Working with Real Data Using Entity Framework Core 6

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Module overview

Introducing Entity Framework Core 6

Adding EF Core to the application

Using migrations

Adding seed data

Introducing Entity Framework Core 6

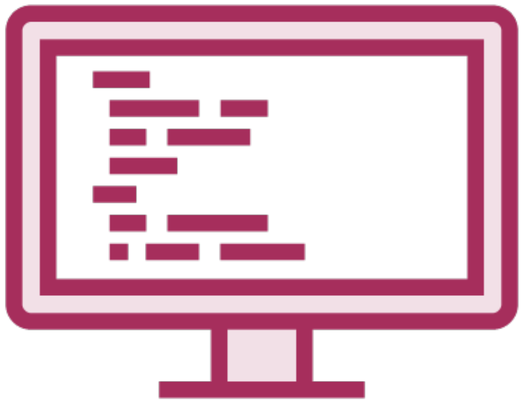
Nearly all web applications
you build will need data from a database.

While we can use low-level ADO.NET combined with SQL statements, we will use Entity Framework Core.

Introducing Entity Framework Core

ORM	**LINQ**	**Lightweight & cross-platform**
Open-source	**SQL Server & other relational and non-relational DB support**	**Code-first**

EF Core



Code

Entity Framework

Database

What EF Core Does for You

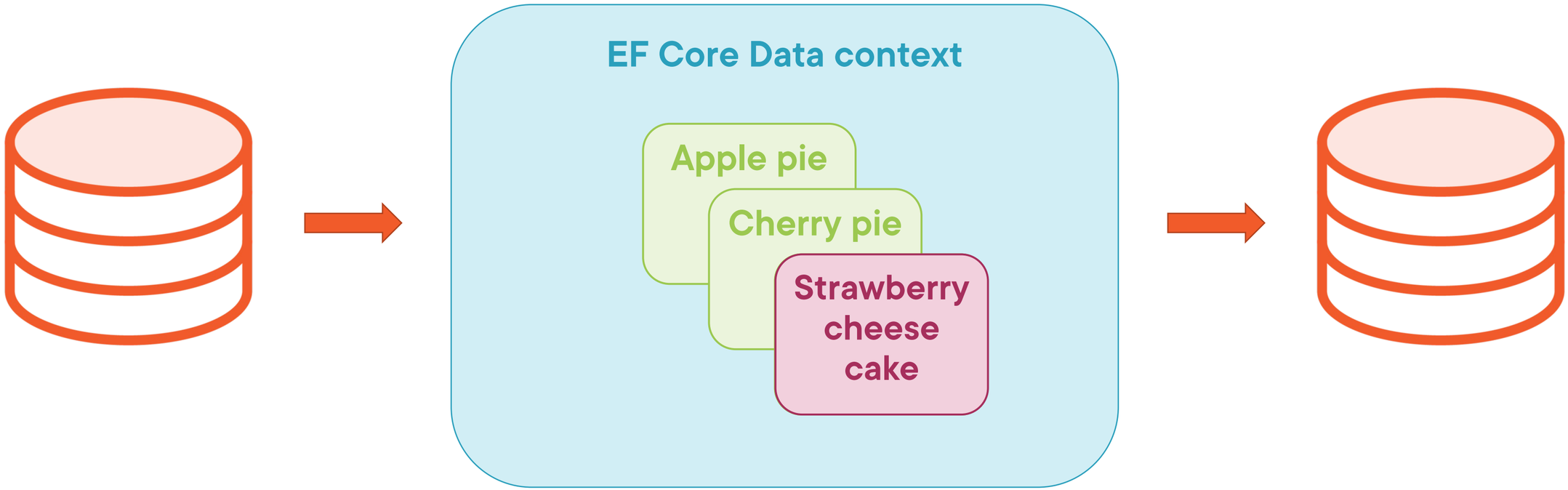
Class

```
public class Pie
{
    public int PieId { get; set; }
    public string? Name { get; set; }
    public string? Description { get; set; }
}
```


Table

Pield	Int (PK)
Name	String
Description	string

The EF Core Change Tracker



Using EF Core

Speed of development

Can work with SQL statements

But... can sometimes be less performant than raw SQL

Adding EF Core to the Application

Adding EF Core to the Application

Packages

Domain classes

Database context

Application configuration

```
Microsoft.EntityFrameworkCore.SqlServer
```

◀ SQL Server package

```
Microsoft.EntityFrameworkCore.Tools
```

◀ Helper package for Package Manager Console

Adding EF Core to the Application

Packages

Domain classes

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Application configuration

Domain Classes

```
public class Pie
{
    public int PieId { get; set; }
    public string Name { get; set; }
    public string? ShortDescription { get; set; }
    public decimal Price { get; set; }
    public int CategoryId { get; set; }
    public Category Category { get; set; }
}
```

Creating the Mapping

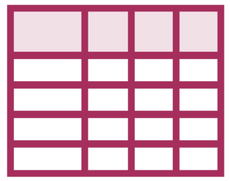
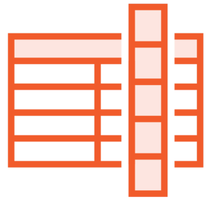


