NodeJS and NPM

Duration: 2 days

**Objectives:**

* Learn why server-side JavaScript is useful
* Install Node.js
* Learn how Node.js is architected to allow high scalability with asynchronous code
* Create basic web applications with Node.js
* Build an HTTP server using the core modules in Node.js

**Prerequisites:**

* All participants should have experience developing Web Applications
* Participants should have experience in JavaScript Development
* Understanding of Web Services would be an added advantage

# Contents

**Introduction**

* The Node.js framework
* Installing Node.js
* Using Node.js to execute scripts
* Node Architecture
* Global Object and Process
* Modules
* Using the require() function

**Node Projects**

* The Node Package Manager
* Creating a project
* The package.json configuration file
* Global vs. local package installation

**Built-In Libraries**

* Working with the Operating System
* Working with the File Sytem
* Console and Utilities
* Debugging

**Concurrency and Events**

* I/O Operations
* The Event Loop
* Call Stack
* Callbacks, Promises
* Event Emitter

**NPM**

* What Is a Package
* Typical NPM Usage
* NPM Help
* Creating a Package.json
* Setting Defaults
* Installing Packages
* Listing Installed Packages
* Installing Global Packages
* Removing a Package
* Installing Specific Versions
* The NPM Registry
* Searching for Packages
* Pruning
* Using Simple Scripts
* Publishing Your Package

**HTTP and REST**

* The HTTP protocol
* Building a Web Server
* Realtime interaction with Socket.io
* Scaling the application

**Express**

* The model-view-controller pattern
* Defining Jade and Handlebars templates
* Building a front-end controller
* Defining routes
* Creating actions
* Creating a RESTful Web Service (CRUD based)