General list of topics

This page contains a list of the topics to be covered.

Programming

- History of Javascript
- Components of a web-page (HTML/CSS/Javascript)
- Javascript consoles (Browsers, Node)
- Core Javascript / DOM / Node extensions
- Numbers / Strings
- Regular expressions and string manipulation
- Arrays

  - Standard methods
  - Arrays as queues/stacks
  - Iteration
  - Higher-order functions (forEach/map/filter/reduce)

- Dictionaries

  - "object literals"
  - Iteration using for-in
  - Iteration via array iteration over the keys

- Functions

  - Definitions and calls
  - Functions as values, closures
  - Using functions to create private scope
  - Functions used for late initialization
  - Functions that rewrite themselves
  - Functions used for init-branching
  - Functions called only once

- Equality gotchas

  - == vs ===
  - null vs undefined vs NaN

- Objects

  - as key/value pairs
  - using this in object methods
  - Object.create and prototypes
  - Constructors and new
  - The value of this depends on how a function is called

- Global vs local variables. The global object
- DOM Interaction

- – Loading script in page
  – Timers
  – The DOM tree and manipulating it
  – Events
    * The Event loop
    * Handling DOM events
    * Event bubbling, defaults
  – Introduction to jQuery

- Using XMLHttpRequest

  – Directly
  – Via jQuery
  – JSON

- Design Patterns

  – Components of a design pattern
  – Creational / Structural / Behavioral patterns
  – Creational
    * Constructor pattern
    * Module pattern
    * Singleton pattern
    * Mixin pattern
  – Structural
    * Facade
    * Proxy
    * Adapter
    * Flyweights?
  – Behavioral
    * Observer pattern
    * Publish/Subscribe pattern
    * Mediator pattern
  – Architectural: Model-View-Controller patterns
  – Async Patterns
    * Callbacks
    * Promises
    * Throttling

Practices

- Pair programming
- Testing

  – Tests first
  – Writing unit tests

- **–** Writing integrated tests
- **–** Design small separately testable pieces
- **–** Testing via node and in browser
- **–** Stubs, Mocks, Spies

- Code style

  - **–** ESLint rules

- Documentation

  - **–** Markdown
  - **–** JSDoc basics
  - **–** Doccu?

- Version Control Systems

  - **–** Git and GitHub
  - **–** Using GitHub's Issues

- Deployment, Bundling