

Interface and Abstraction Implementation

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Version 1.1.0



Overview

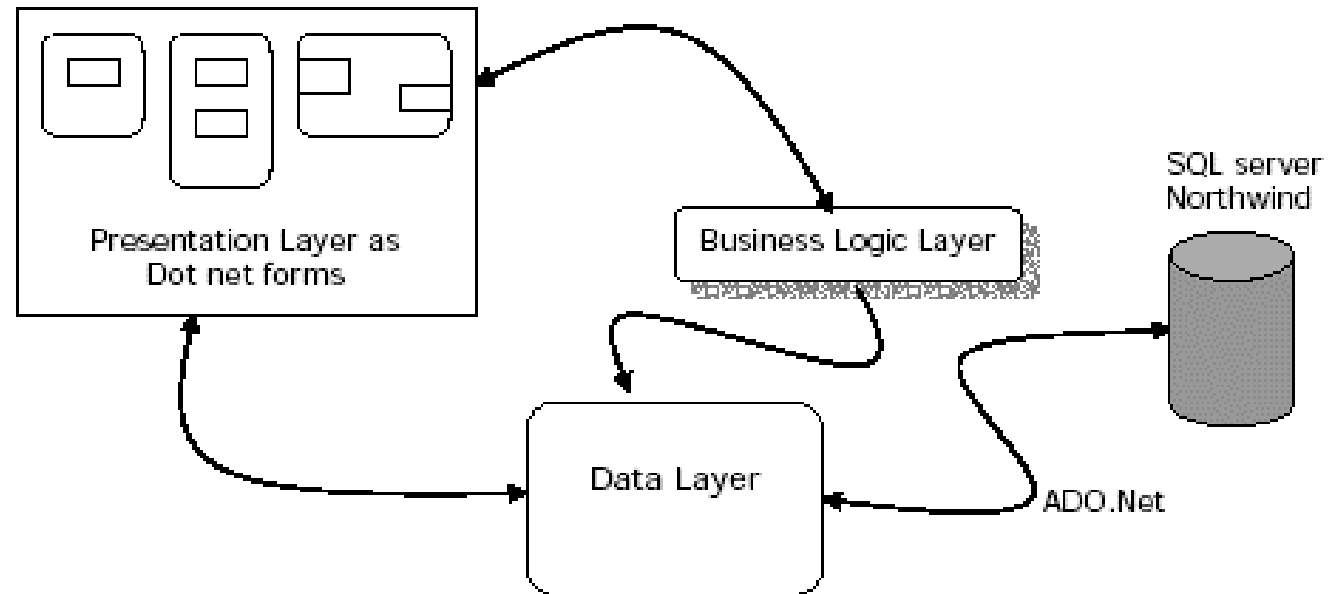
- Case Study: Database Access in .NET
- Interface and Abstraction Implementation in Database
 - ActiveX Data Object .NET (ADO.NET)
 - Entity Framework (EF)

Database Access in .NET



Where to put your data

- Configuration
 - User Configuration
 - Machine / App Config
- Flat Files
 - XML
 - Text Files
- Database
 - NOSQL database
 - SQL Based database



