

# LINQ & Entity Framework Core

Lesson 00



# Document History

Date	Course Version No	Software Version No	Developer/ SME	Reviewer(s)	Approver	Change Record Remarks
6-Jul-2020	1.0	Visual Studio 2017	RamKumar	Shital Patil		



# Course Goals and Non Goals

## Course Goals:

- To Understand Entity Framework Core 2.1
- Establish database connectivity using EF Core 2.1
- Invoking Stored Procedure in EF Core 2.1

## Non Goals:

- Develop Distributed multi-tier Desktop application using C# establishing SQL Server db connectivity using EF Core



# Pre-requisites

- .NET Core
- SQL Server
- ADO.NET



# Intended Audience

Software Developers looking to learn and develop .NET applications





# Day Wise Schedule

## Day 1

- Lesson 1: Introduction to LINQ to Objects
- Lesson 1A: Understanding LINQ to DataSet
- Lesson 2: Introduction to EF Core
- Lesson 2A: EF Core Features

## Day 2

- Lesson 3: EF Core DB First Approach
- Lesson 3A: EF Core Code First Approach
- Lesson 4: LINQ to Entities
- Lesson 4A: CRUD Operations in EF Core

## Day 3 (0.5 Day only)

- Lesson 5: Logging & Calling Stored Procedure in EF Core



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## Lesson 1: Introduction to LINQ to Objects

- 1.1 LINQ Overview

- 1.2 LINQ Architecture

- 1.3 LINQ Basic Query Operations

- 1.4 Deferred Execution & Immediate Execution

- 1.5 let Keyword

## Lesson 1A: LINQ to DataSet

- 1A.1 Understanding & Implementing LINQ to DataSet



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## Lesson 2: Introduction to EF 6.0 & EF Core

- 2.1 Entity Framework Overview

- 2.2 Architecture of EF 6.0

- 2.3 Entity Data Model

- 2.4 Working with Entities

## Lesson 2A: EF Core Features

- 2A.1 Working with Entities in EF Core

- 2A.2 EF Core Database Providers





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## Lesson 3: EF Core DB First Approach

### 3.1 EF Core DB Providers

### 3.2 Steps to implement DB First Approach in EF Core

## Lesson 3A: EF Core Code First Approach

### 3A.1 Steps to implement Code First Approach in EF Core

### 3A.2 Migrations in Code First Approach

### 3A.3 Update Database in Code First Approach



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## Lesson 4: LINQ to Entities

- 4.1 Overview of DbContext
- 4.2 EF Core DbSet
- 4.3 DbContext Methods
- 4.4 LINQ to Entities Basic Query Operations
- 4.5 Loading Related Data

## Lesson 4A: CRUD Operations in EF Core

- 4A.1 EF Core DML Implementation
- 4A.2 Inserting Record
- 4A.3 Updating Record
- 4A.4 Deleting Record
- 4A.5 Transaction in EF & EF Core



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## Lesson 5: Logging & Calling SP in EF Core

- 4.1 Logging in .NET Core

- 4.2 Raw SQL Queries in EF Core

- 4.3 Invoke SP using .FromSql()

- 4.4 Invoke SQL Query & SP using ExecuteCommand()



# References

## WebSites:

- <https://docs.microsoft.com/en-us/ef/core/what-is-new/ef-core-2.1>
- <https://docs.microsoft.com/en-us/ef/core/querying/>
- <https://docs.microsoft.com/en-us/ef/core/querying/raw-sql>
- <https://docs.microsoft.com/en-us/ef/core/saving/>
- <https://docs.microsoft.com/en-us/ef/core/miscellaneous/connection-strings>
- <https://docs.microsoft.com/en-us/ef/core/get-started/?tabs=netcore-cli>
- <https://docs.microsoft.com/en-us/ef/core/miscellaneous/logging?tabs=v3>



## Books:

- Entity Framework Core in Action
  - By Jon P Smith
- Mastering Entity Framework Core 2.0
  - By Prabhakaran Anbazhagan
- Beginning Entity Framework Core 2.0
  - By Rouleau, Derek J.
- Entity Framework Core Cookbook - Second Edition Paperback
  - By Ricardo Peres