Using Angular
Duration: 4 days (9 hours each day with working lunch)

Angular is a total rewrite of the popular AngularJS framework, focused on improving both developer productivity and runtime performance. It was written using TypeScript, but can be coded using TypeScript, Dart, and JavaScript. This hands-on course will help developers not only make use of Angular, but also create maintainable client-side code. We will cover the core features of Angular, *using the language of your choice,* along with techniques to leverage automated testing.

The course has a good balance of interactive lectures and hands-on exercises. The attendees are expected to pair-up and work on the lab exercises. The instructor will assist the attendees as they work on the labs. The objective of the course is for the attendees to gain an in depth practical knowledge of the concepts so they can put them to immediate use on their real projects.

The course content will be customized to meet your teams' specific needs. Please review this detailed outline and suggest changes (additions, deletions, modifications) as you feel fit.

Topics

Developing with Angular
* Why Angular?
* An overview of the environment
* A quick short example
* Exercises

Quick Introduction to TypeScript or to ES6
*This section will vary depending on which language is chosen by the team
* Typing and type inference
* Defining functions
* Default and Optional parameters
* Interfaces and classes
* Generics
* Modules
* Decorators
* Exercises

Creating Components
* Models
* Configuring Components
* Good practices
* Dependencies
* Automated testing of Components
* Exercises

Creating Pipes
* Pipes
* Mutability vs. Immutability
* Pure vs. Impure Pipes
* Builtin pipes
* Creating custom pipes
* Automated testing of Pipes
* Exercises

Creating Services
* Communicating with back end
* Ajax Calls
* Working with Rx Observables
* Using Promises
* Automated testing of Services
* Exercises

Working with Forms
* Using Forms
* Form validations
* Creating custom validators
* Exercises

Reactive Forms
* Model Driven forms
* Reasons to go this route
* Creating dynamic forms
* Using validators in dynamic forms
* Custom validators and dynamic forms
* Exercises

Creating Directives
*Types of Directives
*Directives we've seen already
*Builtin Directives
*Creating Custom Directives
* Exercises

Working with Multiple Components
* Component interactions
* Inputs and Outputs
* Designing with multiple components
* Managing state
* Exercises

Configuring Routes
* Routes
* Components and Routes

* Working with routes
* Passing parameters to routes
* Automated Testing routes
* Exercises

Mastering Dependency Injection
* Deep dive into dependency injection
* Managing dependencies
* Configuring dependency injection
* Exercises

Automated Testing
* Need for automated testing
* Testing at the right level to the right measure
* Testing components, pipes, services
* Integration testing
* Measuring code coverage
* Exercises

About the Instructor

Dr. Venkat Subramaniam is an award-winning author, founder of Agile Developer, Inc., creator of agilelearner.com, and an instructional professor at the University of Houston.

He has trained and mentored thousands of software developers in the US, Canada, Europe, and Asia, and is a regularly-invited speaker at several international conferences. Venkat helps his clients effectively apply and succeed with sustainable agile practices on their software projects.

Venkat is a (co)author of multiple technical books, including the 2007 Jolt Productivity award winning book Practices of an Agile Developer. You can find a list of his books at agiledeveloper.com. You may read more about Venkat and Agile Developer, Inc. at http://agiledeveloper.com.