

Lab: ASP.NET Overview

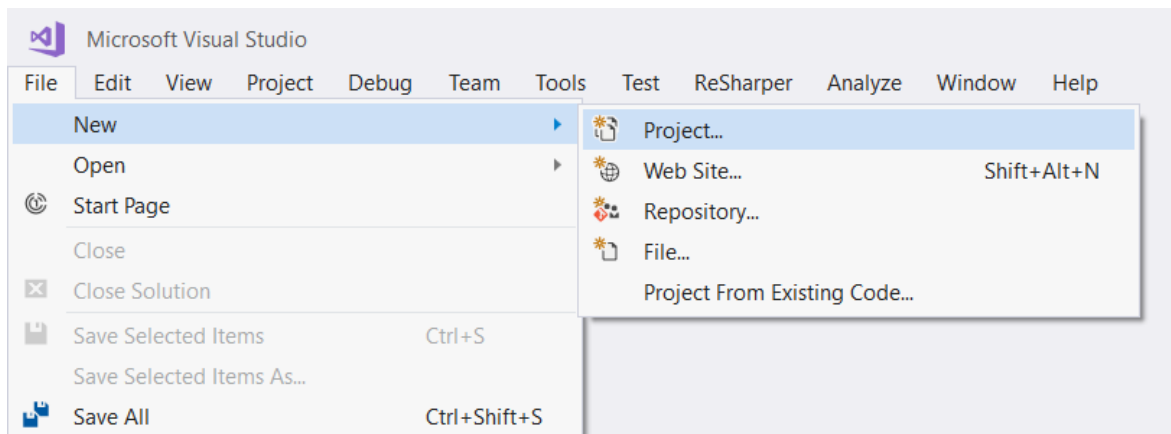
Problems for exercises and homework for the "Software Technologies Back End" course from the official "Applied Programmer" curriculum.

1. About Page

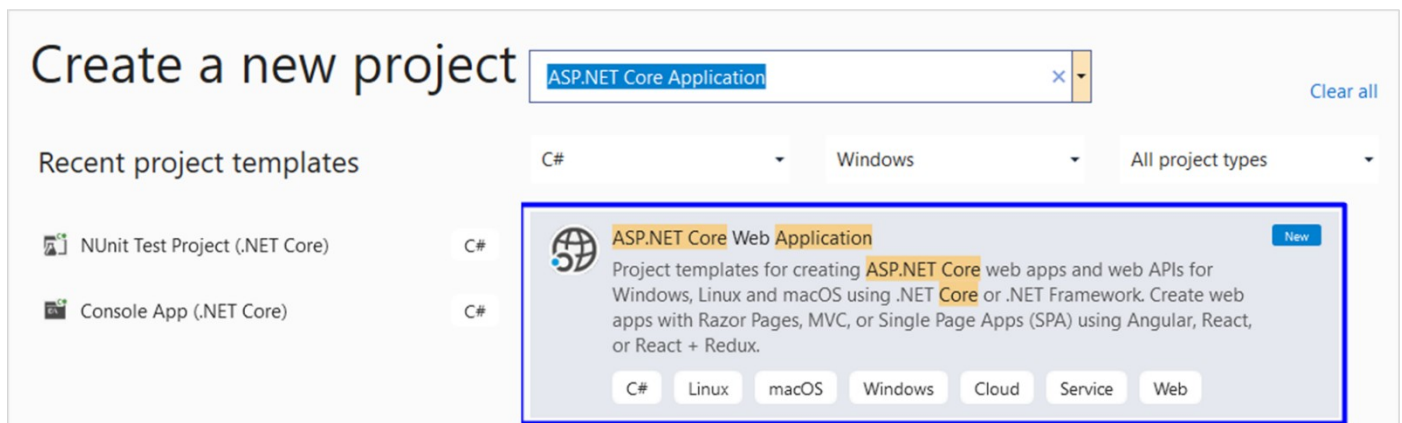
Create an MVC application with **About page**.

