Entity Framework Lab 2

Core Entity Framework Tutorial

This tutorial is taken from `https://docs.microsoft.com/en-us/ef/core/get-started/aspnetcore/new-db?tabs=visual-studio` and `https://github.com/aspnet/EntityFramework.Docs/tree/master/samples/core/GetStarted/AspNetCore/EFGetStarted.AspNetCore.NewDb`.

1 Beginning the lab

1. Open Visual Studio 2019. Select `File` ► `New` ► `Project`. From the left menu, select `Installed` ► `Visual C#` ► `.NET Core`. Select `ASP.NET Core Web Application`. Click `Next`. See figure 1.

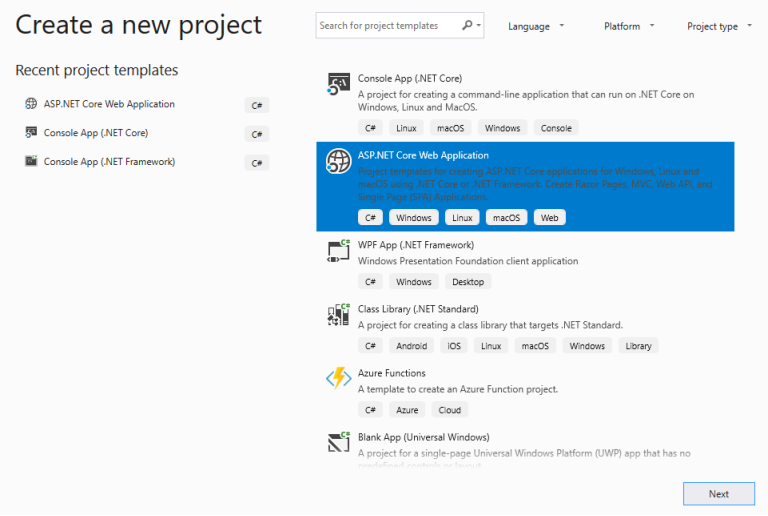

Figure 1: Beginning a new ASP.NET App

2. Enter `EfLab02` for the name and click `Create`. See figure 3.
3. In the New ASP.NET Core Web Application dialog: Make sure that .NET Core and ASP.NET Core 2.2 are selected in the drop-down lists. Select the Web Application (Model-View-Controller) project template Make sure that Authentication is set to No Authentication Click `Create`. See figure **??**.
4. Add a class to the `Models` folder nammed `Class.cs`. Edit the file to match listing 1.

