

LINQ Syllabus

C# Language Extension 3.5 (Prerequisite)

- Type Inference
- Object Initializers
- Anonymous Types
- Extension Methods
- Partial Methods

LINQ Architecture

- Understanding the LINQ Framework
- LINQ Provider
 - I. LINQ to Object
 - II. LINQ to SQL
 - III. LINQ to Dataset
 - IV. LINQ to XML

LINQ to Object

- IEnumerable <T> and IQueryable<T> interface
- System.LINQ namespace
- Query Expressions
- Lambda Expressions
- Using Custom Class Collection

LINQ to SQL

- Defining the Data Model class
- Using Mapping attributes
- Using the Data Context class
- Defining Relationships using Associations
- Creating a customized Data Context class
- LINQ to SQL Designer(DBML File)
- Performing Add/Edit/Delete/View Operations
- Tracking changes to entities
- Submitting changes
- Concurrency error handling issues
- Join Query
- Validating Entities
- Transaction Handling
- Executing Stored Procedure
- LINQ to SQL architecture

LINQ to XML

- Understanding the LINQ to XML Class hierarchy
- Create an XML document
- Loading existing XML document
- Querying XML using LINQ to XML
- Manipulating XML
 1. Adding nodes
 2. Modifying nodes
 3. Deleting nodes

LINQ to Dataset

- Querying Datasets
- Querying typed Datasets
- Using LINQ over Dataset with Table Adapter

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Entity Framework Syllabus

Entity Framework Introduction

- What is ADO.NET Entity Framework
- Comparing EF with LINQ to SQL
- EF Architecture
- EF Versions History
- First EF Application and Creating EDMX File
- DbContextvsObjectContext

CRUD Operations

- Members of DbContext and DbSet
- Entity Life Cycle and ObjectStateManager
- Example Performing CRUD Operations
- Executing Stored Procedure
- EDM Relationships

Querying Database

- LINQ Queries
- Entity SQL Queries
- Lazy Loading
- Eager Loading
- Explicit Loading
- No-Tracking Queries

Additional Features

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