Keeping up with the Changes

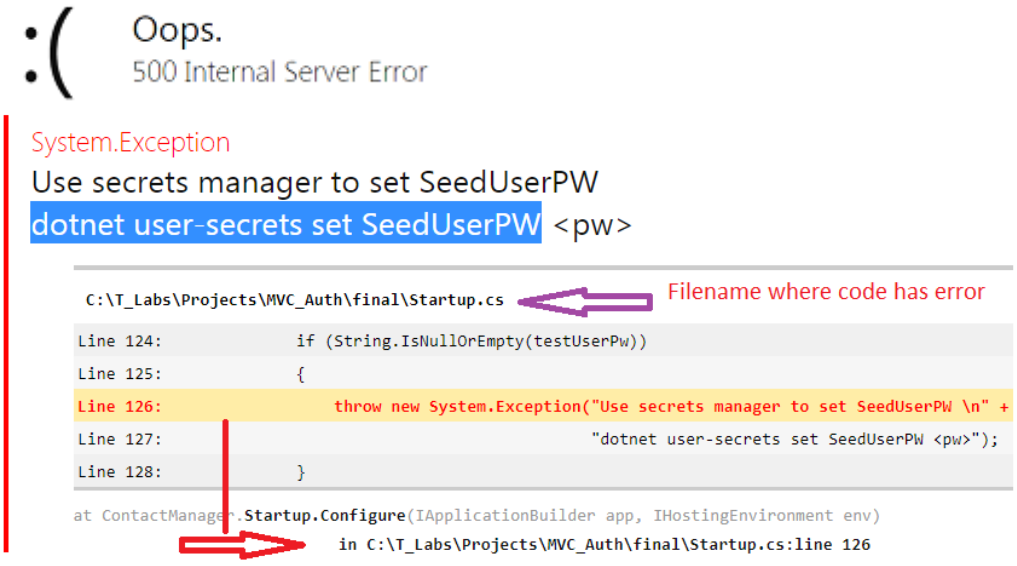
Connection Strings: LocalDB connection string names changed: Note the Data Source name and .mdf in database names

1. MvcMovie v.5 – 2013 XML format
   a. Visual Studio Publishing – Azure SDK plugin removed from UI –
   b. 2013 - `<add name="MovieDBContext" connectionString="Data Source=(LocalDB)\v11.0;AttachDbFilename=|DataDirectory|\Movies.mdf;Integrated Security=True" providerName="System.Data.SqlClient" />`
   c. 2017 - `<add name="MovieDBContext" connectionString="Data Source=(LocalDB)\mssqllocaldb;AttachDbFilename=|DataDirectory|\Movies.mdf;Integrated Security=True" providerName="System.Data.SqlClient" />`
2. ContactManager .NET Cord – 2017 JSON format
   a. ConnectionString moved from web.config to appSettings.json
   b. `"ConnectionStrings": {"DefaultConnection": "Server=(localdb)\\mssqllocaldb;Database=CMfinal;Trusted_Connection=True;MultipleActiveResultSets=true" },`

ContactManager: https://docs.microsoft.com/en-us/aspnet/core/security/authorization/secure-data#create-the-starter-app - "Final" – no changes – just run it…. Chrome browser

The Steps that Worked

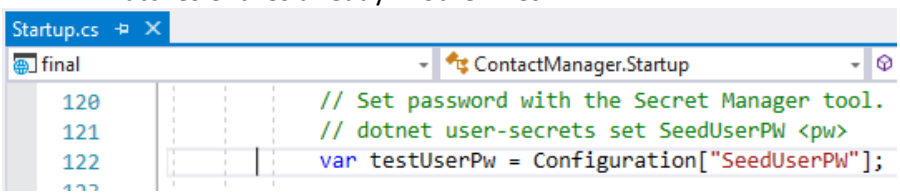
1. Extract lab files… to a folder.
2. Open in Visual Studio
3. If you try and CTRL – F5: Run the app you may get this:



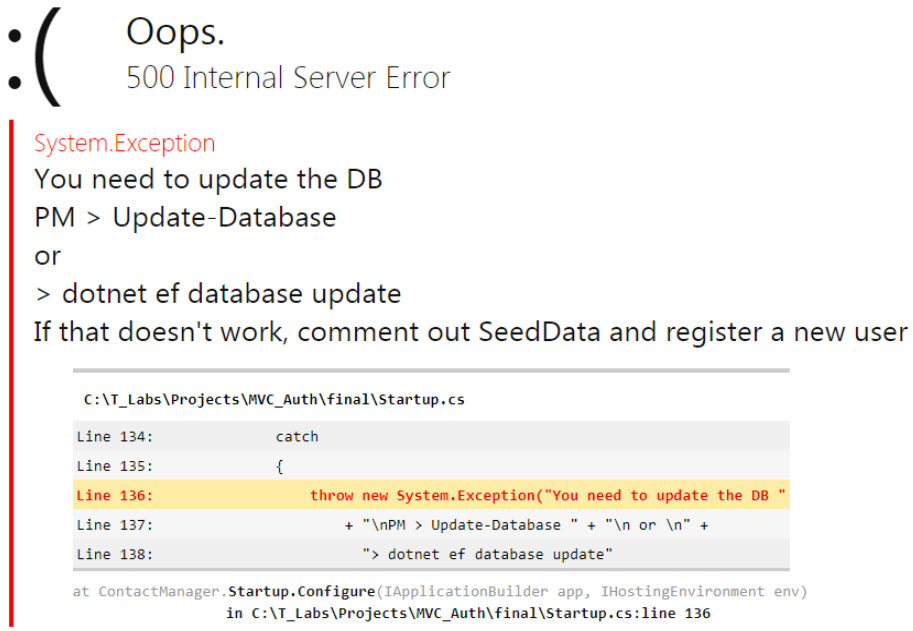
4. Open - Tools – NuGet Package Manager – Package Manager Console
5. Run this in Package Manager Console:
   a. PM> dotnet user-secrets set SeedUserPW SeedUserPW

i. SeedUserPW is both part of the command and the "<PW>" part shown in the instructions...
ii. Matches entries already in other files…

b.



6. Run this in Package Manager Console:
   a. PM> dotnet ef database update
   b. At this point I hit -CTRL-F5 – and still got error messages:

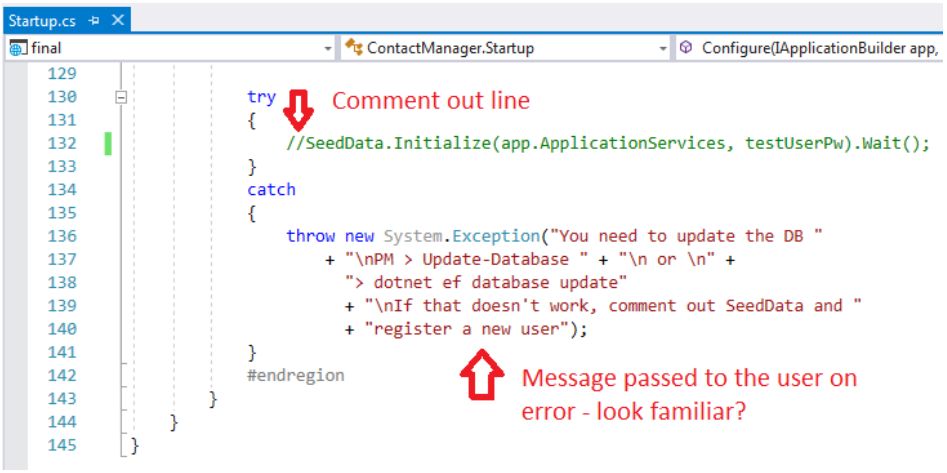


   i. You need to update the DB
   ii. PM > Update-Database – each time I run this – it fails in the console
   iii. or
   iv. PM> dotnet ef database update – This succeeds in the console

7. CTRL – F5: Run the app - Does the app run at this point or same 500 error?

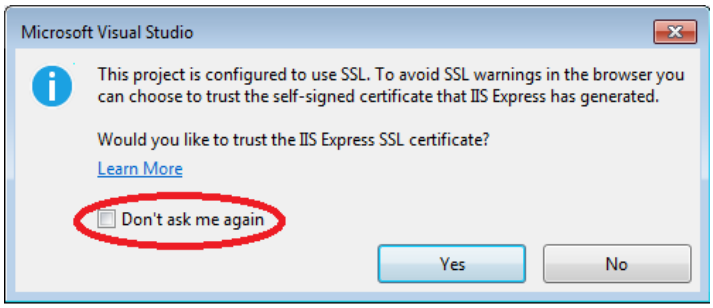
NEXT: If that doesn't work, comment out SeedData and register a new user:

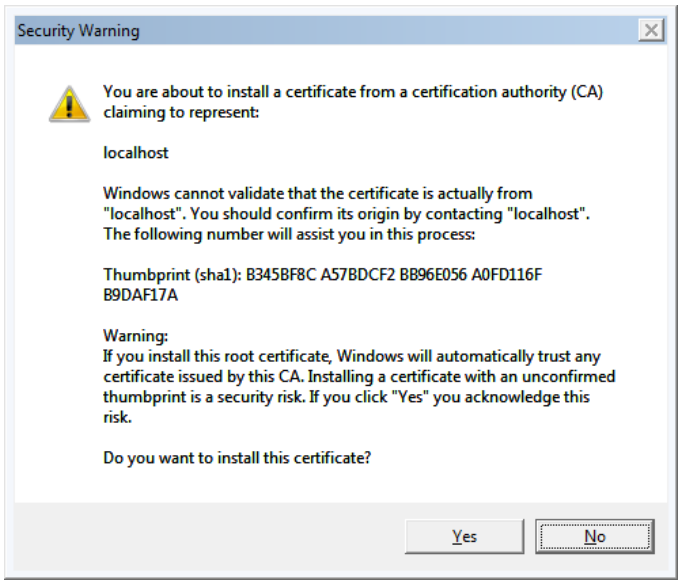
8. To make sure I highlighted – right mouse clicked – excluded from project - SeedData.cs file from the Data folder.
9. Then opened: Startup.cs and commented out (line 132 for me)
   a. //SeedData.Initialize(app.ApplicationServices, testUserPw).Wait();

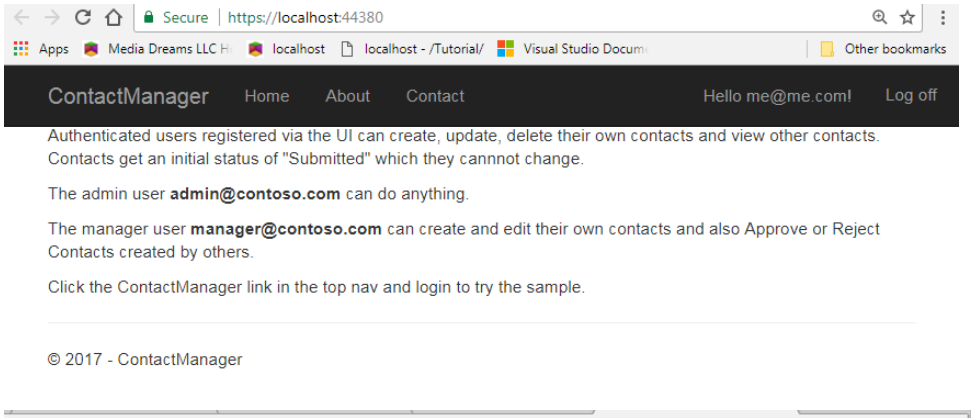


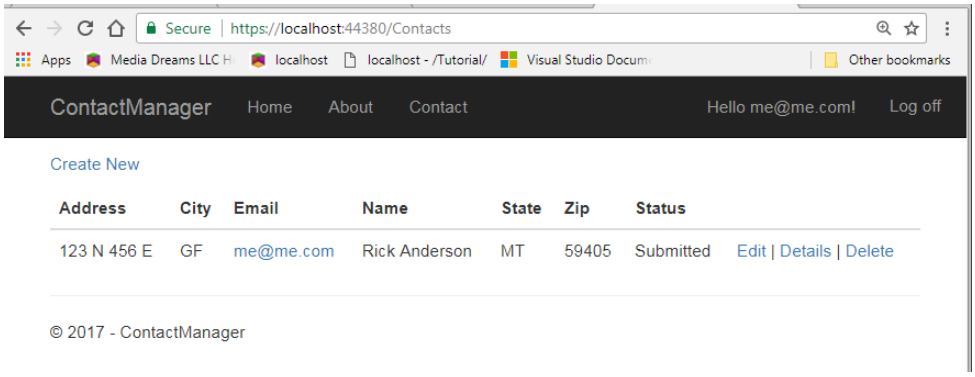
CTRL – F5: Run the app – register a new contact now works…. At least it is over here….

Install "certificate" to make the warning stop – don't forget to check "Don't ask me again" …