Data Layer in Object Point of View

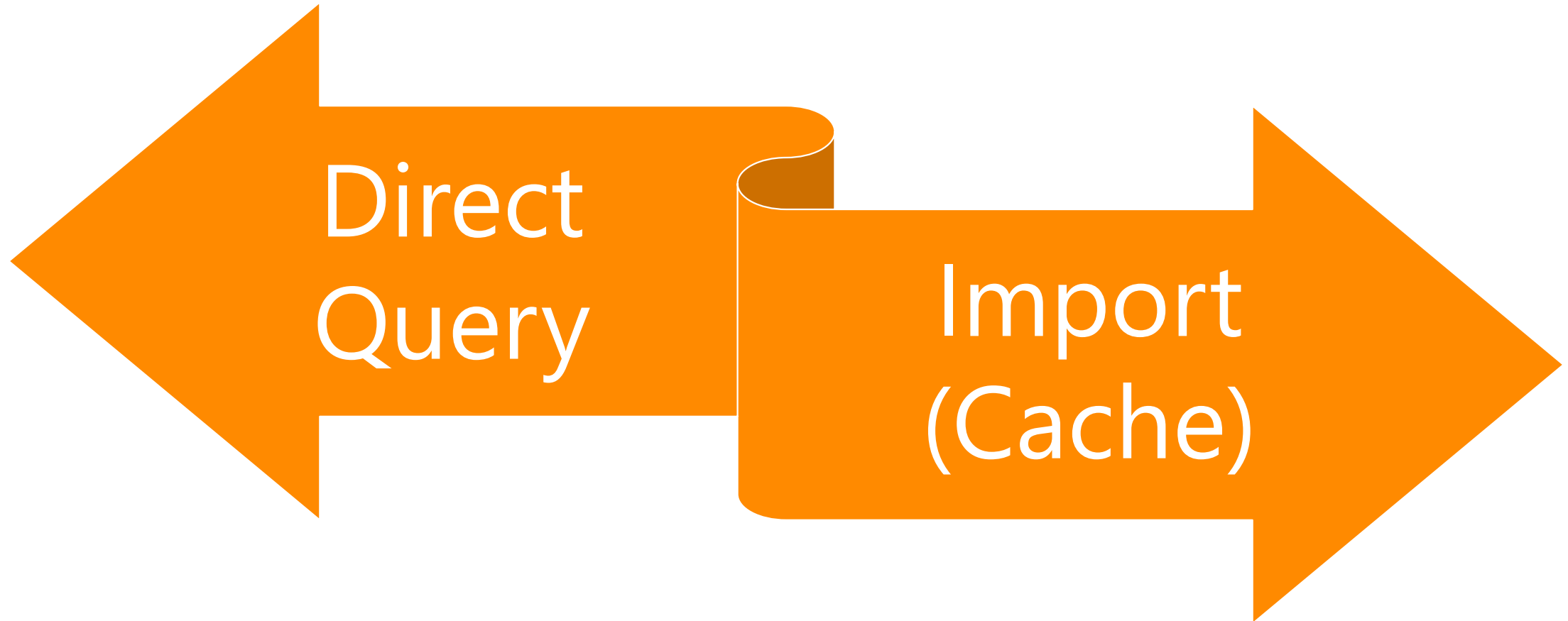
A service that ready to use to expose the data (i.e. Odata.net)

An Application Programming Interface that built-in from the framework (ADO.NET API)

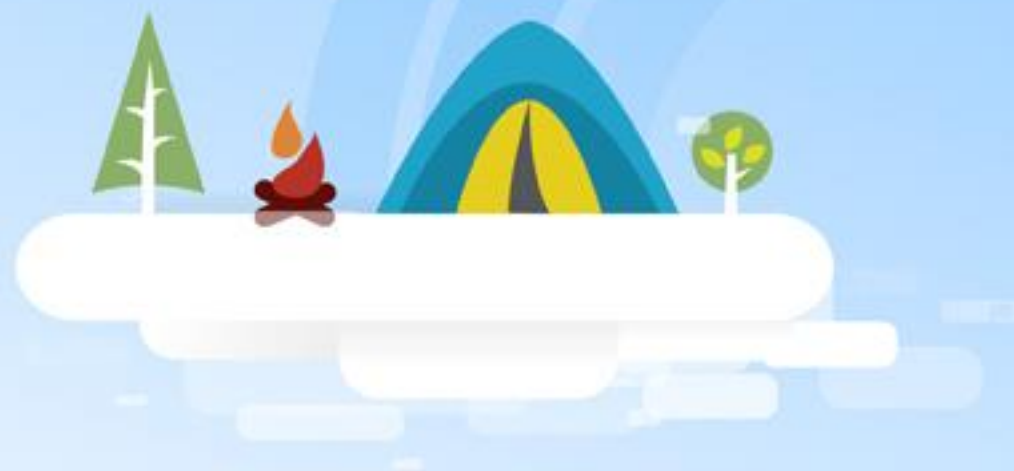
A classes that map the database and the object (i.e. Object Relational Mapping)



