# Entity Framework 6.1, Part 1 of 6: Introduction

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**Meet the expert:** Don Kiely is a featured instructor on many of our SQL Server and Visual Studio courses. He is a nationally recognized author, instructor, and consultant specializing in Microsoft technologies. Don has many years of teaching experience, is the author or co-author of several programming books, and has spoken at many industry conferences and user groups. In addition, Don is a consultant for a variety of companies that develop distributed applications for public and private organizations.

**Prerequisites:** This course assumes that you are experienced with relational database design and programming concepts. Entity Framework is all about data access, and the course doesn't spend any time on data fundamentals. You'll also need a good understanding of object-oriented programming in C#, so that you know how to use the entity data objects that Entity Framework generates from your data model. You'll also need to have a working knowledge of Language INtegrated Queries (LINQ) in C#. The course uses Entity Framework with various SQL Server databases, so you should know enough about SQL Server to know how to perform various tasks and be able to connect to a database. But you don't need deep knowledge of SQL Server to use Entity Framework productively.

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**Course description:** In this course you'll learn some of the basics of object relational mapping systems and how they overcome some of the problems when working with relational data in an object based application. You'll also see how entity objects are a big improvement over generic data objects, such as the data set and the data tables provided by ADO.NET. Then you'll learn specifically about the Entity Framework, Microsoft's ORM technology and why it is a compelling data access technology in the .NET development space. Big spoiler, it's not just because Microsoft has made Entity Framework their core data access strategy. You'll see Entity Framework in action to build a simple but powerful data access application as well as some of the APIs and tools it provides.

**Course outline:**

**Data Access Issues**
- Introduction
- Object-Relational Mapping
- Object/Relational Differences
- Data Type Differences
- Relationship Difference
- Inheritance Difference
- Identity/Equality Difference
- Handling the Differences
- Summary

**Object Relational Mapping**
- Introduction
- Object-Relational Mapping
- Generic Data Objects
- Entity Objects
- Programming Against a Model
- Summary

**The Entity Framework**
- Introduction
- The Entity Framework
- Compatibility with VS and .NET
- Entity Framework as Open Sourc
- Installing Entity Framework
- Demo: Installing EF
- Why Use Entity Framework?
- When Not to Use an ORM?
- Summary

**Building an Application**
- Introduction
- Building an Application
- Demo: Building an Application
- Demo: Creating a new Connection
- Demo: Data Objects
- Demo: Building - the model
- Summary

**Entity Object Project**
- Introduction
- Demo: Model Designer
- Demo: Properties
- Demo: Relationships
- Demo: XML View
- Demo: Top Level File
- Summary

**Using Entity Objects**
- Introduction
- Using the Entity Objects
- Demo: Console Application
- Demo: Access Code
- Demo: Process Code
- Summary

**API and Tools**
- Introduction
- EntityFramework APIs and Tools
- Entity Data Model Designer
- Design Methodologies
- Code Generation Using T4
- Object Services
- Entity Client
- Entity Framework Services
- Summary