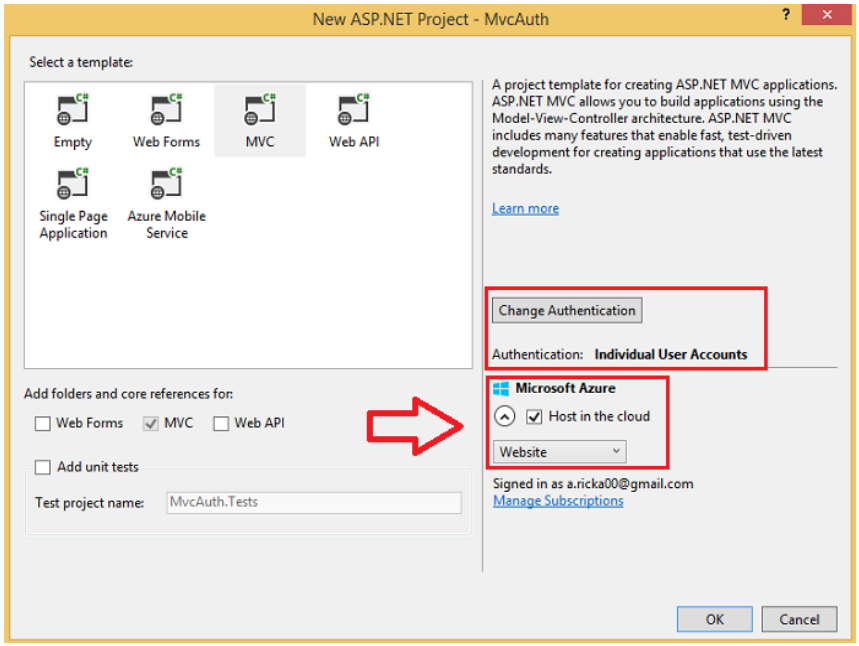




- Read through SeedData.cs – note what it supposed to accomplish on startup….
- Once the app works and you can register a user: Put SeedData.cs back into the project – uncomment the lines.
- Test the app

End ContactManager

UI/Azure SDK Plugin removed in 2017

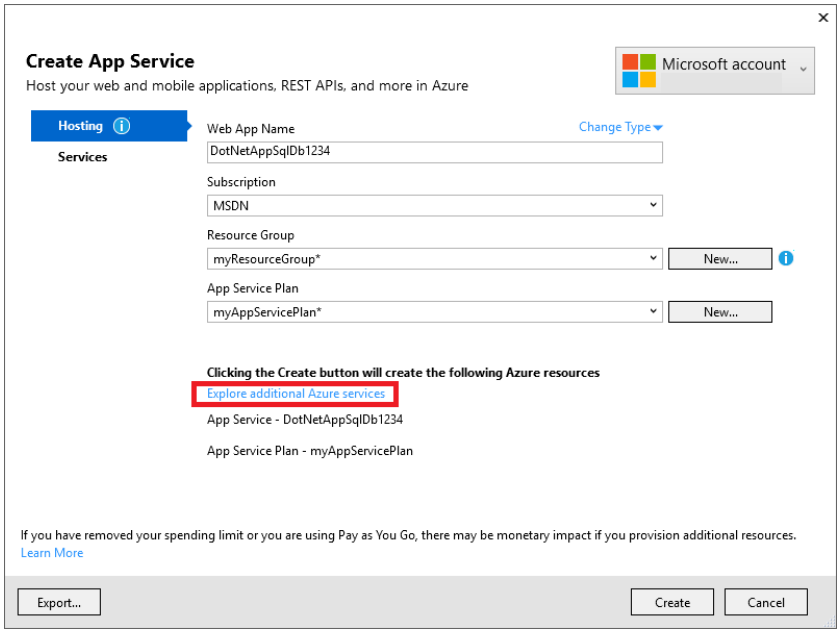


End UI/Azure

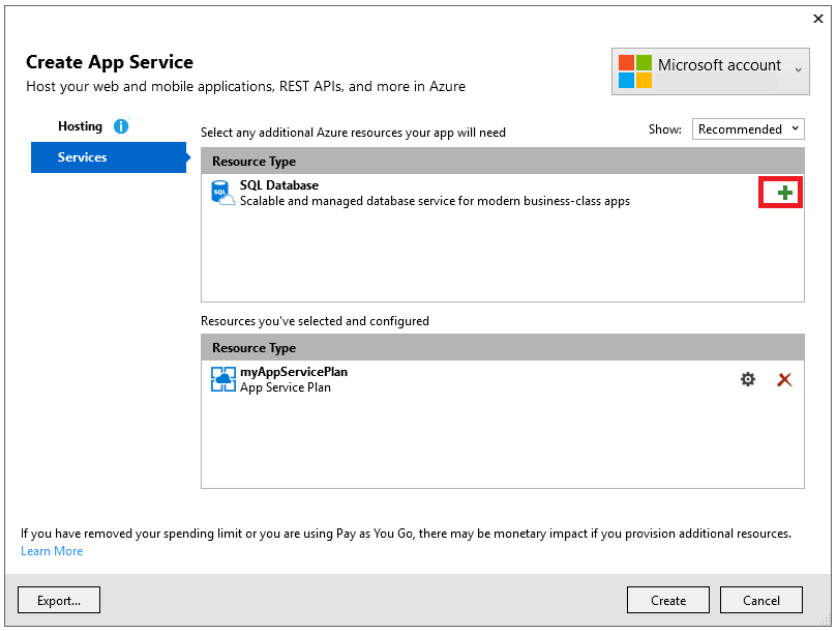
Publishing to Azure: The Databases!

