Overview

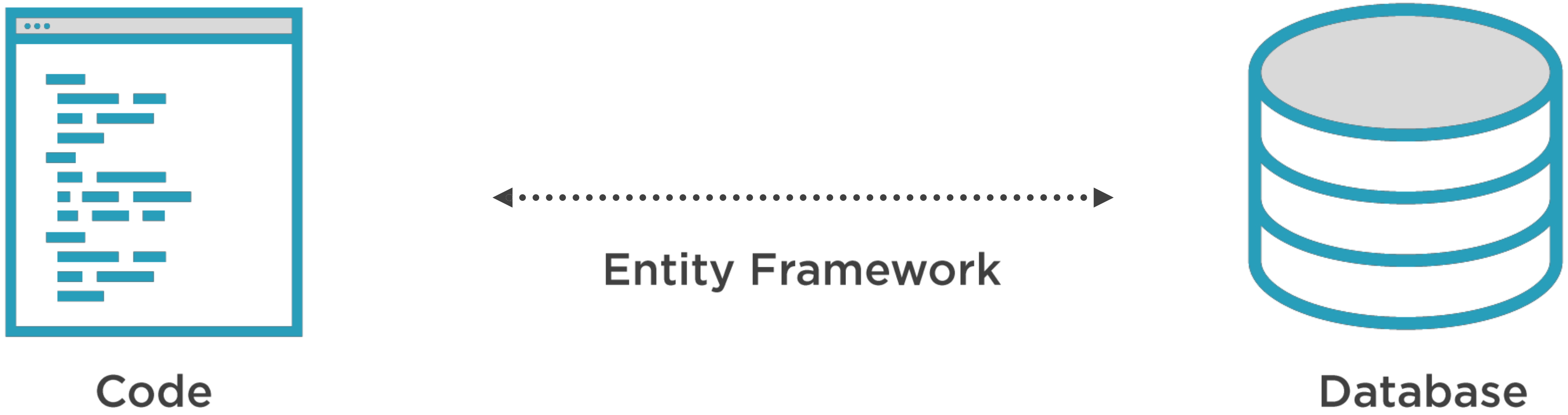
An overview of Entity Framework Core

Adding EF Core to our application

Database initialization and migrations

An overview of Entity Framework Core

Entity Framework



Code

Entity Framework

Database

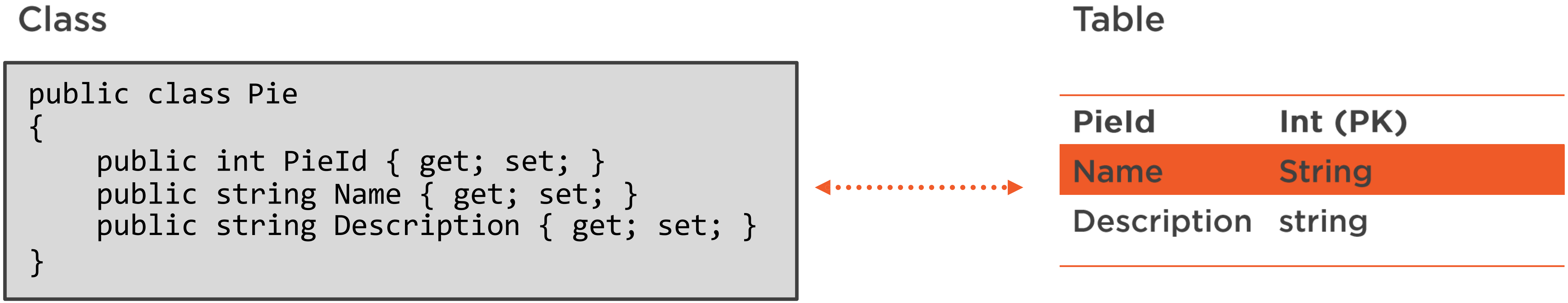
Entity Framework

Code-First
&
Database-First

SQL Server and
other DBs

LINQ-based

What EF Does for You



Class

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

Table

PieId	**Int (PK)**
Name	**String**
Description	**string**

> “Entity Framework (EF) Core is a lightweight and extensible version of the popular Entity Framework data access technology”

