

- Read + Do: ***JavaScript for Cats***
at <http://srjc.ethan.com/js4cats/>
- Watch: “**Computational Fairy Tales**”
at <https://vimeo.com/70188494>

- **Homework**

- **Assignment 7.1: Preparing for the Midterm Project (Discussion)**
- **Assignment 7.2: First Scripts**
- **Discussion 4: Agile Workflow**
- Complete Assignment 7.2 using your Cloud9 workspace.

- **Canvas Site**

- All materials available there
- <https://canvas.santarosa.edu/courses/32995>