

## 创建 ContosoUniversity 项目的步骤

### 一、创建 mvc core 新项目<br/>

### 二、项目名称: ContosoUniversity<br/>

### 三、增加菜单项, 在 Views/Shared/\_Layout.cshtml 的菜单中增加如下代码

```
<li class="nav-item">

    <a class="nav-link text-dark" asp-area="" asp-controller="Home" asp-
action="About">About</a>

</li>

<li class="nav-item">

    <a class="nav-link text-dark" asp-area="" asp-controller="Students" asp-action="Index">学生
</a>

</li>

<li class="nav-item">

    <a class="nav-link text-dark" asp-area="" asp-controller="Courses" asp-action="Index">课程
</a>

</li>

<li class="nav-item">

    <a class="nav-link text-dark" asp-area="" asp-controller="Instructors" asp-action="Index">讲
师</a>

</li>

<li class="nav-item">

    <a class="nav-link text-dark" asp-area="" asp-controller="Departments" asp-action="Index">
部门</a>

</li>
```

### 四、在 Models 文件夹中添加 Student 类

```
public class Student

{
```

```

    public int ID { get; set; }

    public string LastName { get; set; }

    public string FirstMidName { get; set; }

    public DateTime EnrollmentDate { get; set; }


    public ICollection<Enrollment> Enrollments { get; set; }
}

```

## 五、继续添加 **Enrollment** 和 **Course** 类

### 1、Enrollment 类

```

public enum Grade

{

    A, B, C, D, F

}


public class Enrollment

{

    public int EnrollmentID { get; set; }

    public int CourseID { get; set; }

    public int StudentID { get; set; }

    public Grade? Grade { get; set; }


    public Course Course { get; set; }

    public Student Student { get; set; }

}

```

### 2、Course 类

```

public class Course
{
    [DatabaseGenerated(DatabaseGeneratedOption.None)]

    public int CourseID { get; set; }

    public string Title { get; set; }

    public int Credits { get; set; }


    public ICollection<Enrollment> Enrollments { get; set; }
}

```

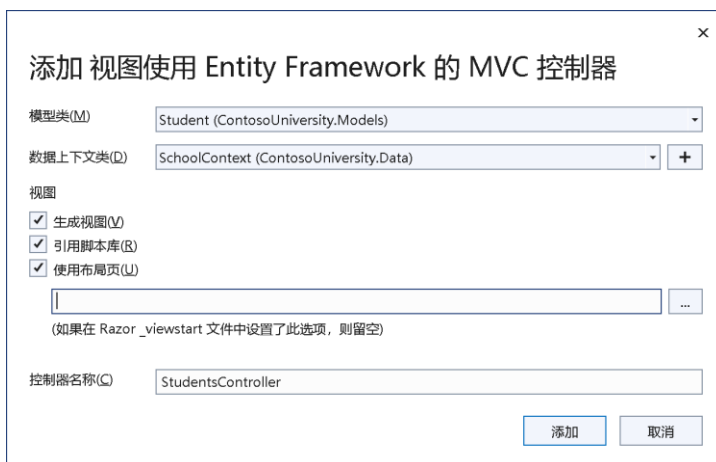
注意：引用 using System.ComponentModel.DataAnnotations.Schema;

六、编译并运行，查看程序是否能正确运行。

七、如果是.net 6.0 的项目（5.0 的项目调过此步骤），需要修改项目文件，方法为：在“解决方案资源管理器”的项目名称上

右键->属性->生成->可为 Null 类型 选项设为禁用

八、添加 **Controller**：在 Controllers 上右键->添加->控制器，按如下方式添加，如果出错误多试几次。



添加 视图使用 Entity Framework 的 MVC 控制器

模型类(M) Student (ContosoUniversity.Models)

数据上下文类(D) SchoolContext (ContosoUniversity.Data) +

视图

☒ 生成视图(V)

☒ 引用脚本库(R)

☒ 使用布局页(L)

| ...

(如果在 Razor\_viewstart 文件中设置了此选项，则留空)

控制器名称(C) StudentsController

添加 取消

九、以此类推，继续添加 Enrollment 和 Course 模型类。

添加 视图使用 Entity Framework 的 MVC 控制器

模型类(M)

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视图

☒ 生成视图(V)

☒ 引用脚本库(B)

☒ 使用布局页(L)

...

(如果在 Razor \_viewstart 文件中设置了此选项, 则留空)

控制器名称(C)

数据上下文类无需修改或增加。

## 十、创建数据库

### 1、add-migration init

### 2、update-database

## 十一、数据自动填充

在 **data** 文件夹下创建 **DbInitializer** 类, 内容为:

```
using ContosoUniversity.Models;
using System;
using System.Linq;

namespace ContosoUniversity.Data
{
    public static class DbInitializer
    {
        public static void Initialize(SchoolContext context)
        {
            context.Database.EnsureCreated();

            // Look for any students.
            if (context.Student.Any())
            {
                return; // DB has been seeded
            }

            var students = new Student[]
            {
                new
                Student {FirstMidName="Carson", LastName="Alexander", EnrollmentDate=DateTime.Parse("2005-09-01")},
            };
```

```

        new
Student {FirstMidName="Meredith", LastName="Alonso", EnrollmentDate=DateTime.Parse("2002-09-
01")},

        new
Student {FirstMidName="Arturo", LastName="Anand", EnrollmentDate=DateTime.Parse("2003-09-
01")},

        new
Student {FirstMidName="Gytis", LastName="Barzdukas", EnrollmentDate=DateTime.Parse("2002-09-
01")},

        new
Student {FirstMidName="Yan", LastName="Li", EnrollmentDate=DateTime.Parse("2002-09-01")},

        new
Student {FirstMidName="Peggy", LastName="Justice", EnrollmentDate=DateTime.Parse("2001-09-
01")},

        new
Student {FirstMidName="Laura", LastName="Norman", EnrollmentDate=DateTime.Parse("2003-09-
01")},

        new
Student {FirstMidName="Nino", LastName="Olivetto", EnrollmentDate=DateTime.Parse("2005-09-
01")}
    };
    foreach (Student s in students)
    {
        context.Student.Add(s);
    }
    context.SaveChanges();

    var courses = new Course[]
    {
        new Course {CourseID=1050, Title="Chemistry", Credits=3},
        new Course {CourseID=4022, Title="Microeconomics", Credits=3},
        new Course {CourseID=4041, Title="Macroeconomics", Credits=3},
        new Course {CourseID=1045, Title="Calculus", Credits=4},
        new Course {CourseID=3141, Title="Trigonometry", Credits=4},
        new Course {CourseID=2021, Title="Composition", Credits=3},
        new Course {CourseID=2042, Title="Literature", Credits=4}
    };
    foreach (Course c in courses)
    {
        context.Course.Add(c);
    }
    context.SaveChanges();

    var enrollments = new Enrollment[]
    {
        new Enrollment {StudentID=1, CourseID=1050, Grade=Grade.A},
        new Enrollment {StudentID=1, CourseID=4022, Grade=Grade.C},
        new Enrollment {StudentID=1, CourseID=4041, Grade=Grade.B},
        new Enrollment {StudentID=2, CourseID=1045, Grade=Grade.B},
        new Enrollment {StudentID=2, CourseID=3141, Grade=Grade.F},
        new Enrollment {StudentID=2, CourseID=2021, Grade=Grade.F},
        new Enrollment {StudentID=3, CourseID=1050},
    }

```

```

        new Enrollment {StudentID=4, CourseID=1050},
        new Enrollment {StudentID=4, CourseID=4022, Grade=Grade.F},
        new Enrollment {StudentID=5, CourseID=4041, Grade=Grade.C},
        new Enrollment {StudentID=6, CourseID=1045},
        new Enrollment {StudentID=7, CourseID=3141, Grade=Grade.A},
    };
    foreach (Enrollment e in enrollments)
    {
        context.Enrollment.Add(e);
    }
    context.SaveChanges();
}
}
}

```

十二、打开 Program.cs 文件，添加如下代码

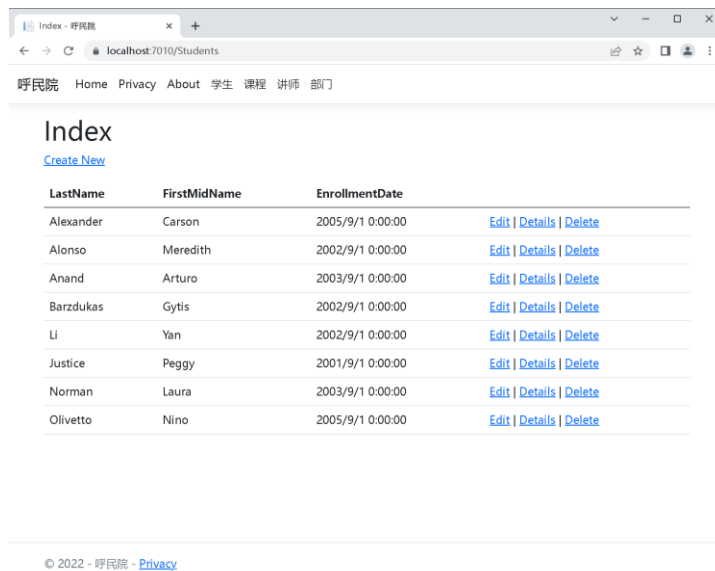
```

using (var scope = app.Services.CreateScope())
{
    var services = scope.ServiceProvider;

    var context = services.GetRequiredService<SchoolContext>();
    context.Database.EnsureCreated();
    DbInitializer.Initialize(context);
}

```

执行程序，查看学生和课程内容是否填充正确，正确显示如下图所示内容：



呼民院 Home Privacy About 学生 课程 讲师 部门

## Index

[Create New](#)

LastName	FirstMidName	EnrollmentDate	
Alexander	Carson	2005/9/1 0:00:00	<a href="#">Edit</a>   <a href="#">Details</a>   <a href="#">Delete</a>
Alonso	Meredith	2002/9/1 0:00:00	<a href="#">Edit</a>   <a href="#">Details</a>   <a href="#">Delete</a>
Anand	Arturo	2003/9/1 0:00:00	<a href="#">Edit</a>   <a href="#">Details</a>   <a href="#">Delete</a>
Barzdukas	Gytis	2002/9/1 0:00:00	<a href="#">Edit</a>   <a href="#">Details</a>   <a href="#">Delete</a>
Li	Yan	2002/9/1 0:00:00	<a href="#">Edit</a>   <a href="#">Details</a>   <a href="#">Delete</a>
Justice	Peggy	2001/9/1 0:00:00	<a href="#">Edit</a>   <a href="#">Details</a>   <a href="#">Delete</a>
Norman	Laura	2003/9/1 0:00:00	<a href="#">Edit</a>   <a href="#">Details</a>   <a href="#">Delete</a>
Olivetto	Nino	2005/9/1 0:00:00	<a href="#">Edit</a>   <a href="#">Details</a>   <a href="#">Delete</a>

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附件：

## SQLServer 安装方法:

打开 vs 2022 或 2019, 选择菜单的“工具”->获取工具和功能, 之后如下图所示步骤安装即可。

