

LINQ And Entity Framework Training Syllabus

C# Language Extension3.5

1. Type Inference
2. Object Initializers
3. Anonymous Types
4. Extension Methods
5. Partial Methods

LINQ Architecture

1. Understanding the LINQ Framework
2. LINQ Provider
 1. I. LINQ to Object
 2. II. LINQ to SQL
 3. III. LINQ to Dataset
 4. IV. LINQ to XML

LINQ to Object

1. IEnumerable <T> and IQueryable<T> interface
2. System.Linq namespace
3. Query Expressions
4. Lambda Expressions
5. Using Custom Class Collection

LINQ to SQL

1. Defining the Data Model class
2. Using Mapping attributes
3. Using the Data Context class
4. Defining Relationships using Associations
5. Creating a customized Data Context class
6. LINQ to SQL Designer(DBML File)
7. Performing Add/Edit/Delete/View Operations
8. Tracking changes to entities
9. Submitting changes
10. Concurrency error handling issues
11. Join Query
12. Validating Entities
13. Transaction Handling
14. Executing Stored Procedure
15. LINQ to SQL architecture

LINQ to XML

1. Understanding the LINQ to XML Class hierarchy

2. Create an XML document
3. Loading existing XML document
4. Querying XML using LINQ to XML
5. Manipulating XML
 1. Adding nodes
 2. Modifying nodes
 3. Deleting nodes

LINQ to Dataset

1. Querying Datasets
2. Querying typed Datasets
3. Using LINQ over Dataset with Table Adapter

Entity Framework Introduction

1. What is ADO.NET Entity Framework
2. Comparing EF with LINQ to SQL
3. EF Architecture
4. EF Versions History
5. First EF Application and Creating EDMX File
6. DbContext vs ObjectContext

CRUD Operations

1. Members of DbContext and DbSet
2. Entity Life Cycle and ObjectStateManager
3. Example Performing CRUD Operations
4. Executing Stored Procedure
5. EDM Relationships

Querying Database

1. LINQ Queries
2. Entity SQL Queries
3. Lazy Loading
4. Eager Loading
5. Explicit Loading
6. No-Tracking Queries

Additional Features

1. Inheritance Type
 1. Table Per Type inheritance
 2. Table Per Hierarchy inheritance
2. Modeling Techniques
 1. Database First
 2. Model First
 3. Code First

Introduction Entity Framework

1. What is Entity Framework
2. EF Architecture
3. Comparing EF with LinQ to SQL
4. First EF Application

VS.NET Modeling Techniques.

1. Database First
2. Model First
3. Code First

Sample Application

1. Creating EDMX File
2. Life Cycle to Understand CRUD Operations
3. ObjectStateManager
4. Executing Stored Procedure
5. Table Per Type inheritance
6. Table Per Hierarchy inheritance

EDM Relationships

1. One to One
2. One to Many
3. Many to Many
4. Lazy Loading
5. Early Loading
6. Navigation Properties

Querying Database

1. LINQ Queries
2. Entity Queries
3. Object Query
4. Query Builder Syntax
5. Debugging Queries
6. Query Returning Anonymous Objects
7. Parameterized Queries

Caching

1. Overview
2. Page Output Caching
3. Page Fragment Caching
4. Data Caching
5. SQL Cache Invalidation
 1. Notification-based Invalidation

2. Polling-based Invalidation

6. Expiration Policies and Cache Dependencies

Configuration

1. Configuration Overview
2. Machine.Config and Web.Config
3. Inheritance of Configuration Settings
4. Configuration File Format
5. Retrieving Application Configuration Data and database connection strings
6. CacheProfile
7. URL Rewriting - (Programmatically and using config files)
8. Custom Error Handling.

Trace Functionality

1. Overview of Tracing
2. Trace Information
3. Page-Level Trace
4. Application-Level Trace

Configuration

1. Configuration Overview
2. Machine.Config and Web.Config
3. Inheritance of Configuration Settings
4. Configuration File Format
5. Retrieving Application Configuration Data and database connection strings
6. CacheProfile
7. URL Rewriting - (Programmatically and using config files)
8. Custom Error Handling.

Security

1. Authentication & Authorization
2. Windows Based Authentication
3. Form Based Authentication
4. Authorizing Users and Roles
5. Impersonation
6. Using Login Controls
7. ASP.NET Membership and Roles
8. Securing Non-ASP.NET files

Globalization and Localization

1. Request and Response Encoding
2. Local and Global Resources

3. Implicit Expressions to Local Resources
4. Explicit Expressions to Local Resources
5. Programmatic Access to Global Resources
6. Localizing Static Content
7. Storing Language Preferences
8. Right to Left Mirroring
9. Culture specific formatting

Personalizing Using Web Parts

1. Webpart Controls
2. Editing Webparts
3. Custom Webparts using UserControl
4. Personalizing

AJAX.NET

1. Architecture
2. Working with AJAX Pro
3. Using AJAX.NET Controls