Course Outline

Backbone.js

Course Summary

Objectives

By the end of this course, students will be able to:

- Learn about the Backbone JavaScript library
- See how Backbone implements MVC and its variants
- Define Backbone Models and Collections
- Code Backbone Views with the Handlebars template library
- Implement Backbone Routers to implement links
- your Backbone apps

- Learn how Backbone communicates with servers
- Learn about Single-page applications, AJAX and how to use Backbone with the SPA architecture
- Learn about the Marionette utility library
- Code unit tests using the Jasmine testing framework
- Use Require.js to modularize

Topics

- Overview of Object-oriented JavaScript and ES6 features
- JQuery basics
- Overview of Node.js
- Backbone.js
- Backbone.js
- code with Marionette

- Single-page applications (SPAs)
- Testing JavaScript (Backbone) code with Jasmine
- Using Require.js to create JavaScript modules
- Enhancing your Backbone

Prerequisite

- Are good with HTML/CSS
- Are fluent in JavaScript
- Are comfortable with JQuery and Node

Duration

Three Days

Backbone.js

Course Outline

I.   *Overview of Object-oriented JavaScript and ES6 features*
   A.   Ins and outs of Javascript functions
   B.   New (ES6) Javascript features
   C.   Object-oriented JavaScript the ES6 way

II.   *JQuery basics*
   A.   JQuery and the DOM
   B.   Selecting DOM elements
   C.   Creating DOM elements
   D.   Iterating and chaining JQuery functions

III.   *Overview of Node.js*
   A.   Installing Node
   B.   Using the Node REPL
   C.   The event-driven IO model
   D.   Asynchronous processing
   E.   Overview of various Node modules

IV.   *Backbone.js*
   A.   What is Backbone.js?
   B.   Installing/configuring Backbone.js
   C.   Models
      1.   Model API methods
      2.   Creating your Model classes
      3.   Selected Model API methods

V.   *Backbone.js*
   A.   Collections
      1.   Creating your collection classes
      2.   Displaying collections with collection views
      3.   Selected collection API methods
      4.   The Underscore methods
   B.   Events
      1.   Event methods
      2.   Builtin Backbone.js events
   C.   Views
      1.   Creating custom views
         a.   Handlebars templating
      2.   Rendering the view
      3.   Selected View API methods
   D.   Routers
      1.   Creating router classes
      2.   The HTML5 History API
      3.   Router API methods
   E.   Rich client apps with Backbone
      1.   Rich client application features

   2.   The MVC and MV* application models
   3.   Real-time data binding
   4.   The Backbone.sync function

VI.   *Single-page applications (SPAs)*
   A.   SPA application features
   B.   Pros and cons of SPAs
   C.   What is AJAX?
   D.   Issuing AJAX calls with Backbone

VII.   *Testing JavaScript (Backbone) code with Jasmine*
   A.   What is Behavior-driven development (BDD)?
   B.   Unit test concepts and terminology
   C.   Installing/configuring Jasmine
   D.   Writing and executing unit tests with Jasmine

VIII.   *Using Require.js to create JavaScript modules*
   A.   Using Require.js in your Backbone, JavaScript code
   B.   Using Require.js in your Node.js server-side code

IX.   *Enhancing your Backbone code with Marionette*
   A.   Marionette concepts
   B.   Using Marionette classes
   C.   Marionette utility and helper functions

Final project: Develop a full-stack application using the tools discussed in this course

Labs:

- The application you will create/test/deploy
- Write some high level user requirements
- Design the User interface
- Design the data store (database)
- What's the application architecture (SPA, full-page refresh, rich client)?
- Load some data in the database
- Write test cases/apply toward code that talks with database