Create New Project

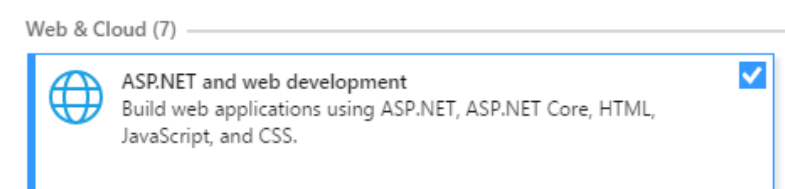
Let's create a new project. Open Visual Studio and click on **[File] -> [New] -> [Project]**:



Next, search for **ASP.NET Core Application** and choose the one shown below:



If you don't have it in the selection, click **[Open Visual Studio Installer]** and install the "ASP.NET and web development" component:





Next, choose the **MVC** template. After that, make sure to change **authentication type** to "No authentication":


Create a new ASP.NET Core web application


.NET Core

ASP.NET Core 3.1

 **Empty**
An empty project template for creating an ASP.NET Core application. This template does not have any content in it.

 **API**
A project template for creating an ASP.NET Core application with an example Controller for a RESTful HTTP service. This template can also be used for ASP.NET Core MVC Views and Controllers.

 **Web Application**
A project template for creating an ASP.NET Core application with example ASP.NET Razor Pages content.

 **Web Application (Model-View-Controller)**
A project template for creating an ASP.NET Core application with example ASP.NET Core MVC Views and Controllers. This template can also be used for RESTful HTTP services.

Authentication
No Authentication
[Change](#)

Advanced
☒ Configure for HTTPS
☐ Enable Docker Support
(Requires [Docker Desktop](#))

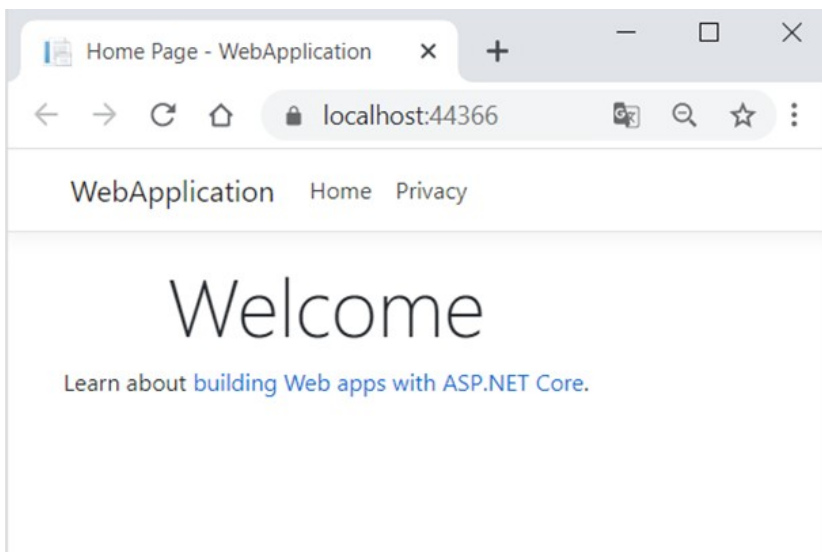
Linux

☐ Enable Razor runtime compilation

At this point, we should have the project created and in front of us.

Run the Project

Let's run it with **[Ctrl+F5]** and see what we have:



Update Layout View

Now it's time to go into the "**Views/Shared/_Layout.cshtml**" file and **edit** it a bit. For starters, let's **update the header link**, which usually says "**WebApplication**" to something nicer:

```
<body>
  <header>
    <nav class="navbar navbar-expand-sm navbar-toggleable-sm
      navbar-light bg-white border-bottom box-shadow mb-3">
      <div class="container">
        <a class="navbar-brand" asp-area=""
          asp-controller="Home" asp-action="Index">WebApplication</a>
```



```
<body>
  <header>
    <nav class="navbar navbar-expand-sm navbar-toggleable-sm
      navbar-light bg-white border-bottom box-shadow mb-3">
      <div class="container">
        <a class="navbar-brand" asp-area=""
          asp-controller="Home" asp-action="Index">My App</a>
```

