



12. Scripting Language

12.5 Node JS

Prerequisites:

1. HTML CSS
2. JavaScript

Duration: 30 Lectures

Course Content:

1. Introduction

- 1.1. Foundation
- 1.2. The Node.js framework
- 1.3. Installing Node.js
- 1.4. Using Node.js to execute scripts

2. Node Projects

- 2.1. The Node Package Manager
- 2.2. Creating a project
- 2.3. The package.json configuration file
- 2.4. Global vs. local package installation
- 2.5. Automating tasks with Gulp.

3. HTTP

- 3.1. The HTTP protocol
- 3.2. Building an HTTP server
- 3.3. Rendering a response
- 3.4. Processing query strings
- 3.5. Using Representational State Transfer
- 3.6. Configuring TLS



4. File System

- 4.1. Synchronous vs. asynchronous I/O
- 4.2. Path and directory operations
- 4.3. `__dirname` and `__filename`
- 4.4. Asynchronous file reads and writes

5. Buffers, Streams, and Events

- 5.1. Using buffers for binary data
- 5.2. Flowing vs. non-flowing streams
- 5.3. Streaming I/O from files and other sources
- 5.4. Processing streams asynchronously
- 5.5. Configuring event handlers

6. Modules and Unit Testing

- 6.1. Modularization
- 6.2. The CommonJS and RequireJS specifications
- 6.3. Defining modules with exports
- 6.4. Modules are singletons
- 6.5. Creating a package
- 6.6. Module scope and construction
- 6.7. Unit testing frameworks
- 6.8. What to test and how to test it
- 6.9. Building unit tests with Mocha

7. Express

- 7.1. The model-view-controller pattern
- 7.2. Defining Jade and Handlebars templates
- 7.3. Building a front-end controller
- 7.4. Defining routes
- 7.5. Creating actions
- 7.6. Configuring Express to use Handlebars
- 7.7. Using REST



- 7.8. Reading POST data
- 7.9. Building Handlebars helpers
- 7.10. Adding middleware

8. Data Sources

- 8.1. How Node.js connects to databases
- 8.2. RDBMS databases and NoSQL databases
- 8.3. Connecting to RDBMS and NoSQL databases
- 8.4. Performing CRUD operations
- 8.5. Building client requests to web services

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