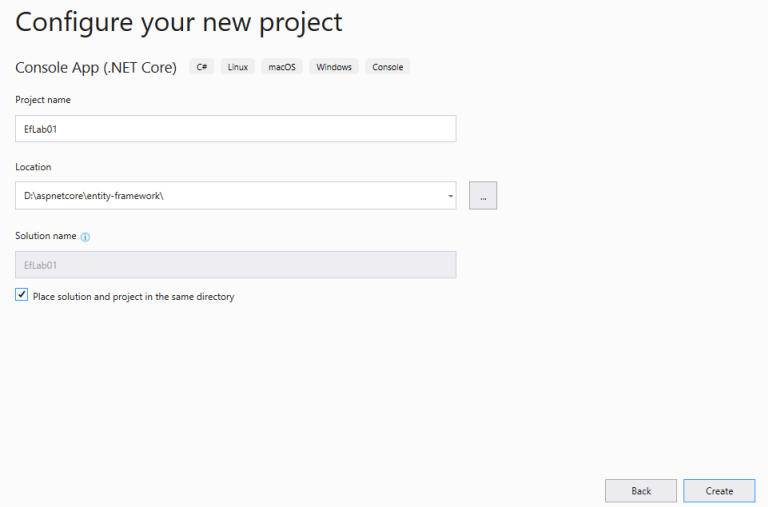

Figure 2: Configure a new Console App, first step

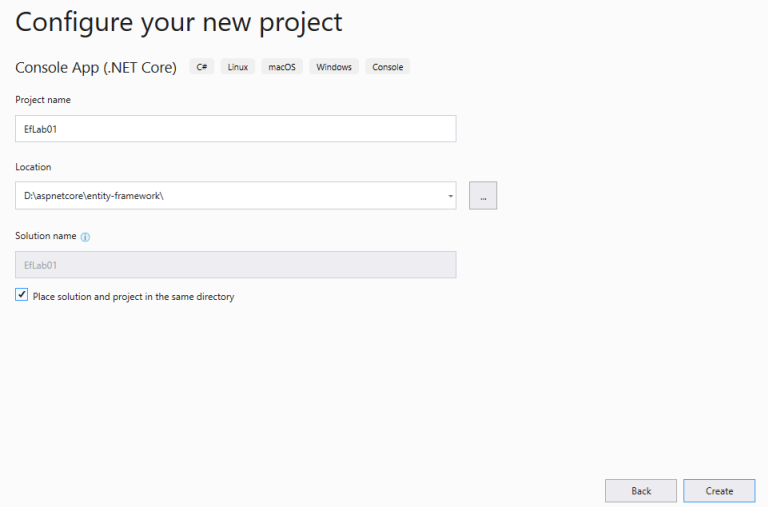

Figure 3: Configure a new Console App, second step

Listing 1: Contents of `Class.cs`

```
using Microsoft.EntityFrameworkCore;
using System.Collections.Generic;

namespace EfLab02.Models
{
    public class BloggingContext : DbContext
    {
        public BloggingContext(DbContextOptions<BloggingContext> options)
            : base(options)
        { }

        public DbSet<Blog> Blogs { get; set; }
        public DbSet<Post> Posts { get; set; }
    }

    public class Blog
    {
        public int BlogId { get; set; }
        public string Url { get; set; }
```

5. Add the following `using` statements to the `Startup.cs` file, shown in listing 2.

Listing 2: Add `usig` statements to `Startup.cs`

```
using Microsoft.EntityFrameworkCore;
using EfLab02.Models;
```

6. Add the following statements to the `Startup.cs` file in the `ConfigureServices()` nethod, shown in listing 6.

```
        public void ConfigureServices(IServiceCollection services)
        {
            services.Configure<CookiePolicyOptions>(options =>
            {
                // This lambda determines whether user consent for non-essential cookies is
                    needed for a given request.
                options.CheckConsentNeeded = context => true;
                options.MinimumSameSitePolicy = SameSiteMode.None;
            });

            services.AddMvc().SetCompatibilityVersion(CompatibilityVersion.Version_2_2);

            var connection =
@"Server=(localdb)\mssqllocaldb;Database=EfLab02;Trusted_Connection=True;ConnectRetryCount=0";
            services.AddDbContext<BloggingContext>
                (options => options.UseSqlServer(connection));
            // BloggingContext requires
            // using EFGetStarted.AspNetCore.NewDb.Models;
            // UseSqlServer requires
            // using Microsoft.EntityFrameworkCore;}
```

7. From the Tools menu, select `Tools` ▶ `NuGet Package Manager` ▶ `Package Manager Console` and run the commands shown in listing 3.

Listing 3: Creating the database

```
Add-Migration InitialCreate
Update-Database
```

