Overview
This introduction course covers modern web development using Angular 4 which is Google's framework for complex 'Single Page Apps'. The aim is to illuminate single-page web app development best practices, especially when architecting large scalable, modular projects. We focus on the massively powerful development ideals of the Angular framework. Through plenty of hands-on exercises the workflow and reasoning behind Angular is explained and implemented. Lots of best practices and real world examples underpin the experience gained from this course.

Note: Portions of this course will adapt and change to reflect the rapid evolution of the Angular codebase.

Outcomes
By the end of the course delegate will:
- Understand the design of applications and how Angular facilitates their development
- Master Angular expressions, filters, and scopes
- Build Angular forms
- Write Angular directives
- Test Angular applications on multi platforms

Audience
Web developers who want to be able to hand-code high-performance, responsive web applications using Google's Angular framework. This course introduces the latest version of Angular, and is ideal for anyone working in Angular 2 or Angular 4. It is not suitable if your need is Angular (Angular 1).

Prerequisites
A good understanding of the underlying technologies (HTML, CSS and JavaScript) is important to get the most from this course. Some exposure to automation tools is also helpful.

According to the audience’s abilities and requirements the course will be tailored at the trainer’s discretion.

Course Contents (5 days)

- An Overview of the Technologies
  - Using NodeJS and npm
  - SystemJS, Zone and WebPack
  - Understanding configuration files
  - How HTML5 CSS and the latest ECMAScript are used in Angular
  - Device and browser compatibility
  - Typescript and compilers

- Angular Fundamentals
  - Angular Architecture and Components
  - Structure of an Angular app
  - Dependency Injection

- Developer tools
  - Choosing an IDE
  - Automating tool-chains
  - Using browser-based developer tools
  - Angular Augury
  - Making the most of the online documentation
  - Using the Command Line interface (CLI)

- Typescript and ECMAScript Essentials
  - Classes and imports
  - Annotations
  - Typescript and data types
• Creating Angular Apps
  o Defining Modules
  o Creating html templates
  o Data Binding
  o Lifecycle hooks

• Templates
  o Interpolation
  o Property Binding
  o Attribute, Class, and Style Binding
  o Event Binding
  o Understanding NgIf, NgFor and NgSwitch

• Dependency Injection
  o Defining and Injecting Service Providers
  o Lazy injection
  o Promise-based asynchronous injection
  o The Observer pattern

• Angular Pipes
  o Overview of Pipes
  o Built-in Pipes
  o Parameterising a Pipe
  o Chaining Pipes
  o Custom Pipes

• Directives
  o Overview of Angular Directives
  o Component Directives
  o Non-visual Directives
  o Adding Directives to the application structure
  o Relationship between parent, child and sibling Component Directives

• Routing and Navigation
  o Overview of Angular Routing
  o Route Patterns
  o Query String Support
  o Route Configuration
  o Handling unexpected routes
  o History Manipulation and Deep Linking
  o RESTful services and passing parameters in the URL
  o Understanding the base meta tag

• Angular at Scale
  o Why Dependency Injection is key
  o Working with html properties rather than attributes
  o Evaluated bindings

• Using the Latest ECMAScript in Angular
  o Shadow DOM
  o Classes, Constructors, get/set
  o Back ticks and ${} interpolation
  o Arrow functions, rest and default
  o Optional parameters

• Sending and Receiving Server-Side Data
  o Creating http get and post calls
  o Handling parameters and headers
  o Consuming JSON
  o Using the RxJS Observable pattern
  o Resolving or rejecting promises
  o Creating and consuming Service providers

• Custom Events
  o Inputs, Outputs and EventEmitter
  o Passing data via custom events
  o Decoupled components
  o Creating an event bus
  o Attribute, Class and Style binding

• Forms and Validation
  o Understanding NgForm and local field naming
  o Structuring form fields, names and bindings
  o Handling form models on the client
  o Validating form fields
  o Showing and hiding validation error messages
  o Improving the user experience
  o Sending form data to a server

• Production build
  o optimize for production
  o enable prodMode
  o Including other libraries
  o Optimizing CSS and image assets
  o Just In Time and Ahead of Time compiling

• Testing
  o Karma, Protractor and Jasmine
  o Setting up a testing environment
  o Writing and using tests
  o Test-driven development
Course Materials
Enliten IT will provide each delegate with a workbook and other useful reference materials where applicable. These may be either paper based or in Adobe pdf format or a combination thereof.

Notes:
Enliten IT reserves the right to modify course content and materials as required in the interests of continuous course improvement, at any time, without notification.

The suggested course duration is a guideline. Course topics and duration may be modified by the instructor based upon the knowledge and skill level of the course participants.

We only offer Angular courses on a private in-house basis. For pricing and availability just pick up the phone and call on 0845 1085481.