Table name and column name

Pield will become primary key

Categoryld will become foreign key



Column types used in database

Adding EF Core to the Application

Packages

Domain classes

Database context

Application configuration

The Database Context

```
public class BethanysPieShopDbContext : DbContext
{
  public BethanysPieShopDbContext(DbContextOptions<BethanysPieShopDbContext> options)
    : base(options)
  {
  }

  public DbSet<Pie> Pies { get; set; }
}
```

Adding EF Core to the Application

Packages

Domain classes

Database context

Application configuration

```
{
  "ConnectionStrings": {
    "BethanysPieShopDbContextConnection":
      "Server=(localdb)\\mssqllocaldb;
       Database=BethanysPieShop;
       Trusted_Connection=True;
       MultipleActiveResultSets=true"
  }
}
```

Adding the Connection String

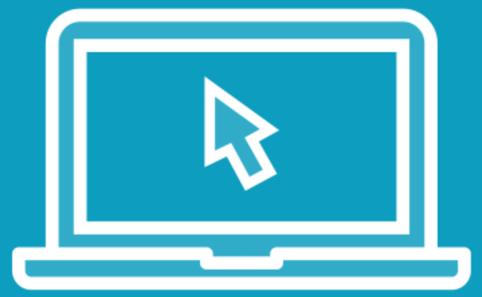
appSettings.json
Read automatically by default

```
builder.Services.AddDbContext<BethanysPieShopDbContext>(
  options => {
    options.UseSqlServer(
      builder.Configuration["ConnectionStrings:BethanysPieShopDbContextConnection"]);
  }
);
```

Registering the Database Context

AddDbContext is an extension method

Demo



Adding the required packages

Creating the DbContext

Changing the application configuration

```
_bethanysPieShopDbContext.Pies.Include(c => c.Category).Where(p => p.IsPieOfTheWeek);
```

Querying for Data Using LINQ

Adding New Items

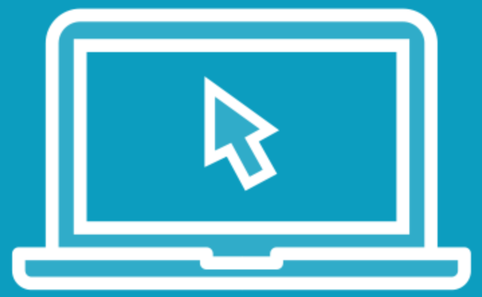
```
foreach (ShoppingCartItem? shoppingCartItem in shoppingCartItems)
{
    var orderDetail = new OrderDetail
    {
        Amount = shoppingCartItem.Amount,
        PieId = shoppingCartItem.Pie?.PieId,
        Price = shoppingCartItem.Pie?.Price
    };

    order.OrderDetails.Add(orderDetail);
}

_bethanysPieShopDbContext.Orders.Add(order);

_bethanysPieShopDbContext.SaveChanges();
```

Demo

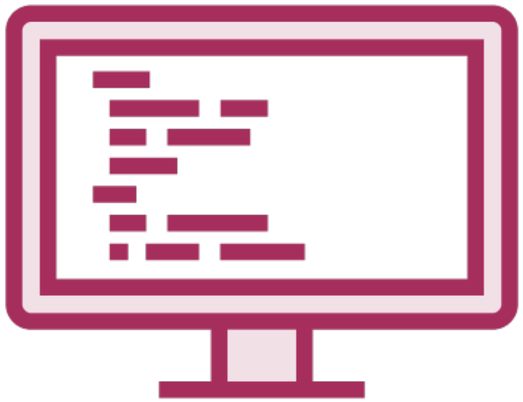


Creating the repository

Using Migrations

Using EF Core Migrations, code can be generated to bring the database in sync with code model.

Creating an Initial Migration



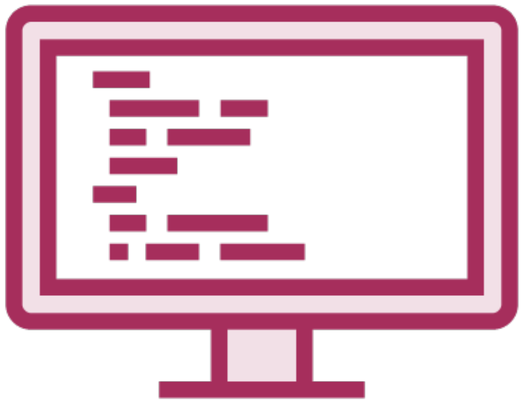
Database migration

Package Manager Console

Commands

```
>add-migration <MigrationName>
```

Creating the Database



Database migration

Create database

Database

Package Manager Console

Commands

```
>update-database
```

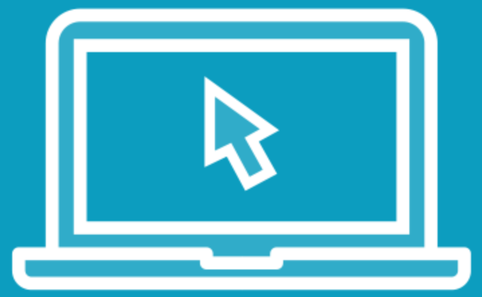
Demo

Creating the initial migration

Creating the database

Adding Seed Data

Demo



Adding seed data

Summary

EF Core is a lightweight ORM

Use LINQ to interact with the database

Migrations are used to bring model and database in sync

Up next:
Navigating through the site