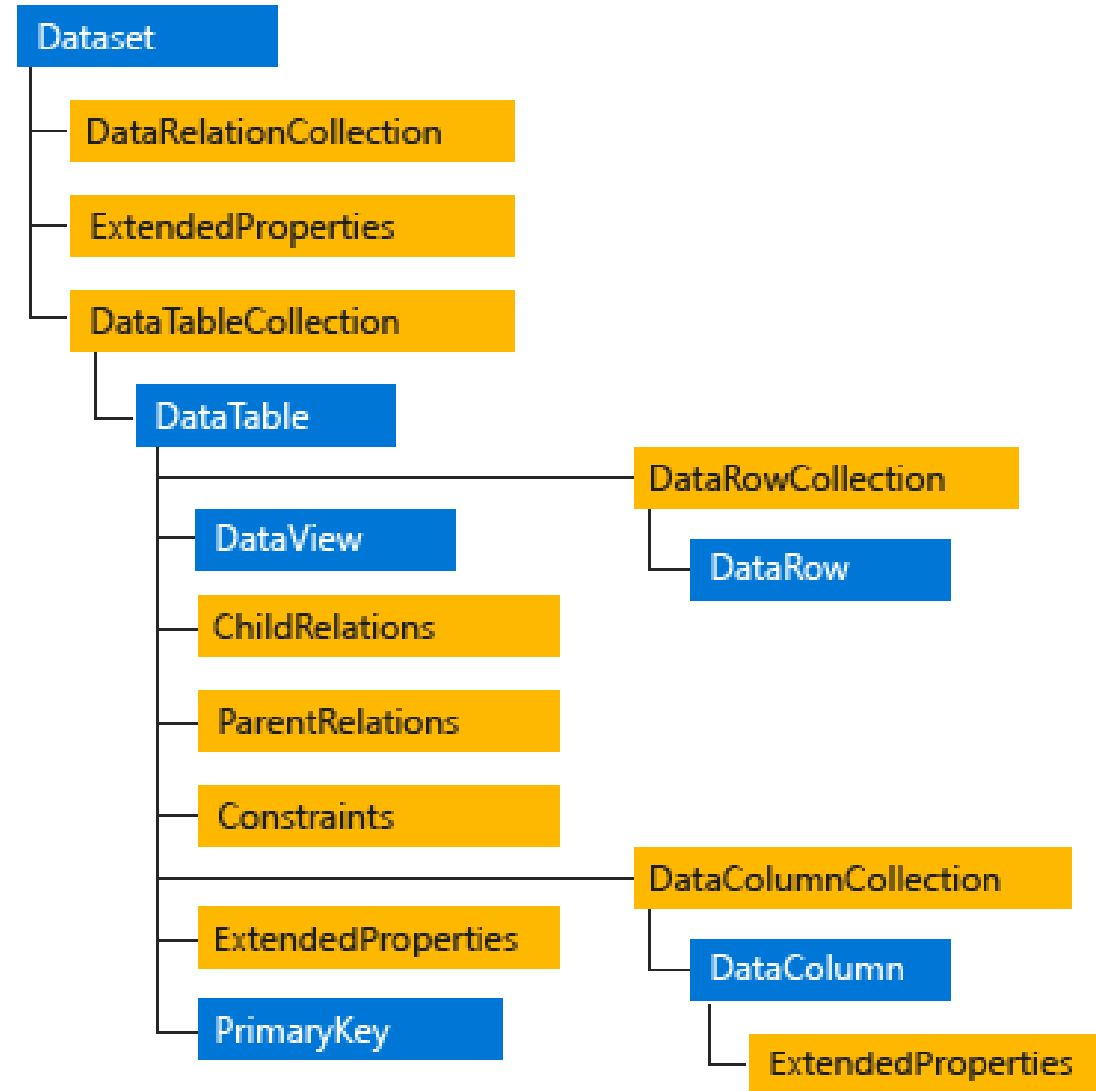
Accessing the data



ADO.NET



ADO.NET Architecture



Dataset Approach

- Cache data locally in your application so that you can manipulate it.
- Remote data between tiers or from an XML Web service.
- Interact with data dynamically such as binding to a Windows Forms control or combining and relating data from multiple sources.
- Perform extensive processing on data without requiring an open connection to the data source, which frees the connection to be used by other clients.