Add an Action

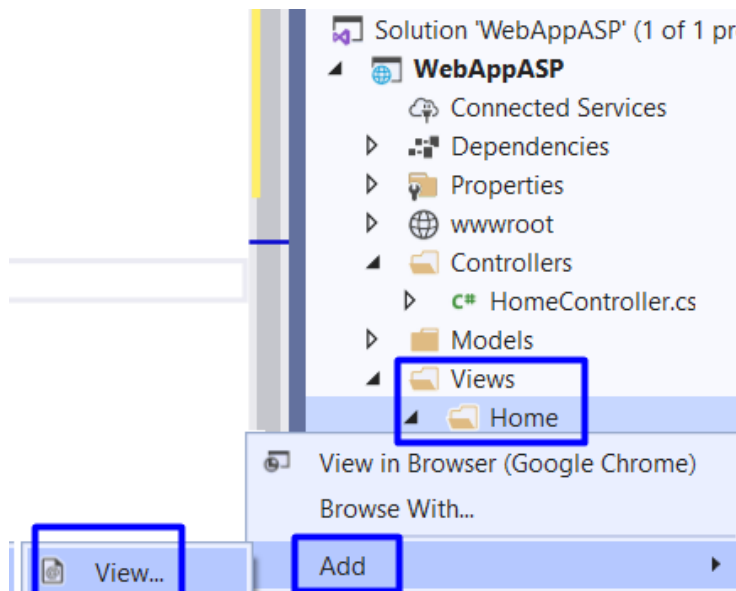
Let's go to **Controllers** -> **HomeController.cs** and add a new **About** action the following way:

```
public ActionResult About()
{
    ViewBag.Message = "Your application description page.";
    return View();
}
```

Add a View

Now we need an **About** view for our controller, which will be our **About.cshtml** file.

Let's go to **Views** -> **Home** -> **Add** -> **View**:



Choose **[Razor View]** and name it **"About"**.



Add Razor View ×

View name:

Template:

Model class:

Options:

☐ Create as a partial view

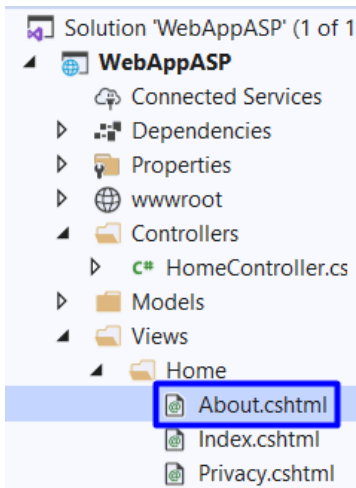
☐ Reference script libraries

☒ Use a layout page:

...

(Leave empty if it is set in a Razor _viewstart file)

Our **About.cshtml** file is now created.



Modify the view the following way:

```
@{
    ViewBag.Title = "About";
}
<h2>@ViewBag.Title</h2>
<h3>@ViewBag.Message</h3>
<p>Use this area to provide additional information.</p>
```