This will result in the following output:

```
Each package is licensed to you by its owner. NuGet is not responsible for, nor does it grant any licenses to, third-party packages. Some packages may include dependencies

Package Manager Console Host Version 5.0.0.5917

Type 'get-help NuGet' to see all available NuGet commands.

PM> Add-Migration InitialCreate
Microsoft.EntityFrameworkCore.Infrastructure[10403]
      Entity Framework Core 2.2.2-servicing-10034 initialized 'BloggingContext' using provider 'Microsoft.EntityFrameworkCore.SqlServer' with options: None
To undo this action, use Remove-Migration.
PM> Update-Database
Microsoft.EntityFrameworkCore.Infrastructure[10403]
      Entity Framework Core 2.2.2-servicing-10034 initialized 'BloggingContext' using provider 'Microsoft.EntityFrameworkCore.SqlServer' with options: None
infoverbose: Executed DbCommand (680ms) [Parameters=[], CommandType='Text', CommandTimeout='60']
: Microsoft.EntityFrameworkCore.Database.Command[20101]
      Executed DbCommand (680ms) [Parameters=[], CommandType='Text', CommandTimeout='60']
      CREATE DATABASE [EfLab02];
Microsoft.EntityFrameworkCore.Database.Command[20101]
      Executed DbCommand (90ms) [Parameters=[], CommandType='Text', CommandTimeout='60']
      IF SERVERPROPERTY('EngineEdition') <> 5
      BEGIN
          ALTER DATABASE [EfLab02] SET READ_COMMITTED_SNAPSHOT ON;
      END;
Microsoft.EntityFrameworkCore.Database.Command[20101]
      Executed DbCommand (10ms) [Parameters=[], CommandType='Text', CommandTimeout='30']
      CREATE TABLE [__EFMigrationsHistory] (
          [MigrationId] nvarchar(150) NOT NULL,
          [ProductVersion] nvarchar(32) NOT NULL,
          CONSTRAINT [PK___EFMigrationsHistory] PRIMARY KEY ([MigrationId])
      );
Microsoft.EntityFrameworkCore.Database.Command[20101]
```

```
      Executed DbCommand (10ms) [Parameters=[], CommandType='Text', CommandTimeout='30']
      SELECT OBJECT_ID(N'[__EFMigrationsHistory]');
Microsoft.EntityFrameworkCore.Database.Command[20101]
      Executed DbCommand (5ms) [Parameters=[], CommandType='Text', CommandTimeout='30']
      SELECT [MigrationId], [ProductVersion]
      FROM [__EFMigrationsHistory]
      ORDER BY [MigrationId];
Applying migration '20190509152855_InitialCreate'.
Microsoft.EntityFrameworkCore.Migrations[20402]
      Applying migration '20190509152855_InitialCreate'.
Microsoft.EntityFrameworkCore.Database.Command[20101]
      Executed DbCommand (4ms) [Parameters=[], CommandType='Text', CommandTimeout='30']
      CREATE TABLE [Blogs] (
          [BlogId] int NOT NULL IDENTITY,
          [Url] nvarchar(max) NULL,
          CONSTRAINT [PK_Blogs] PRIMARY KEY ([BlogId])
      );
Microsoft.EntityFrameworkCore.Database.Command[20101]
      Executed DbCommand (2ms) [Parameters=[], CommandType='Text', CommandTimeout='30']
      CREATE TABLE [Posts] (
          [PostId] int NOT NULL IDENTITY,
          [Title] nvarchar(max) NULL,
          [Content] nvarchar(max) NULL,
          [BlogId] int NOT NULL,
          CONSTRAINT [PK_Posts] PRIMARY KEY ([PostId]),
          CONSTRAINT [FK_Posts_Blogs_BlogId] FOREIGN KEY ([BlogId]) REFERENCES [Blogs] ([BlogId]) ON DELETE CASCADE
      );
Microsoft.EntityFrameworkCore.Database.Command[20101]
      Executed DbCommand (1ms) [Parameters=[], CommandType='Text', CommandTimeout='30']
      CREATE INDEX [IX_Posts_BlogId] ON [Posts] ([BlogId]);
Microsoft.EntityFrameworkCore.Database.Command[20101]
      Executed DbCommand (3ms) [Parameters=[], CommandType='Text', CommandTimeout='30']
      INSERT INTO [__EFMigrationsHistory] ([MigrationId], [ProductVersion])
      VALUES (N'20190509152855_InitialCreate', N'2.2.2-servicing-10034');
Done.
PM>
```

8. Right-click on the Controllers folder in Solution Explorer and select `Add` ► `Controller`. See figure 4.

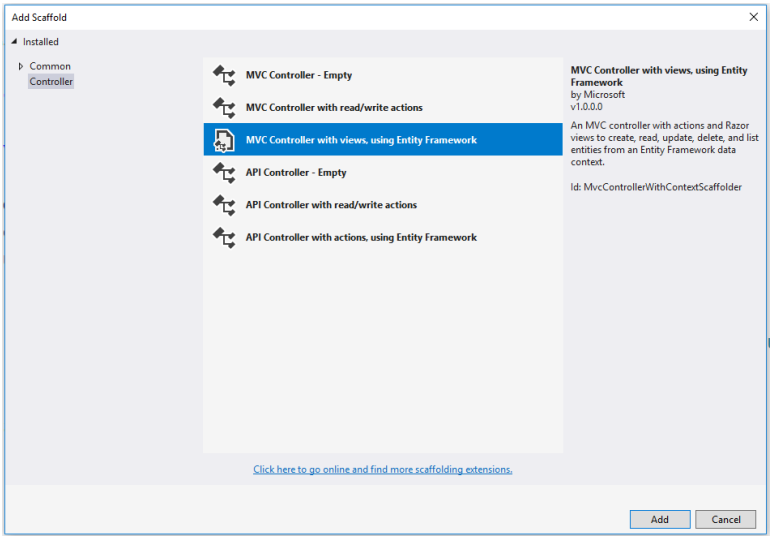

Figure 4: Adding a controller with views.

