

Web Development

NODE350: Introduction to Development with Node.js

\$3,195.00

- 5 Days

Upcoming Dates

Course Description

Node.js (Node) is an open-source, cross-platform, runtime environment that allows JavaScript – to run outside of the browser. Node plays a key role in cutting edge, modern usage of JavaScript and related frameworks such as Angular and React. Node has become an integral part of both development and production environments.

Developers can leverage many provided libraries to create desktop and server applications that work with the file system and HTTP. A multitude of tools can help to create various applications quickly using best practices.

This course combines lecture and hands-on exercises to get students up to speed quickly. Students will work with core modules of Node.js, and explore popular modules such as lodash, moment and Express. During the course students will develop a Rest API using Express. This course uses Postgres as a relational database but can be customized

Course Outline

Course Introduction

- Overview of Node and the course
- Connecting to class virtual machines
- Student and Instructor Introductions
- Node Development Environment Setup
- Basics of Git
- Overview of Visual Studio Code (VS Code)
- How markdown files are used in projects
- Committing code in your own branch

Executing Scripts with Node

- Installing and updating Node
- Ways to execute JavaScript using Node
- ES6 features: including ES6 classes
- Practicing with Array.prototype functions
- Review of arrow functions

Modules, globals & event loop

- What are modules

- Using the CommonJS interface for modules
- How to require custom modules
- Using the event loop
- How to require core modules
- Understanding the Event Loop
- Using the Event Emitter

Using the Node Package Manager (npm)

- Background of NPM and its usage
- The meaning and usage of packages
- Understanding how to use semver
- Creating and using package.json files
- Installing, Listing, Uninstalling and Updating Modules
- Global vs. local package installation
- When to use --save and --save-dev

Working with the filesystem and Promises

- Require-ing core file modules
- Relative path information
- Using the fs module to:
 - open, read, write files

View and create directories

- Working with Promises
- Working with Streams
- Writing and Reading from Stream Resources
- Piping and Chaining Streams
- Using buffers for binary data

Database Access with Node

- Working with the PostgreSQL database
- Overview of course database
- Using Knex as a Query Builder
- Creating a database and tables with Node
- Database CRUD with Node
- Creating a Migration for managing database changes

Creating a Simple HTTP Server to receive requests

- Reviewing the HTTP protocol
- Discussing HTTP Request methods
- Reviewing Response Codes
- Creating a HTTP basic server
- Installing and using nodemon for faster development

Getting Started with the Express Module

- Overview of Express middleware framework
- Using Express to create a server
- Creating Middleware
- Creating routes for GET, POST, PUT, PATCH,DELETE
- Creating a 404 route
- Creating a Rest API

Audience

Experienced JavaScript developers who wish to understand Node JS

Prerequisites

- Programming experience with JavaScript is required.
- Knowledge of REST based web services is helpful but not required.

What You Will Learn

After successfully completing this course, students will be able to:

- Understand Node.js fundamentals & features.
- Write custom CommonJS and ES6 Modules.
- Install and setup Node projects using npm.
- Use Node to work with files and databases.
- Leverage common core modules of Node.
- Create Express servers and work with middleware.
- Manage module dependencies / packages with package.json files.
- Build a Rest API using Node, Express and Postgres.