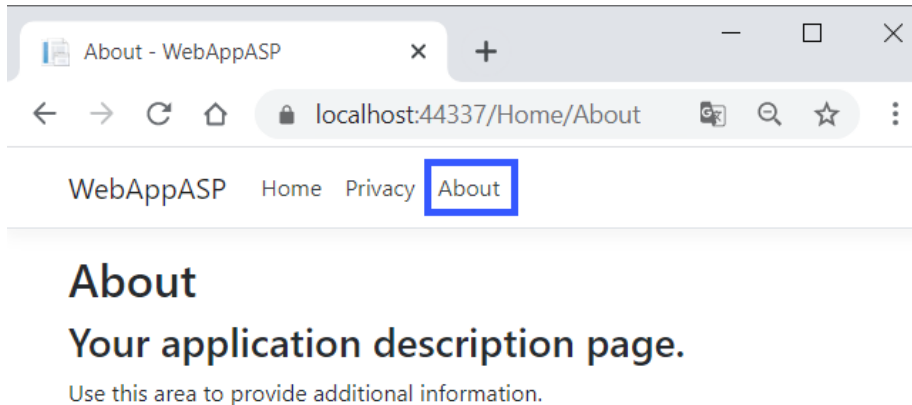
Change the Page Layout

Go to **Views** -> **Shared** -> **_Layout.cshtml** and add a new **** tag in the navigation as shown below:

```
<div class="navbar-collapse collapse d-sm-inline-flex flex-sm-row-reverse">
  <ul class="navbar-nav flex-grow-1">
    <li class="nav-item">
      <a class="nav-link text-dark" asp-area="" asp-controller="Home" asp-action="Index">Home</a>
    </li>
    <li class="nav-item">
      <a class="nav-link text-dark" asp-area="" asp-controller="Home" asp-action="Privacy">Privacy</a>
    </li>
    <li class="nav-item">
      <a class="nav-link text-dark" asp-area="" asp-controller="Home" asp-action="About">About</a>
    </li>
```

Run the Project

Press **[Ctrl+F5]**. Let's see what we've got:



2. Print the Numbers 1...50

Create an MVC application, which **prints** the numbers from **1** to **50** inside a view.

Add an Action

Let's go to **Controllers** -> **HomeController.cs** again and add a new **Numbers** action like this:

```
public ActionResult Numbers()  
{  
    return View();  
}
```

Add a View

Now we need a **Numbers** view for our controller, which will be our **Numbers.cshtml** file.

Let's go to **Views** -> **Home** -> **Add** -> **View** and create a **Razor View** with name "**Numbers**" like we already did with the About view.

Add Razor View

View name:

Template:

Model class:

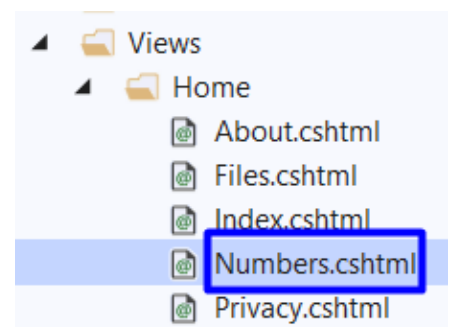
Options:

☐ Create as a partial view

☐ Reference script libraries

☒ Use a layout page:

(Leave empty if it is set in a Razor _viewstart file)



Modify the view the following way:

```
@{ ViewBag.Title = "Nums 1 ... 50"; }  
<h2>@ViewBag.Title</h2>  
<ul>  
    @for (int i = 1; i <= 50; i++)  
    {  
        <li>@i</li>  
    }  
</ul>
```

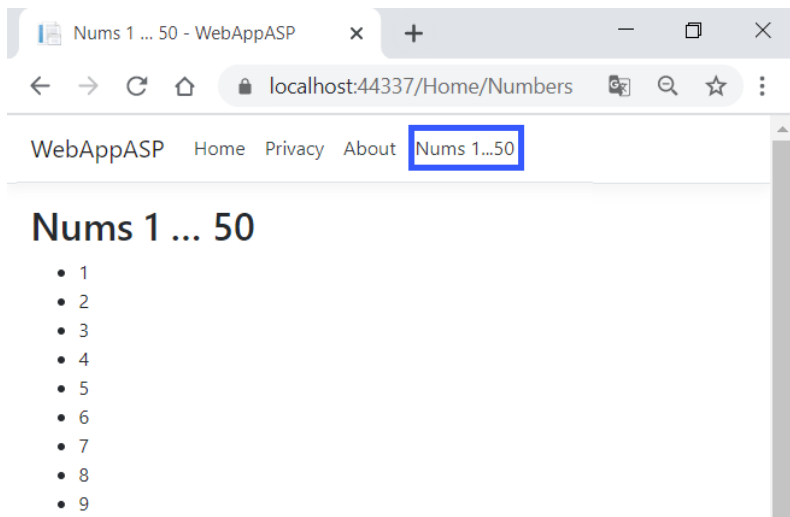
Change the Page Layout

Go to **Views** -> **Shared** -> **_Layout.cshtml** and add a new **** tag in the navigation as shown below:

```
<div class="navbar-collapse collapse d-sm-inline-flex flex-sm-row-reverse">  
    <ul class="navbar-nav flex-grow-1">  
        <li class="nav-item">  
            <a class="nav-link text-dark" asp-area="" asp-controller="Home" asp-action="Index">Home</a>  
        </li>  
        <li class="nav-item">  
            <a class="nav-link text-dark" asp-area="" asp-controller="Home" asp-action="Privacy">Privacy</a>  
        </li>  
        <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="Home" asp-action="Numbers">Nums 1...50</a>  
        </li>  
    </ul>  
</div>
```

