

WCF Training (Basic + Advanced) – Course Content

Day -1

1. Introduction to WCF

What is Service Oriented Architecture?

- ✓ http://en.wikipedia.org/wiki/Service-oriented_architecture
- ✓ <http://msdn.microsoft.com/en-us/library/bb833022.aspx>

a. What is WCF?

- ✓ <http://msdn.microsoft.com/en-us/library/ms731082.aspx>

b. WSDL

- ✓ http://www.w3.org/TR/2001/NOTE-wsdl-20010315#_8

c. Service Meta Data

- ✓ <http://msdn.microsoft.com/en-us/library/ms731823.aspx>

2. Develop and Consume WCF Service?

a. Service Contracts - <http://msdn.microsoft.com/en-us/library/ee960162.aspx>

- ✓ *Defining Service Contracts*
- ✓ *Defining Operation Contracts*
- ✓ *Services with Multiple Contracts*
- ✓ *Contract Inheritance*
- ✓ *Operation Overloading*

b. Data Contracts - <http://msdn.microsoft.com/en-us/library/ms733127.aspx>

- ✓ *Implementing Data Contracts*
- ✓ *Mapping Data Contracts to XSD Schema*
- ✓ *Serialization*
- ✓ *Arrays and Generic Collections*
- ✓ *Enums*
- ✓ *Shared data contract in multiple services*

c. Consume WCF Services

Day -2

3. Transports, WCF Configurations

- a. Multiple Transports and Encodings - <http://msdn.microsoft.com/en-us/library/ms729350.aspx>
 - ✓ *Http transport*
 - ✓ *Tcp transport*
 - ✓ *Named pipe*
- b. Bindings - <http://msdn.microsoft.com/en-us/library/ms733027.aspx>
- c. Throttling -
 - ✓ <http://www.codeproject.com/Articles/33362/WCF-Throttling>
 - ✓ <http://msdn.microsoft.com/en-us/library/ms733932.aspx>
- d. Configurations...
 - ✓ Quotas - <http://msdn.microsoft.com/en-us/library/ms731078.aspx>

4. Faults

- a. Faults and Exceptions
- b. Generating and Handling Faults
- c. Fault Contracts

5. Message Patterns

- a. Request/Reply
- b. One Way
- c. Duplex - <http://www.c-sharpcorner.com/uploadfile/dhananjaycoder/a-simple-duplex-service-in-wcf/>

6. Instance Management

- a. Per-Call Services
- b. Per-Session Services
- c. Singleton Services

Day - 3

7. WCF – What is next to WCF Basic?

- Message inspector
- WCF Tracing
- Performance Counter
- Consume WCF Service without Configurations

8. Contract Versioning

- Versioning of Data Contract
 - Schema validation required vs. Schema validation not required
 - Breaking vs. Non-Breaking changes
- Versioning of Service Contract

Day – 4

WCF Security: Clients Authentication and Authorization, Message Protection

- What it takes to secure WCF Services?
 - Authenticating Clients
 - Authorizing Clients
 - Message protection
- Transfer Security Techniques
 - Transport level
 - Message level
- Transfer Security Mode with supported credentials
- HTTP Transport Security (HTTPS)

Day - 5

9. AJAX and Rest Support

- a. Rest
 - i. Creating and Consuming Restful Services
 - ii. Testing Rest Services – Firefox Rest Client
- b. JSON WCF Service

Assignment

WCF Services - Specifications

1. Two WCF Services
 - a. Book purchase Service
 - i. Search for books using domains
 - ii. Get quotes
 - iii. Order book
 - b. Customer Relations Department - Duplex Service
 - i. Handle customer query – Customer asks queries.
 - ii. Customer receives response from Service after all the data related to query in system is checked. Use duplex service for this.
2. Data Contract should use known types like Technical Book is inherited from Book
3. Use Custom Fault Contract for handling faults. Use code to specify exact error code in fault contract.
4. Book Purchase Service should work with ASMX end point.

Consumption of Service in another WCF Service

5. Create another service which is extension of the core book purchase service. Use binaries of core book store service in new extension service.
6. Define additional known type for Book in extension service

Consume web service

7. Create a client for using console application.
8. Use extension of book purchase service and core customer relations department service
9. Use the faults code to deduce the error messages to customer.

Note,

1. Don't spend much time on business logic. Hard coded data on service side is fine.
2. Naming convention, data contract, project structure is important in evaluation.