Steps that work: Build and Publish ASP.NET app in Azure with SQL Database: https://docs.microsoft.com/en-us/azure/app-service/app-service-web-tutorial-dotnet-sqldatabase

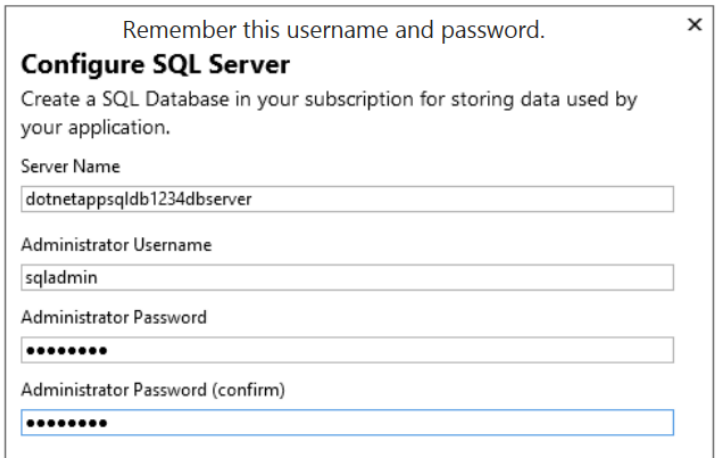
Select Explore Additional Azure services.



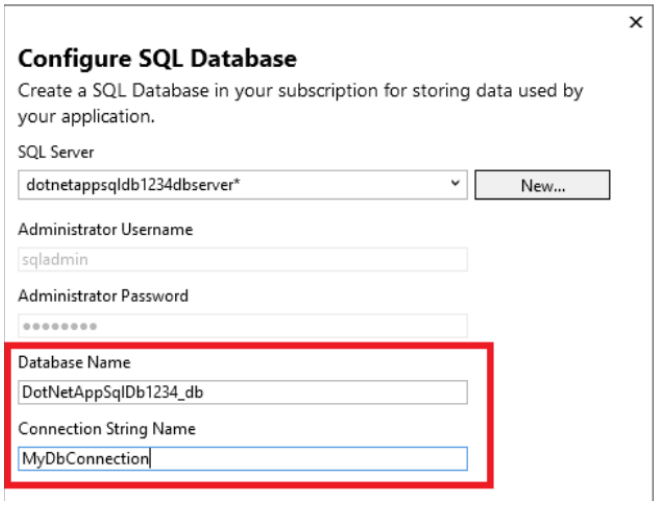
In the Services tab, click the + icon next to SQL Database.



In the Services tab, click the + icon next to SQL Database.



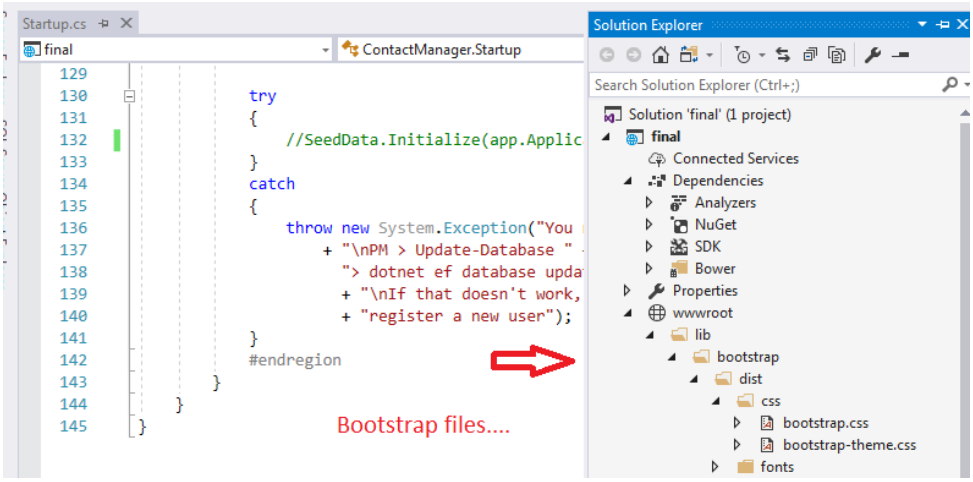
- In **Connection String Name**, type *MyDbConnection*. This name must match the connection string that is referenced in *Models/MyDatabaseContext.cs*.
- Select **OK**.



In the publish setting ensure migrations is selected

End Publishing to Azure: The Databases!

