**MVC 5 & Angular JS**

**Duration: 8 Days**

**Hardware / Software Required**

**4GB RAM, i5 or i7 Processor**

**Software**

**VS 2012/13**

**Sql server 2014/2016**

**Pre requisite**

**Knowledge in javascript, C# and ASP.NET and MVC concepts**

**Day 1**

1. **Scope**
   1. Scope in JavaScript
   2. The var Keyword
   3. Scope in Nested Functions
   4. The let Keyword
   5. Exercise: Scope
2. **Advanced Objects**
   1. Object-Oriented Programming
   2. Prototyping
      1. Objects in JavaScript
      2. Prototyping in JavaScript
   3. Composing Prototypes
   4. Exercise: Prototyping
   5. ES6 Classes
   6. Static Methods
   7. Exercise: ES6 Classes & Static Methods
   8. Inheritance
   9. Maps
      1. Map vs Object?
   10. Sets
   11. Exercise: Guessing Game with Map and Set
   12. Objects as Namespaces
3. **Advanced Functions**
   1. Function Declarations
   2. Function Expressions
   3. Default Values
   4. Flexible Arguments
   5. Exercise: Flexible Arguments
   6. Closures
   7. Exercise: Closures
   8. Immediately-Invoked Function Expressions (IIFEs)
   9. Callbacks
   10. Recursion
   11. Exercise: Recursion
4. **Advanced Arrays**
   1. Arrays
   2. Arrays Methods
   3. Iterators and Arrow Functions
      1. Iterators
      2. Arrow Functions
   4. Static Array Methods
      1. Array.isArray()
      2. Array.from()
      3. Array.of()
   5. Array Prototype Methods
      1. Array.prototype.fill()
      2. Array.prototype.filter()
      3. Array.prototype.find()
      4. Array.prototype.forEach()
      5. Array.prototype.indexOf()
      6. Array.prototype.keys()
      7. Array.prototype.map()
      8. Array.prototype.reduce()
   6. Exercise: Find the Mode
5. **XHR**
   1. XMLHttpRequest
   2. The XMLHttpRequest Object
      1. Handling the Response
   3. Node.js
      1. Installing Node.js
      2. Running Node.js
      3. A First Node.js Application and Server
   4. Using the XMLHttpRequest Object
   5. Exercise: Ajax using the POST method
   6. The Callback Function
   7. Exercise: Displaying and Updating Records
   8. Promises
   9. CORS/JSONP: Accessing Remote Sites
   10. Exercise: Retrieving Country Info from GeoNames via CORS
   11. JSONP
   12. Exercise: Retrieving State Names from Yahoo! with JSONP
   13. CORS vs. JSONP Differences
6. **JSON**
   1. JSON
   2. Review of Object Literals
      1. Arrays
      2. Objects
      3. Arrays in Objects
      4. Objects in Arrays
   3. Back to JSON
      1. JSON Syntax
      2. JSON Parsers
   4. Exercise: Using JSON
7. **Errors and Exceptions**
   1. Runtime Errors
      1. Completely unhandled errors
      2. Globally handled errors
      3. Structured Error Handling
      4. Throwing custom errors
   2. Nested Try/Catch
   3. Exercise: Try/Catch/Finally
8. **Regular Expressions**
   1. Getting Started
      1. JavaScript's Regular Expression Methods
      2. Flags
      3. String Methods
   2. Regular Expression Syntax
      1. Start and End ( ^ $ )
      2. Number of Occurrences ( ? + \* {} )
      3. Common Characters ( . \d \D \w \W \s \S )
      4. Grouping ( [] )
      5. Negation ( ^ )
      6. Subpatterns ( () )
      7. Alternatives ( | )
      8. Escape Character ( \ )
   3. Backreferences
   4. Form Validation with Regular Expressions
   5. Exercise: Advanced Form Validation
   6. Cleaning Up Form Entries
   7. Exercise: Cleaning Up Form Entries