Demo

ADO.NET Dataset

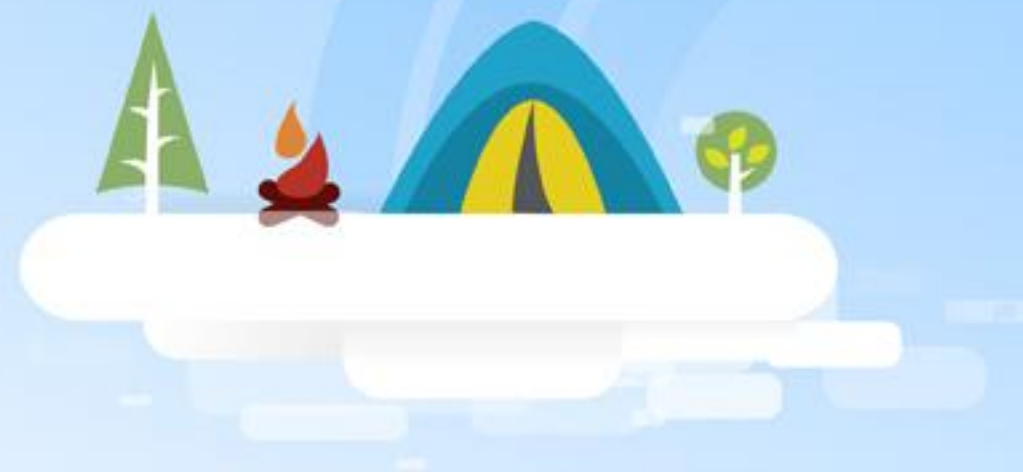
DataReader Approach

- High Performance Read
- Connected Connection
- Less Probability in Data Conflicts
- No Local Copy / Cache