Run the Project

Press **[Ctrl+F5]**. Let's see what we've got:



3. Print the Numbers 1...N

Create an MVC application, which **prints** the numbers from **1** to **N** inside a view. We will modify the previous task.

Modify the Action

Let's go to **Controllers** -> **HomeController.cs** and modify the **Numbers** action from the previous task like this:

```
public ActionResult Numbers(int count = 5)
{
    ViewBag.Count = count;
    return View();
}
```

Modify the View

Modify the **Numbers** view the following way:

```
@{ ViewBag.Title =
    "Nums 1 ... " + ViewBag.Count; }
<h2>@ViewBag.Title</h2>
<ul>
    @for (int i = 1; i <= ViewBag.Count; i++)
    {
        <li>@i</li>
    }
</ul>
@using (Html.BeginForm())
{
    @Html.TextBox("count");
    <input type="submit" />
}
```

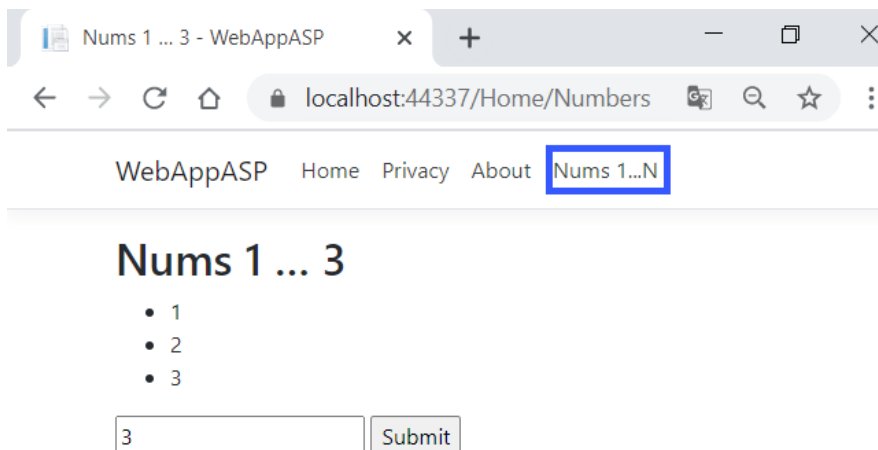
Change the Page Layout

Go to **Views -> Shared -> _Layout.cshtml** and change the name of the **<a>** tag so that it corresponds to our current task:

```
<li class="nav-item">
    <a class="nav-link text-dark" asp-area="" asp-controller="Home"
        asp-action="Numbers">Nums 1...N</a>
</li>
```

Run the Project

Press **[Ctrl+F5]**. Let's see what we've got:



5. List Files

Create an action **Files** to show the folders and files in **C:**.

Add an Action

Let's go to **Controllers** -> **HomeController.cs** again and add a new **Files** action like this:

```
public ActionResult Files()
{
    var path = @"C:\";
    var files = Directory
        .GetDirectories(path)
        .ToList();
    files.AddRange(
        Directory.GetFiles(path));
    return View(files);
}
```

Add a View

Create a view with name "Files" and modify **Files.cshtml** file like this:

```
@{ ViewBag.Title = "Files"; }
<h2>Listing files in C:\</h2>
@model List<string>
@foreach (var file in Model)
{
    <div> @file </div>
}
```

Change the Page Layout

Go to **Views** -> **Shared** -> **_Layout.cshtml** and add a new **** tag in the navigation.

```
<li class="nav-item">
    <a class="nav-link text-dark" asp-area=""
        asp-controller="Home" asp-action="Files">List Files</a>
</li>
```

Run the Project

Press **[Ctrl+F5]**. The result should be something like this:

