

WEB DEVELOPMENT, CONTINUED: JAVASCRIPT BASICS

DIGITAL MEDIA E-5

EXPLORING DIGITAL MEDIA

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JAVASCRIPT

- JavaScript is a "Client Side" programming language
- Executes in the user's browser, you already have it!
- "Loosely" typed language
- Verbose!
- Use JQuery to simplify

CONSOLE



Google Search

I'm Feeling Lucky

Advertising Business

Privacy Terms Settings

Elements Console Sources Network Performance Memory Application Security Audits AdBlock

1

top Filter Default levels Group similar

GET https://adservice.google.com/adsid/google/ui net::ERR_BLOCKED_BY_CLIENT

adservice.google.com/adsid/google/ui:1

> |

ADDING JAVASCRIPT CODE

- inside script tags
- generally at the bottom of the body after the rest of the document has loaded
- can put script tags anywhere
- `<script>/* code goes here */</script>`
- `//` comments can start with double slash too

JQUERY

- Historically the most widely use JavaScript library
- 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.

<https://jquery.com/>

JQUERY

- Like Bootstrap, it's "open source" and free!
- Makes it so that we don't have to start from scratch
- Less Verbose than raw JavaScript
- Easy to add, just like external CSS

```
<script
  src="https://code.jquery.com/jquery-3.4.0.min.js"
  integrity="sha256-
BJeo0qm959uMBGb65z40ejJYGSgR7REI4+CW1fNKwOg="
  crossorigin="anonymous"></script>
```

<https://jquery.com/>

BOOTSTRAP, CONTINUED

- Like last week, continuing to look at bootstrap
- also has javascript components
- uses both jQuery and popper

<https://getbootstrap.com/docs/4.1/getting-started/download/#bootstrapcdn>

JAVASCRIPT

VARIABLES

- a "bucket" or "container" for data
- a way to remember a certain value
- "=" is the assignment operator, assigns value to your variable
- Must have unique names
- Declare a variable as follows:
 - `var my_variable = "Hello, Dan" ;`
 - `var num = 8;`
 - `var abc = 8;`

CONDITIONAL STATEMENTS

- if (<check if true>) {
 - // do the following
- }

FUNCTIONS

- A function is a block of code to perform a task
- Executes when it's invoked, or called
- Define a function as follows
- `function dansFunction() {`
 - `// this is inside of dan's function`
 - `console.log("Hello, World - in the console!");`
 - `alert("Hello, World - in the alert box!");`
- `}`

FUNCTIONS

- Functions can take input, and return a value

- ```
function dansFunction(input1, input2) {

 • // adds input one and input two

 • console.log("input1 is:" + input1 + ", input2 is " +
 input2 + ", Added together = " + (input1 + input2));

 • return input1 + input2;

 • }
```

# USEFUL FUNCTIONS

- `alert("Hello!");`
  - Makes a(n annoying) popup in the browser
- `console.log("Hello");`
  - shows data in the browser's console
- `$(document).ready(function(){`
- `// code goes here`
- `});`

# JQUERY SELECTORS

- Same as CSS selectors
- `$("#box1")`
- `$(".box1")`
- returns the element selected
- you can get values and set values

# JQUERY SELECTORS, CONTINUED

- `$( "parent > child" )`: selects "child" elements that are immediate descendants of the "parent"
- `$( "ancestor descendant" )`: selects "descendant" elements as long as they have an "ancestor" element somewhere above them
- `$( "prev + next" )`: selects the "next" element if it is immediately preceded by a "prev" element
- `$( "prev ~ siblings" )`: selects all "siblings" elements that come after a "prev" element

# JAVASCRIPT TO MANIPULATE CSS

Get a css property

**.css( propertyName )**

Returns: [String](#)

**Description:** *Get the computed style properties for the first element in the set of matched elements.*

 **.css( propertyName )**

version added: 1.0

**propertyName**

Type: [String](#)

A CSS property.

<http://api.jquery.com/css/>



# JAVASCRIPT TO MANIPULATE CSS

## Set a css property

`.css( propertyName, value )`

Returns: [jQuery](#)

**Description:** Set one or more CSS properties for the set of matched elements.

 `.css( propertyName, value )`

version added: 1.0

**propertyName**

Type: [String](#)

A CSS property name.

**value**

Type: [String](#) or [Number](#)

A value to set for the property.

# JAVASCRIPT TO MANIPULATE PAGE

Get HTML in an element

`.html()`

Returns: [String](#)

**Description:** *Get the HTML contents of the first element in the set of matched elements.*

 `.html()`

version added: 1.0

This method does not accept any arguments.

<https://api.jquery.com/html/>

# JAVASCRIPT TO MANIPULATE PAGE

Set HTML in an element

`.html( htmlString )`

Returns: [jQuery](#).

**Description:** *Set the HTML contents of each element in the set of matched elements.*

 `.html( htmlString )`

version added: 1.0

**htmlString**

Type: [htmlString](#)

A string of HTML to set as the content of each matched element.

<https://api.jquery.com/html/>

# EVENT HANDLERS

- "bind" event "handlers" to certain actions that happen in the browser
  - mouse click: `.click()`
  - on focus: `.focus()`
  - blur focus: `.blur()`
  - key press: `.keypress()`
  - key up: `.keyup()`

# USING EVENT HANDLERS

`.click( handler )`

Returns: [jQuery](#)

**Description:** Bind an event handler to the "click" JavaScript event, or trigger that event on an element.

 `.click( handler )`

version added: 1.0

**handler**

Type: [Function](#)( [Event](#) eventObject )

A function to execute each time the event is triggered.