Demo

ADO.NET Datareader

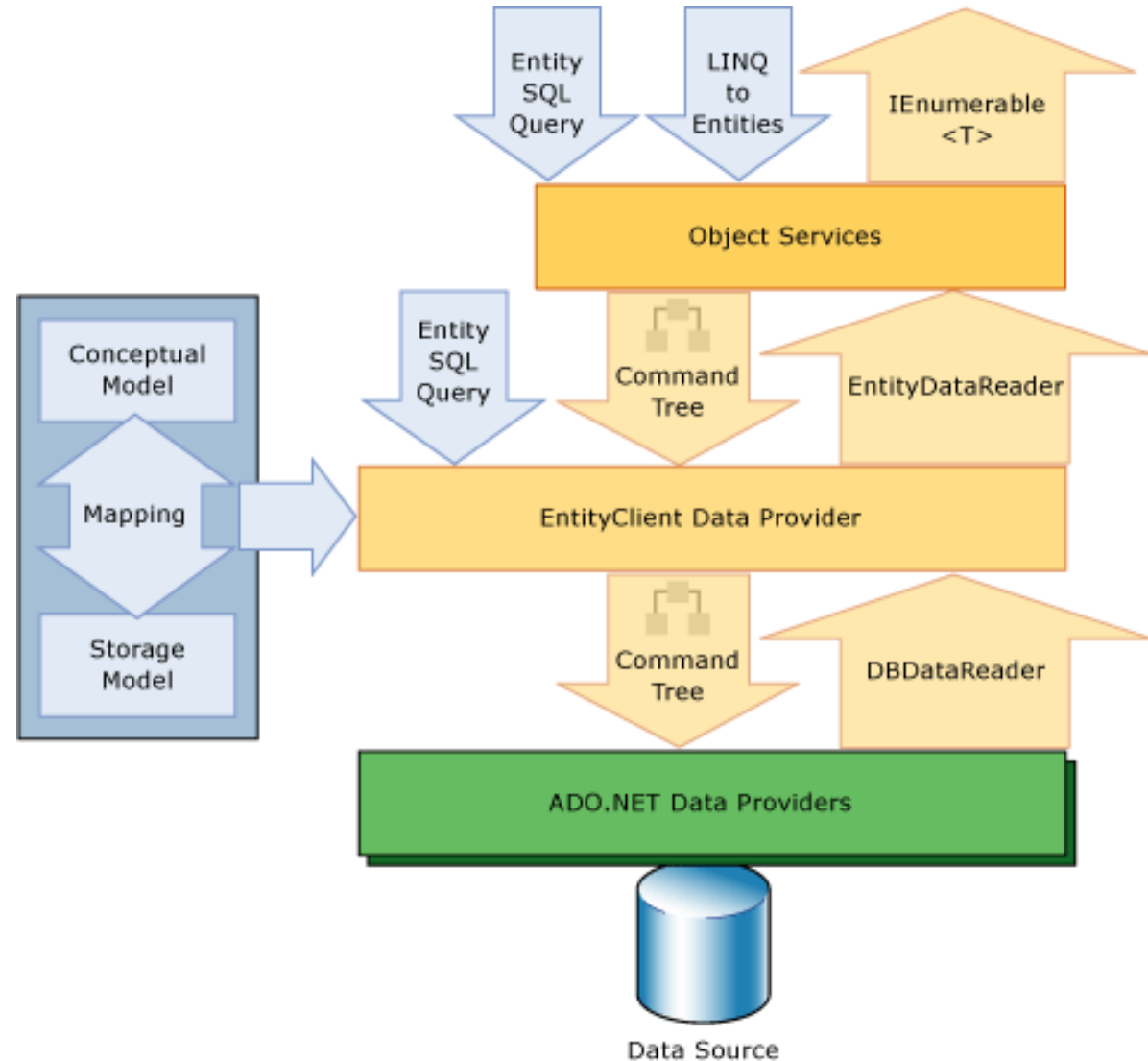
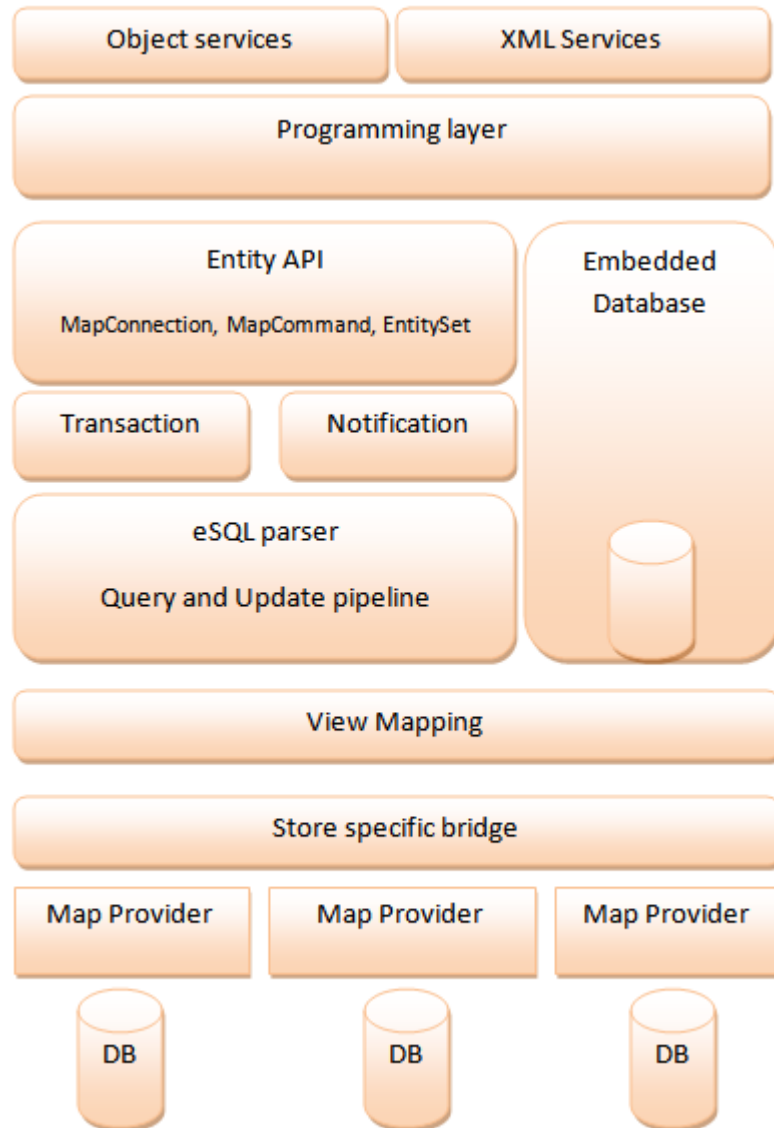
Entity Framework



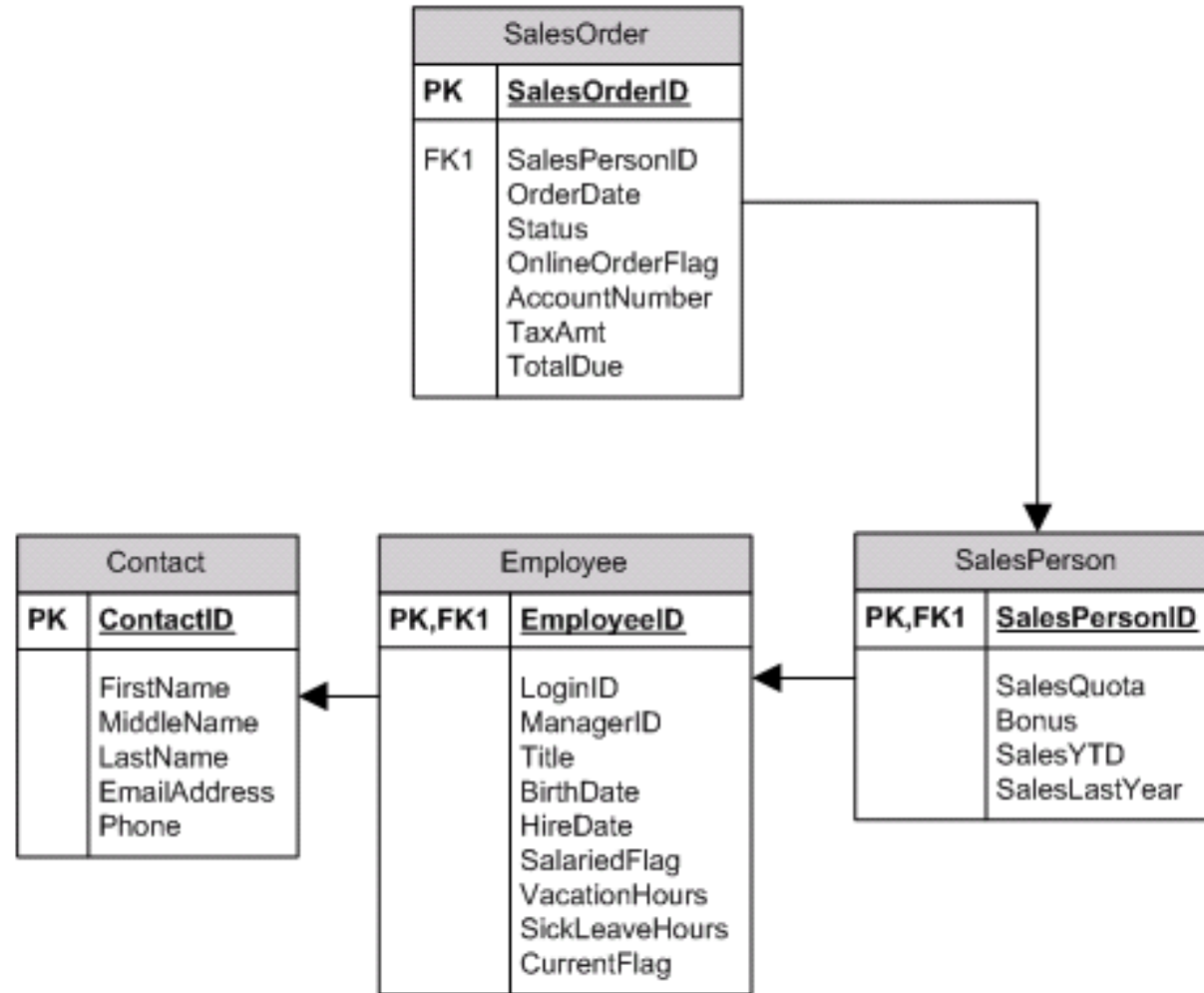
What is Entity Framework

- Object Relational Mapping
- Part of ADO.NET
- Enables developers to work with data in the form of objects rather than data represented in relational database form

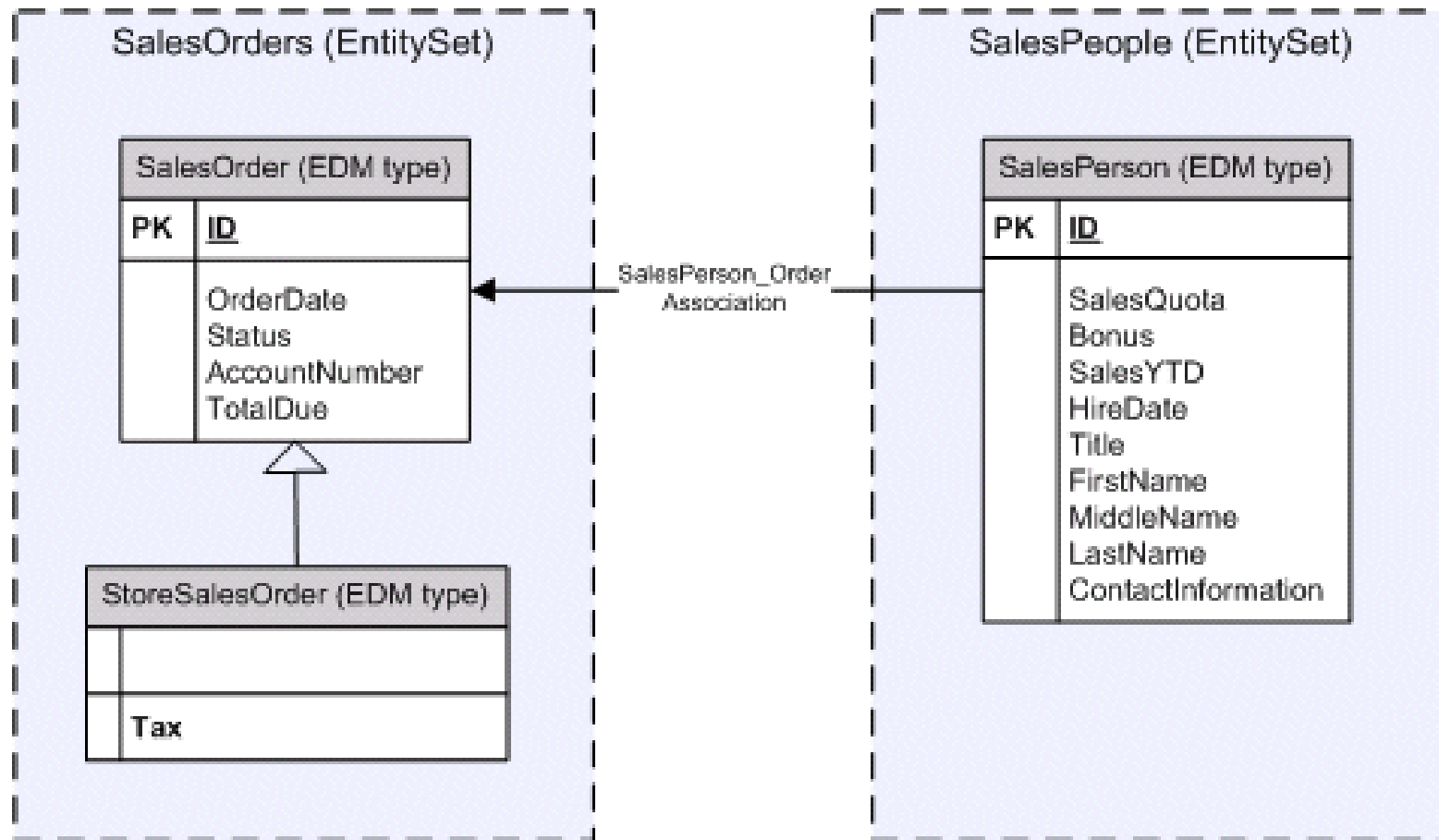
EF Architecture



Object Relational Mapping Concept



Object Relational Mapping Concept

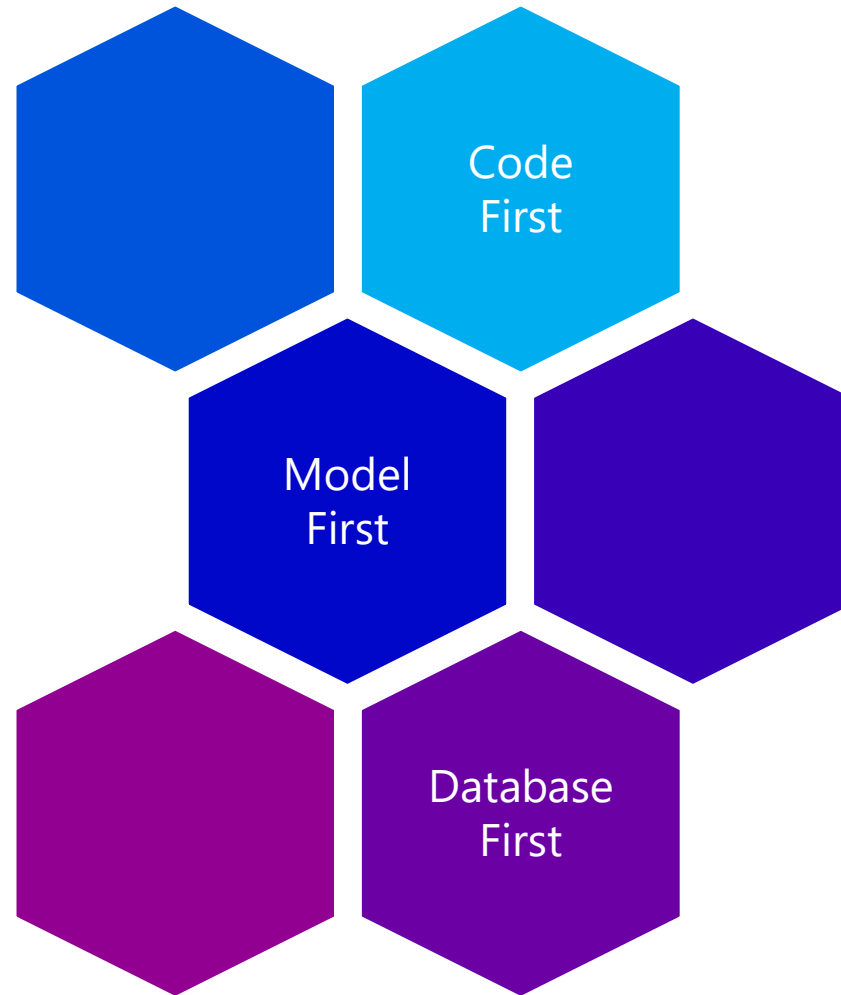


Accessing Data in EF

API Approaches
(C# Conventional
Syntax)

LINQ Query (C#
- SQL Syntax)

Entity Framework Workflow



EF Version

- Entity Framework
- Entity Framework Core

Demo

Entity Framework

Key Points

- What is Data Access Layer ?
- What is Object Relational Mapping?
- Which One, will you choose ORM or API based?