Location of Bootstrap.css files: Project – wwwroot – lib – bootstrap – dist - css

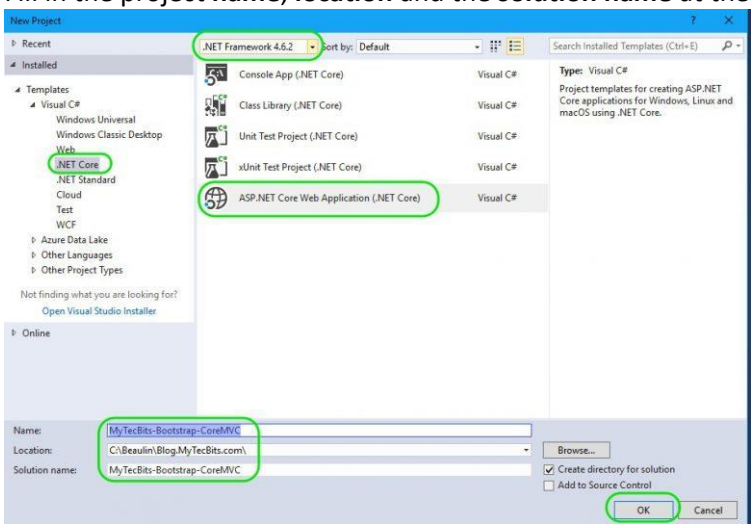


Using Bootstrap with CORE MVC: Not tested

- Visual Studio 2017
- .Net Framework 4.6.2
- ASP.NET Core 1.1.2
- ASP.NET Core MVC 1.1.3
- C#
- Bootstrap 4 beta
- jQuery 3.2.1

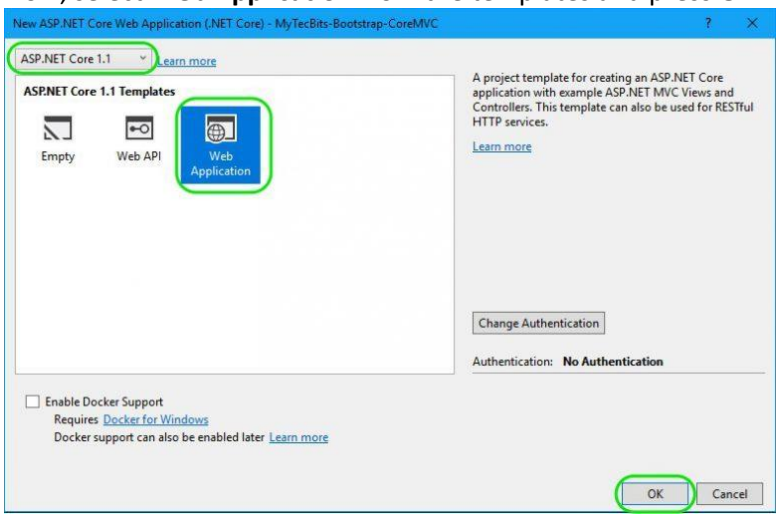
Create ASP.NET Core MVC Project

1. Launch the Visual Studio and go to menu **File > New > Project…**
2. In **New Project** pop-up window, at the top of center pane, from the drop-down list, select the latest version of .Net Framework. I chose **.Net Framework 4.6.2**.
3. Go to left pane **Installed > Templates > Visual C# > .Net Core**.
4. From the center pane, select **ASP.NET Core Web Application (.NET Core)**.
5. Fill in the project **name**, **location** and the **solution name** at the bottom of the pop-up screen and press **OK**.

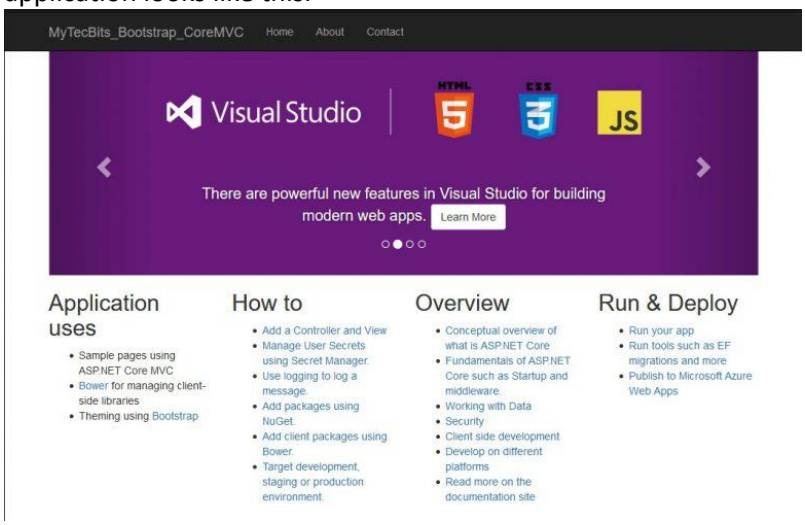


6. Another pop-up window will open.
7. Select **ASP.NET Core 1.1** from the core version selector drop down list.

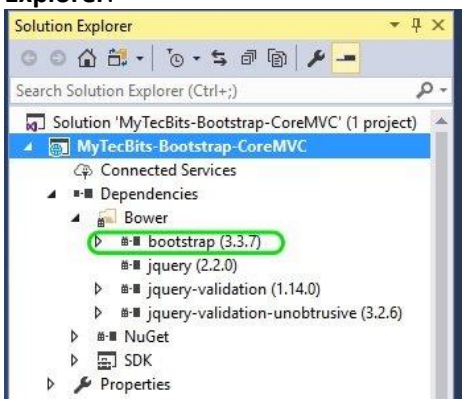
8. Now, select **Web Application** from the templates and press **OK**.



