

# Web API

## 1 *Building a Basic Web API*

- Choosing ASP.NET Web API or WCF
- Exposing an In-Memory List over HTTP
- Choosing Configuration over Convention
- Playing by the Rules of HTTP

## 2 *Debugging and Tracing*

- Using Fiddler for Web Debugging
- Capturing Console App Traffic through Fiddler
- Capturing HTTPS Traffic in Fiddler
- Composing and Submitting Requests in Fiddler
- Using F12 Developer Tools in Internet Explorer
- Using Developer Tools in Chrome
- Enabling ASP.NET Web API Tracing
- Creating a Custom Trace Writer
- Tracing Entry and Exit
- Tracing from Your Code
- Tracing Request and Response Messages

## 3 *Media-Type Formatting CLR Objects*

- Listing the Out-of-Box Media Formatters
- Understanding Conneg
- Requesting a Content Type through the Query String
- Requesting a Content Type through the Header
- Implementing a Custom Media Type Mapping

- Overriding Conneg and Returning JSON
- Piggybacking on Conneg
- Creating a Custom Media Formatter
- Extending an Out-of-Box Media Formatter
- Controlling Which Members Are Serialized
- Controlling How Members Are Serialized
- Returning Only a Subset of Members

## ***4 Customizing Response***

- Negotiating Character Encoding
- Supporting DBCS Character Encoding (Shift JIS)
- Negotiating Content Encoding (Compression)
- Negotiating Language

## ***5 Binding an HTTP Request into CLR Objects***

- Reading the Raw HTTP Request
- Reading the HTTP Request into a CLR Type
- Binding the HTTP Request to Simple Types
- Binding the HTTP Request to Complex Types
- Binding the HTTP Request to a Collection
- Binding the Form Data
- Binding dd/MM/yyyy Dates
- Using TypeConverter
- Creating a Custom Value Provider
- Creating a Custom Model Binder
- Creating a Custom Parameter Binder
- Creating a Custom Media Formatter

## 6 *Validating Requests*

- Validation Using Data Annotations
- Handling Validation Errors
- Extending an Out-of-the-Box Validation Attribute
- Creating Your Own Validation Attribute
- Implementing the IValidatableObject Interface

## 7 *Managing Controller Dependencies*

- Taking Dependency on the Entity Framework
- Inverting Entity Framework Dependencies
- Using the Repository Pattern
- Using the Generic Repository Pattern
- Mapping a Domain to Data Transfer Object (DTO)
- Injecting Dependencies Using StructureMap
- Unit-Testing the Controller

## 8 *Extending the Pipeline*

- Creating a Message Handler
- Creating an Exception Filter
- Creating an Action Filter to Handle Concurrency
- Creating a Controller Selector for Versioning

## 9 *Hosting ASP.NET Web API*

- Web Hosting ASP.NET Web API
- Self-Hosting ASP.NET Web API

## ***10 Securing ASP.NET Web API***

Implementing Direct Authentication

Implementing Brokered Authentication

Authorizing Requests

## ***11 Consuming ASP.NET Web API***

Calling a Web API from a Console Application

Calling a Web API from a WPF Application

Calling a Web API from JavaScript

## ***12 Building a Performant Web API***

Creating Asynchronous Action Methods

Pushing Real-time Updates to the Client

Implementing Simple Web Caching