STUFF I LEARNED FROM

FORWARD JS

FORWARD JS

- Dedicated to JavaScript
- Been around about 2.5 years
- Held in San Francisco
- AMAZING: amount of content, depth of content, type of content, quality of speakers (and San Francisco is pretty cool)
- Type of content:
  - workshops - intensive, one day per topic, in the code
  - conference sessions - an hour or two, not in the code

WHAT I'M GOING TO PRESENT

- Workshop: Advanced JavaScript Fundamentals
- Workshop: 4 Semesters of Computer Science in 6 Hours

ADVANCED JAVASCRIPT FUNDAMENTALS

- Instructor: **Kyle Simpson**, JavaScript Developer/Instructor/Author
- “You Don’t Know JS” - a free version of his book here: https://github.com/getify/You-Dont-Know-JS

ADVANCED JAVASCRIPT FUNDAMENTALS

- Scope and Closures
- this, prototypes, and inheritance

ADVANCED JAVASCRIPT FUNDAMENTALS

- Scope and Closures
  - Scope: where to look for things
    - “the set of rules that govern how the Engine can look up a variable by its identifier name and find it, either in the current Scope, or in any of the Nested Scopes it's contained within”

Global Scope

```
<script>
    var stuff = "this is a variable";

    var mainFunction = function() {

        var moreStuff = "more stuff";

        var x = 1;

        var y = 2;

        var add = function() {

            var base = 10;

            var moreStuff = "Adding more stuff";

            console.log(base + x + y);

        }

        add();

    }

    mainFunction();
</script>
```

Scope of mainFunction

Scope of add

ADVANCED JAVASCRIPT FUNDAMENTALS

- Scope and Closures
  - Note: JS uses Lexical Scope
    - Most programming languages do
- What determines scope in JavaScript?
  - Functions
  - let (in ES6)
- Function declaration vs Function expression

ADVANCED JAVASCRIPT FUNDAMENTALS

- Compiler Theory
  - Not interpreted, instead compiled
    - Example
- 2 Phases
  - Compile
  - Execute

ADVANCED JAVASCRIPT FUNDAMENTALS

- Scope and Closures
  - How scope gets built
  - “Hoisting”
    - function declarations (first)
    - var declarations (second)

ADVANCED JAVASCRIPT FUNDAMENTALS

- Scope and Closures
  - Closure: A function which uses a variable from its context.
- Great resource: http://doctrina.org/JavaScript:Why-Understanding-Scope-And-Closures-Matter.html

Closure

```
<script>
    var stuff = "this is a variable";

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            var base = 10;

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        }

        add();

    }

    mainFunction();
</script>
```

ADVANCED JAVASCRIPT FUNDAMENTALS

- this
  - Misconceptions
    - this refers to the function itself
    - this refers to this function's scope
  - How do I know what this is bound to?
    - Example
    - Ask these 4 questions in this order.
      - Called with new? Use the newly constructed object.
      - Called with call or apply (or bind)? Use the specified object.
      - Called with a context object owning the call? Use that context object.
      - Default: undefined in strict mode, global object otherwise.

ADVANCED JAVASCRIPT FUNDAMENTALS

- this
  - Are there exceptions to these 4 rules?
    - Yep, see here: https://github.com/getify/You-Dont-Know-JS/blob/master/this%20%26%20object%20prototypes/ch2.md

4 SEMESTERS OF COMPUTER SCIENCE IN 6 HOURS

- Instructor: **Brian Holt**, Senior UI Engineer at Netflix
- Link to pretty much his entire presentation/workshop - http://btholt.github.io/four-semesters-of-cs/

4 SEMESTERS OF COMPUTER SCIENCE IN 6 HOURS

- Term: algorithm
  - A step-by-step procedure for solving a problem.

4 SEMESTERS OF COMPUTER SCIENCE IN 6 HOURS

- Topics
  - Big0
  - Recursion
  - Sorting
  - Data Structures
  - A lunch conversation

4 SEMESTERS OF COMPUTER SCIENCE IN 6 HOURS

- Sorting
  - Bubble Sort
  - Insertion Sort
  - Merge Sort
  - Quick Sort

4 SEMESTERS OF COMPUTER SCIENCE IN 6 HOURS

- A lunch conversation
  - What is developing?
  - Interviewing - the results at Google

4 SEMESTERS OF COMPUTER SCIENCE IN 6 HOURS

- Takeaways
  - As a UI Engineer, I haven't been missing much.
  - "Programming is really just the ability to google the right terms."
  - "Computer Science is the science of tradeoffs."

LAST ITEMS

- Some video-recorded presentations from ForwardJS: https://forwardcourses.com/lectures

FORWARDJS.COM

HELD TWICE A YEAR