9. Visual studio creates a solution and a project in it, with the details you have provided and the template you have selected. This is a working web application. You can build and run the project. The Core MVC web application looks like this.



10. This web application already has bootstrap installed in it through the **Bower** package. You can see the bootstrap bower package by expanding the **[Project Name] > Dependencies > Bower** folder in **Solution Explorer**.

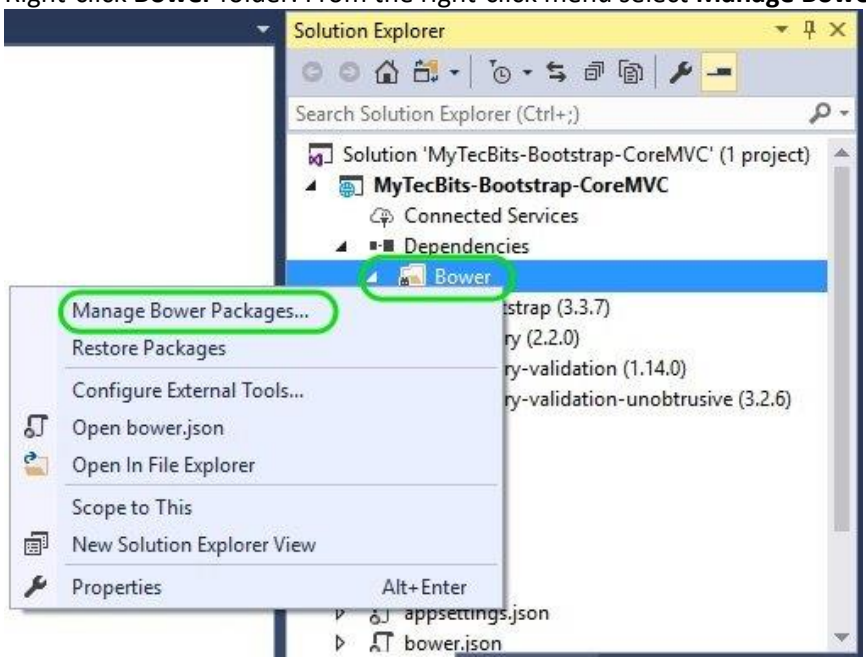


Upgrade Bootstrap Through Bower Package

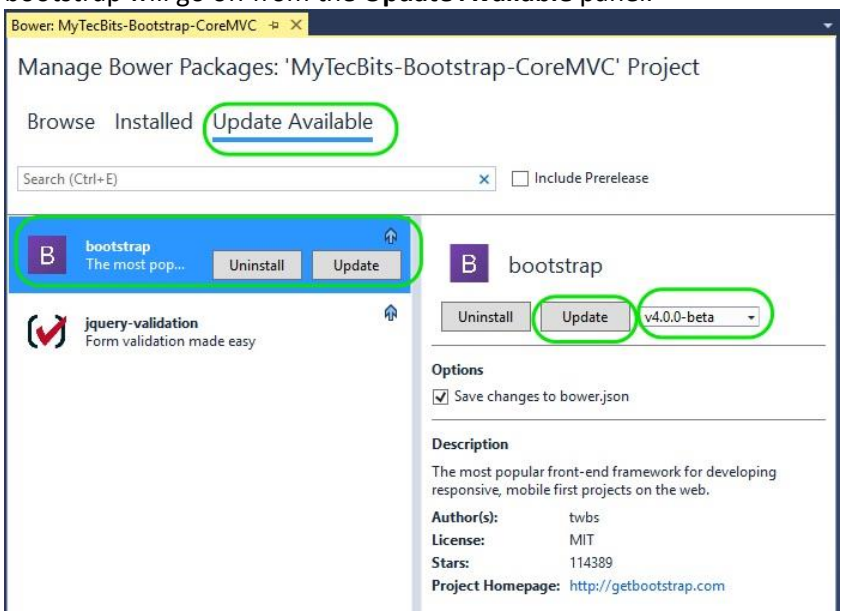
The version of bootstrap installed by visual studio while creating the project is usually an older version. It is good to upgrade the bootstrap and it's dependencies to the latest stable version. Here for this illustration, I'm going to upgrade the bootstrap to the beta release of version 4, as the stable version 4 is about to be released .

Follow these steps to upgrade bootstrap and jQuery which bootstrap depends on to their latest and greatest versions.