<https://api.jquery.com/click/>

# AJAX

- asynchronous HTTP requests
- load data from a file or another page/server
- Send data to a server without reloading the page

# AJAX TO LOAD EXTERNAL DATA

## Sending an AJAX request

 `jQuery.ajax( url [, settings ] )`

version added: 1.5

### url

Type: [String](#)

A string containing the URL to which the request is sent.

### settings

Type: [PlainObject](#)

A set of key/value pairs that configure the Ajax request. All settings are optional. A default can be set for any option with [\\$.ajaxSetup\(\)](#). See [jQuery.ajax\( settings \)](#) below for a complete list of all settings.

<http://api.jquery.com/jQuery.ajax/>

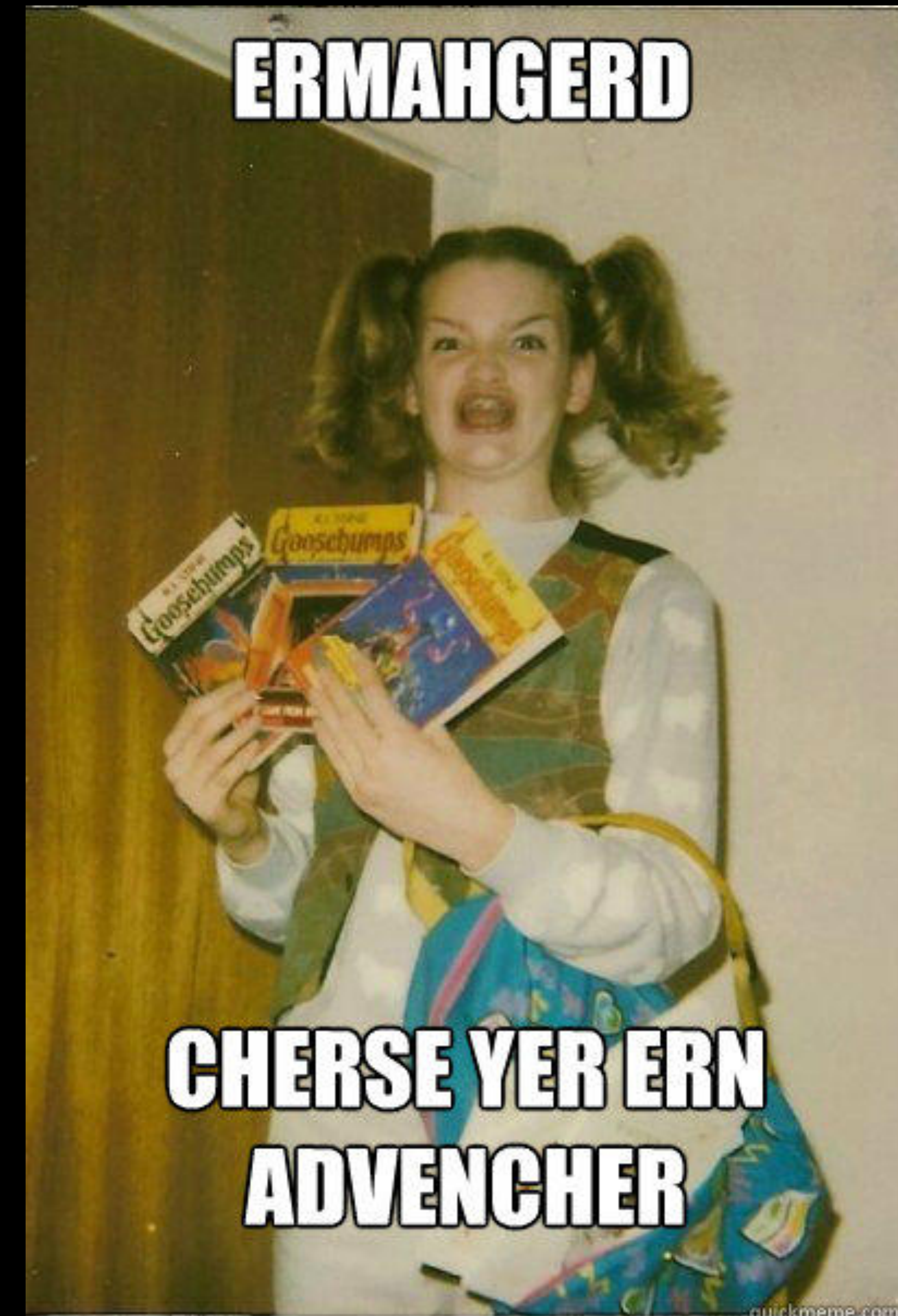
# ADDITIONAL RESOURCES

- <https://stackoverflow.com/>
  - great website for programming questions, most likely someone has already asked your question
- <https://www.w3schools.com/>
  - great HTML reference, sample code, and other tools
- Read documentation!
-



# I'M INTERESTED, WHAT'S NEXT?

- Programming more generally:
  - <https://cs50.harvard.edu/>
  - (free edition) <https://www.edx.org/course/cs50s-introduction-computer-science-harvardx-cs50x>
- Harvard Extension
  - [CSCI E-50 Intensive Introduction to Computer Science](#)
  - [CSCI E-3 Introduction to Web Programming Using JavaScript](#)
  - [DGMD E-12 Introduction to Creative Exploration on the Web](#)



# WORKING WITH IMAGES

- How to compress images for the web locally
- <https://postimages.org/>
- Carousels example, continued

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