

## **Front End Boot Camp**



**Develop**Intelligence

### **Course Overview**

**The Front End Boot Camp will teach the concepts and methods used to do effective front-end web development. Using code demonstrations, group discussion and a comprehensive project, the course will focus on web browser technologies such as HTML5, CSS and JavaScript. Students will explore the tools, languages and architectural design patterns required to build typical enterprise-class web applications using jQuery, Backbone.js, React.js, and other JavaScript libraries. Additionally, the course will include topics such as Node.js, MongoDB, SASS, Globalization, Security, and many other complementary and relevant topics. While the course will feature a very significant amount of hands on software development, the primary focus of the course is to understand the concepts develop and power web applications.**

**Learning Style - Hands on**

**Course Duration - 3 weeks**

### **Agenda**

#### **Week 1**

##### **Day 1**

- Setting up workspaces
- Getting to know Git
- Bower / NPM / Grunt
- Simple Node.js Web Server
- Web Development Basics
- HTML Paragraphs, Lists, Divs, Spans
- HTML Tables, Links, Images

##### **Day 2**

- HTML5 Semantic Tags
- HTML5 Audio / Video
- Accessibility (Ted Drake), 11 am – 1 pm (with pizza lunch)
- CSS Concepts
- Basic & CSS3 Selectors
- Box Model, Floating and Positioning



### Day 3

- CSS Flex-Box
- Columns
- Media Queries
- Grids
- Mobile First - Responsive Design
- CSS Transitions, Transformations and Animation
- SASS & SCSS
- Using Grunt to Compile SASS and Minify CSS

### Day 4

- JavaScript Basic Concepts
  - Variables, Types, Scope
  - Control Structures
  - Functions, Arrays, Objects
- JavaScript Advanced Concepts
  - Closures
  - Prototypes
  - Bind vs. Call vs. Apply
  - Tail Calls
- JavaScript Design Patterns
  - Reveal Module
  - Factory
  - Singleton
  - Mixins
  - Chains
  - Builder
  - Promises: Q, Bluebird, ECMA Script 6

### Day 5

- Using Grunt to combine and minify JavaScript files
- Browser
  - DOM Selection - Browser API, jQuery, Dojo
  - DOM Manipulation - Browser API, jQuery, Dojo
  - DOM Events & Event Listening - Browser API, jQuery, Dojo
- Dependency Management: Require.js
  - i18n and Require.js
  - Globalization



## Week 2

### Day 6

- HTML 5 APIs
  - Web Sockets
  - Web Workers
  - Geo-location
  - Drag & Drop
  - XMLHttpRequest Object (also explore jQuery and Dojo AJAX)
  - FormData Object (DropBox style file uploads)
  - Local Storage / Session Storage / WebSQL / IndexedDB
  - Touch Interaction
- Underscore.js

### Day 7

- MongoDB & Mongoose
- HTTP Protocol
- Express
  - Node.js Web Server with REST
  - Logging & Web Sockets with Winston
  - Cookies & Security
  - XSS / CORS

### Day 8

- Backbone Models & Collections
- Backbone Validation
- Backbone Events
- Ajax with Backbone Sync

### Day 9

- Single Page Applications
- Backbone Router
- Handlebars / Grunt Processing
- Backbone Views
- JavaScript MVC with Backbone

### Day 10

- Performance Presentation, Steve, morning
- HTML Forms & JavaScript Validation



- Backbone.Stickit

### Week 3

#### Day 11

- Intro to Marionette (the most popular Backbone framework)
- ItemView, CollectionView, CompositeView
- Regions, RegionManager and LayoutView
- Building RESTful Apps with Marionette
- Development time on a large assignment

#### Day 12

- Intro to React
- How React adheres to the MV\* pattern
- Installation and setup
- The Virtual DOM
- Working with JSX
- Interactivity and Dynamic UIs
- Multiple Components, Reusable Components
- Transferring Props
- Forms

#### Day 13

- React & Flux
- Working With the Browser
- Refs to Components
- Tooling Integration
- The Flux Architecture
- Writing RESTful Apps with Flux

#### Day 14

- Dojo Overview
- Built-In Components
- Creating Custom Components

#### Day 15

- Test Automation Special Presentation, morning
- Intern Unit Testing
- Intern Functional Testing
- Intern End-To-End Testing



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