**Day 2 to Day 4**

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| **Proposed Topics for MVC 5 Training:** | |
| 1 | What is MVC ? / Why MVC ? |
| 2 | MVC vs Web Forms |
| 3 | Creating your first [ASP.NET](http://asp.net/) MVC Hello World |
| 4 | Understanding the MVC Architecture |
| 5 | Understanding Routing in [ASP.NET](http://asp.net/) MVC |
| 6 | Defining URL Routes |
| 7 | Registering Routes |
| 8 | Views [ASP.NET](http://asp.net/) MVC |
| 9 | ViewData / ViewBag / TempData / Session |
| 10 | Basics of Razor |
| 11 | Model and Strongly Typed Views |
| 12 | Model Binders |
| 13 | HTML Helpers |
| 14 | Partial Views / Layout Views |
| 15 | Controllers in [ASP.NET](http://asp.net/) MVC |
| 16 | Global Action Filters |
| 17 | Difference between ActionResult and ViewResult in MVC |
| 18 | Overload MVC Action Methods |
| 19 | Models in [ASP.NET](http://asp.net/) MVC |
| 20 | Data Annotations |
| 21 | Custom Validations Attributes |
| 22 | Windows and Forms Authentication in MVC |
| 23 | Entity Framework in MVC |
| 24 | Why Ajax ? |
| 25 | Implement AJAX using JSON and JQuery |
| 26 | Best Practices for [ASP.NET](http://asp.net/) MVC |
| 27 | Exception Handling in MVC |
| 28 | Need of WebAPI in MVC |
| 29 | How can we use MVC areas for better Modular Development |
| 30 | What is SPA ? |
| 31 | How to MVC with Angular? |
| 32 | Improve Reusability with Angular |
| 33 | How to MVC WebGrid ? |
| 34 | How to do update & delete using MVC, WebAPI, EF & Angular? |
| 35 | Bundling and Minification |
| 36 | Understanding CORS issue |
| 37 | Implementing other design patterns in MVC |
| 38 | Cross site scripting prevention in MVC (if any) |
| 39 | Interacting with SQL DB with MVC architecture |
| 40 | Performance considerations – what are best practices for highly performant applications and what are some of the don’ts |
| 41 | Real life, practical use cases |
| 42 | Unit Testing with MVC Projects |
| 43 | Small Project using [ASP.NET](http://asp.net/) MVC, EF, WEB API |
|  | Day 5 to Day 7 |
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| **Proposed Topics for Angular JS Training:** | |
| A | Purpose of Training |
| B | Expectations |
|  |  |
| 1 | What is Full Stack Web Development |
| 2 | Angular Js (What? Why ? & How ?) |
| 3 | Bootstrap(What? Why ? & How ?) |
| 4 | Angular Development Setup |
| 5 | Building Blocks of Angular |
| 6 | Data Binding & Directive |
| 7 | Controllers & Separating Concern |
| 8 | $scope vs. 'this' and 'controller as' syntax |
| 9 | Common Directives |
| 10 | Modules & Services |
| 11 | Built-in Filters |
| 12 | Routing & Templates |
| 13 | Building SPA with Angular & Bootstrap |
| 14 | Sharing Data Between Controllers |
| 15 | $broadcast,$emit &$on |
| 16 | Structuring Your Angular App |
| 17 | Building Sample App with building blocks of Angular Js? |
| 18 | Do’s & Don’ts of Angular Js |
| 19 | Sample Applications using Angular Js and .NET  Web Api |
| 20 | Security features in Angular JS |
| 21 | Authentication in Angular JS |
| 22 | Single page Application Development in Angular JS |

Day 8

Project (Business Requirements to be shared from client)

Additional topics

Day 9

Nodejs

Nunit Framework

Moq Framework

Design Pattern

Singleton

Factory pattern

Password Hashing

Nhibernate - demo

angular ui grid