Course : ADO.NET Entity Framework, mastering and optimizing

Practical course - 2d - 14h00 - Ref. EFC
Price : 1500 CHF E.T.

★★★★☆ 3,8 / 5

During this course, you'll gain an understanding of all Entity Framework services and see how to use them to simplify data access in your .NET applications. You'll learn how to perfect your queries and achieve optimal execution times.

🎯 Teaching objectives

At the end of the training, the participant will be able to:

- ✓ Creating an Entity Framework data model
- ✓ Data context configuration
- ✓ Understanding how offline mode works
- ✓ Mastering data loading
- ✓ Control and optimize update operations
- ✓ Managing schematic changes with migrations

Intended audience

Developers responsible for data access in .NET applications. Project managers, software architects.

Prerequisites

Good knowledge of C# and data access with the .NET framework. Experience required.

Course schedule

1 Introduction

- Principle and benefits of Relational Object Mapping.
- Entity Framework version history.
- Entity Framework architecture.
- CodeFirst or BaseFirst approach.

PARTICIPANTS
Developers responsible for data access in .NET applications. Project managers, software architects.

PREREQUISITES
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TRAINER QUALIFICATIONS
The experts leading the training are specialists in the covered subjects. They have been approved by our instructional teams for both their professional knowledge and their teaching ability, for each course they teach. They have at least five to ten years of experience in their field and hold (or have held) decision-making positions in companies.

ASSESSMENT TERMS
The trainer evaluates each participant's academic progress throughout the training using multiple choice, scenarios, hands-on work and more.
Participants also complete a placement test before and after the course to measure the skills they've developed.

2 Creating a database

- Choice of data provider.
- Connection configuration.
- Create a model and data context.
- Mapping conventions.
- Database creation and initialization.

Hands-on work
Create a database from a simple model.

3 Data model definition

- Definition of mapping via annotations or Fluent API.
- Mapping of enums and complex types.
- Inheritance (TPT, TPH and TPC).
- Using views.

Hands-on work
Create a multi-table database with type and relationship configuration.
Create and map a view.

4 Migration

- Preparation of migration tools (installation and creation of history table).
- Creation of a migration.
- Run a migration in Visual Studio or by code.
- Migration management.

Hands-on work
Current migrations.

5 Querying with LINQ to Entities

- Understand the SQL generation mechanism.
- View operations with logs.
- A reminder of how LINQ works (extension methods, lambdas and common operators).
- Role of navigation properties.
- Control the loading of entities and related data.

Hands-on work
Create a model based on an existing database and perform common queries, including different scenarios for loading entity sets.

6 Data updates

- Understand the role of the entity tracking service.
- Data updating (insertion, deletion, modification).
- Manage update exceptions.
- Optimize updates with local validations.
- Execute SQL commands.

Hands-on work
Implementation of the points presented.

(**7**) **Advanced techniques**

- Competitive conflict management (detection and resolution).
- Using stored procedures.
- Transactions through the application.

Hands-on work
Implementation of the points presented.

(**8**) **Repository and UOW architecture models**

- Interest in and implementation of the Repository model.
- Context sharing with UOW.
- Principle of the dependency injection system.

Hands-on work
Implementing a repository with dependency injection in an ASP NET MVC application.

Dates and locations

REMOTE CLASS
2026 : 13 Apr., 29 June, 9 Nov.