9. Select *MVC Controller with views, using Entity Framework* and click `Add`. Set Model class to `Blog` and Data context class to `BloggingContext`. Click `Add`. See figure 5.

10. Select `Debug` ► `Start Without Debugging`. Navigate to `PathTo/Blogs`. Use the `Create New` link to create some blog entries. See figure 6.

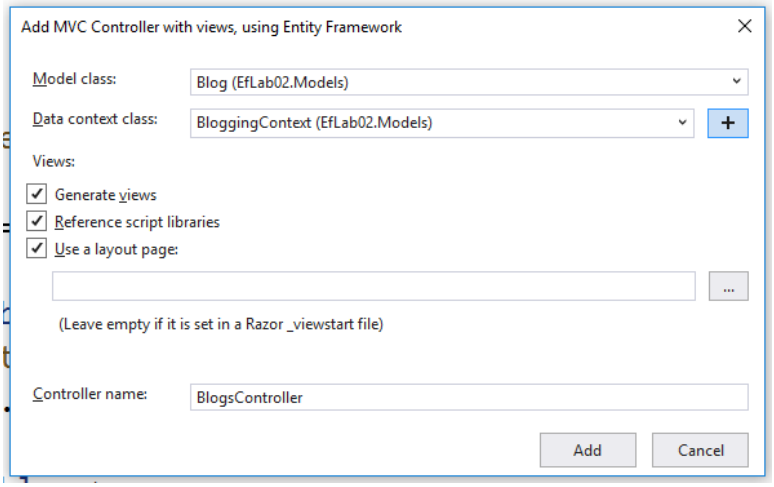

Figure 5:

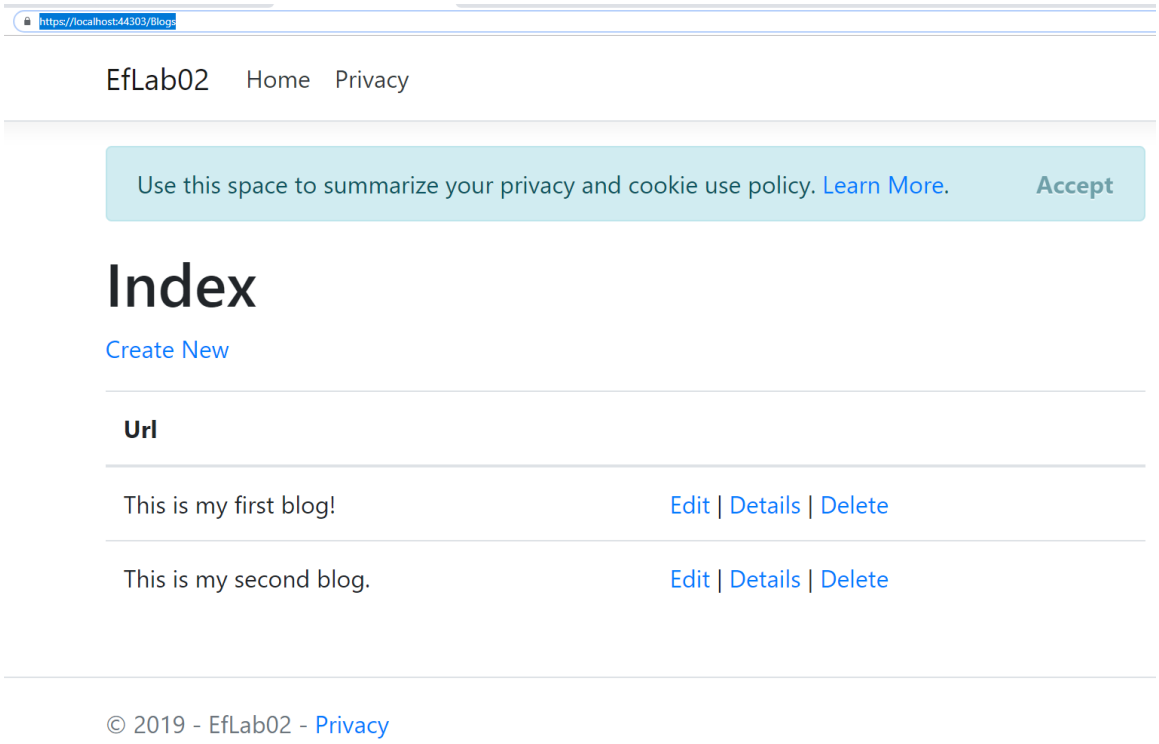

Figure 6: Running appication