



# CS50B Web Dev 2

Fall 2018 ~ Ethan Wilde

*Week 8*



# Welcome

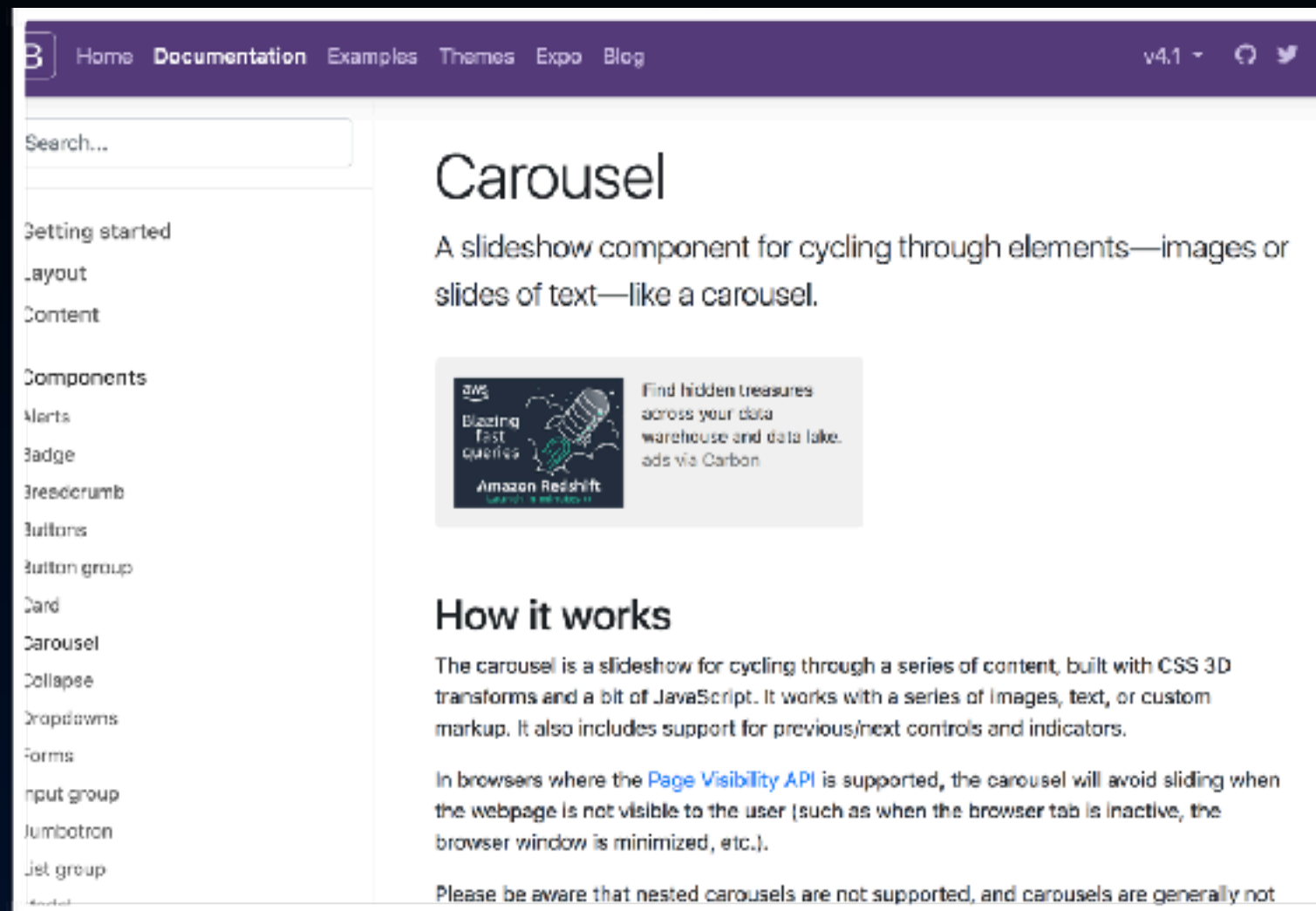
- **Course Outline**
- **Reading + Doing This Week**
- **Revisiting JavaScript**
  - **JavaScript Basics Redux**
  - **JavaScript with jQuery + Bootstrap, Part 2**
- **Preparing for the Midterm Project**

# 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



## Bootstrap Documentation: Carousel + Scrollspy

<https://getbootstrap.com/docs/4.1>

# Practice Again 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/>

# 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

<b>JavaScript</b>	A programming language that can control a Web browser.
<b>jQuery</b>	A JavaScript file written by John Resig that adds ability to find HTML elements and change them easily.
<b>Popper</b>	A JavaScript file that adds ability to show and hide HTML elements easily.
<b>Bootstrap</b>	A framework that includes CSS and JavaScript. The JavaScript file for Bootstrap adds many abilities to work with components.
<b>Plugin or Library</b>	A JavaScript file written by someone (sometimes accompanied by other files) to add features or functionality.

# 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**

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**6. Functions**

**7. JavaScript, the Web + Cloud9**

# Instructions (Reserved Terms)

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

**RESERVED WORDS**

# Instructions (Syntax)

**let a = 0;**

**let a = 0**

**END OF LINE (OPTIONAL)**

# JavaScript Basics

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# Comments

**// a single line comment**

**/\***

**a multi-line  
comment**

**\*/**

**COMMENTS**

# JavaScript Basics

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# 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

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# 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

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# Statements

```
var y = 965;
```

```
let x = 100.25;
```

```
const z = 12;
```

```
function my_guy() {
```

```
    // code block
```

```
}
```

**DECLARATION STATEMENTS**

# JavaScript Basics

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**4. Expressions + Operators**

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**6. Functions**

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# 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

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**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

```
<head>
```

```
  <script src="https://code.jquery.com/jquery-3.3.1.slim.min.js">
```

```
  </script>
```

```
</head>
```

**ONLY LOAD JQUERY ONCE!**

# JavaScript + jQuery

```
<head>
```

```
<script src="https://code.jquery.com/jquery-3.3.1.slim.min.js">
```

```
</script>
```

```
</head>
```

VS

```
<head>
```

```
<script src="https://code.jquery.com/jquery-3.3.1.min.js">
```

```
</script>
```

```
</head>
```



WHICH VERSION? **SLIM OR JUST MIN?**

# 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, Part 2

```
<div id="carouselExampleSlidesOnly"
  class="carousel slide" data-ride="carousel">
  <div class="carousel-inner">
    <div class="carousel-item active">
      
    </div>
    <div class="carousel-item">
      
    </div>
    <div class="carousel-item">
      
    </div>
  </div>
</div>
```

**BOOTSTRAP CAROUSELS + SCROLLSPY**

# Completing the Midterm Project

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

**What is the Midterm Project?**

# Completing 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?**

# Completing the Midterm Project

## Turning in Your Finished Project

**Week 8: Turn in your final project this week.**

**This Week's Assignment**

# What to Do Next

- **Reading**

- Read Bootstrap Documentation at <https://getbootstrap.com/docs/4.1>
  - Components: Carousel
  - Components: Scrollspy
- Read Getting Started: JavaScript at <https://getbootstrap.com/docs/4.1/getting-started/javascript/>

- **Homework**

- **Midterm Project: Interactive Catalog**
- **Discussion 4: Agile Workflow**

- **Canvas Site**

- All materials available there
- [\*\*https://canvas.santarosa.edu/courses/32995\*\*](https://canvas.santarosa.edu/courses/32995)