EFProject.net

Entity Framework Core (EF Core)

“EF 7”

Lightweight & Cross-platform

Open-source

SQL Server and other, non-relational DB support

Code-First only

Added using package

Adding EF Core to Our Application

Model Classes

```
public class Pie
{
    public int PieId { get; set; }
    public string Name { get; set; }
    public string ShortDescription { get; set; }
    public string LongDescription { get; set; }
    public string AllergyInformation { get; set; }
    public decimal Price { get; set; }
    public string ImageUrl { get; set; }
    ...
    public virtual Category Category { get; set; }
}
```

project.json

```
{
  "dependencies": {
    "Microsoft.NETCore.App": {
      "version": "1.0.1",
      "type": "platform"
    },
    ...
    "Microsoft.AspNetCore.Mvc": "1.0.1",
    "Microsoft.EntityFrameworkCore.SqlServer": "1.0.1",
    "Microsoft.EntityFrameworkCore.Tools": "1.0.0-preview2-final“,
    "Microsoft.Extensions.Configuration.Json": "1.0.0"
}
```

project.json

```
"tools": {
    "Microsoft.AspNetCore.Razor.Tools": "1.0.0-preview2-final",
    "Microsoft.AspNetCore.Server.IISIntegration.Tools": "1.0.0-preview2-final",
    "Microsoft.EntityFrameworkCore.Tools": {
      "version": "1.0.0-preview2-final",
      "imports": [ "portable-net45+win8+dnxcore50",
         "portable-net45+win8" ]
    }
  }
```

The Database Context

```
public class AppDbContext : DbContext
{

    public AppDbContext(DbContextOptions<AppDbContext> options)
      : base(options)
    { }



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

    public DbSet<Category> Categories { get; set; }

}
```

```
{

  "ConnectionStrings": {

    "DefaultConnection":
      "Server=(localdb)\\MSSQLLocalDB;Database=BethanysPieShop;
        Trusted_Connection=True;MultipleActiveResultSets=true"

  }

}
```

The Connection String in appsettings.json

Configuring Our Application

```
private IConfigurationRoot _configurationRoot;

public Startup(IHostingEnvironment hostingEnvironment)
{
    _configurationRoot = new ConfigurationBuilder()
                          .SetBasePath(hostingEnvironment.ContentRootPath)
                          .AddJsonFile("appsettings.json")
                          .Build();
}

public void ConfigureServices(IServiceCollection services)
{

    services.AddDbContext<AppDbContext>(options =>
      options.UseSqlServer(_configurationRoot.GetConnectionString
        ("DefaultConnection")));

}
```

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

Querying for Data

Modifying Data

```
foreach (var shoppingCartItem in shoppingCartItems)
{

    var orderDetail = new OrderDetail()
    {
        Amount =  shoppingCartItem.Amount,
        PieId = shoppingCartItem.Pie.PieId,
        OrderId = order.OrderId,
        Price = shoppingCartItem.Pie.Price
    };
    _appDbContext.OrderDetails.Add(orderDetail);
}

_appDbContext.SaveChanges();
```

Demo

Adding the DbContext

Creating a repository

Configuring the application for EF Core

Database Initialization and Migrations

Database Initialization

```
public void Configure(IApplicationBuilder app,  IHostingEnvironment env,
  ILoggerFactory loggerFactory)
{

    app.UseDeveloperExceptionPage();
    app.UseStatusCodePages();
    app.UseStaticFiles();

    DbInitializer.Seed(app);

}
```

Database Migrations

Model changes

Available via
Package Manager Console

Demo

Loading initial data

Using migrations

Summary

EF Core is the ORM for ASP.NET Core MVC applications

Common functionality already available

- Migrations
- Database updates