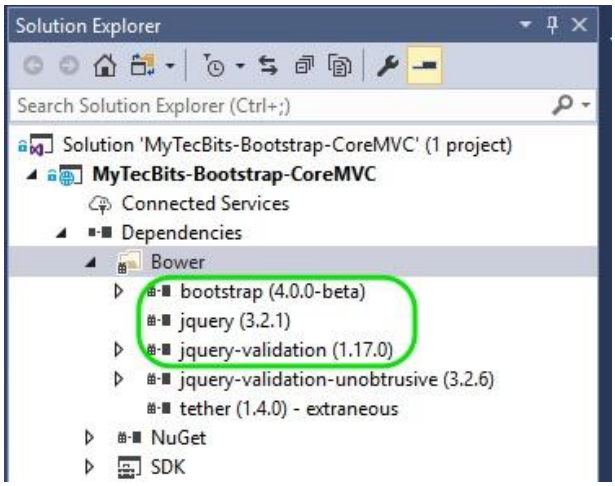
1. In the **Solution Explorer**, go to **[Project Name] > Dependencies > Bower** folder.
2. Right-click **Bower** folder. From the right-click menu select **Manage Bower Packages**.



3. In the Manage Bower Packages window, go to **Update Available** panel and choose **Include Prerelease** option.
4. From the left panel select **bootstrap**. In the right panel, select the bootstrap version **v4.0.0.0-beta** from the drop-down list and press **Update**. The installation process will take few seconds. On completion, the bootstrap will go off from the **Update Available** panel.

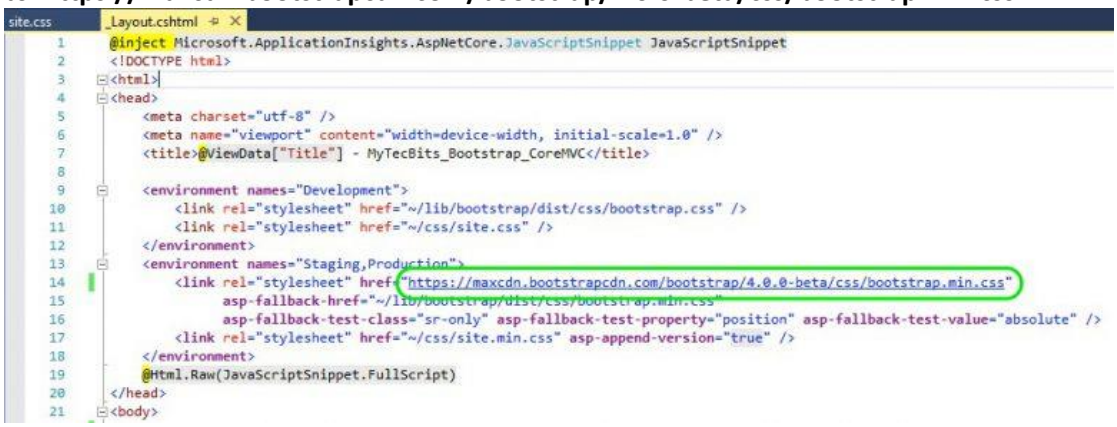


5. Similarly, update the **jquery** and **jquery-validation** to their latest stable versions. I've updated them to **jQuery 3.2.1** and **jQuery-Validation 1.17.0**.
6. Now if you notice the components under **Bower** folder in **Solution Explorer**, The versions numbers against the names shows the latest version numbers.



Update Environment Section

1. Open **Views > Shared > _Layout.cshtml** file.
2. In the **_Layout.cshtml** file, under the **<head>** section , you can see the environment sections for development and production.
3. Under the environment section "Staging,Production" change the bootstrap css CDN url from https://ajax.aspnetcdn.com/ajax/bootstrap/3.3.7/css/bootstrap.min.css to **https://maxcdn.bootstrapcdn.com/bootstrap/4.0.0-beta/css/bootstrap.min.css.**



4. Now go to the "Staging,Production" environment section just above the bottom of body ending tag.
5. Change the jquery CDN url to **https://code.jquery.com/jquery-3.2.1.slim.min.js** and its integrity to integrity="**sha384-KJ3o2DKtIkvYIK3UENzmM7KCkRr/rE9/Qpg6aAZGJwFDMVNA/GpGFF93hXpG5KkN**".
6. Change the bootstrap js DFN url to **https://maxcdn.bootstrapcdn.com/bootstrap/4.0.0-beta/js/bootstrap.min.js** and its integrity to integrity="**sha384-**

h0AbiXch4ZDo7tp9hKZ4TsHbi047NrKGLO3SEJAg45jXxnGIfYzk4Si90RDIqNm1".

```
    <environment names="Development">
        <script src="~/lib/jquery/dist/jquery.js"></script>
        <script src="~/lib/bootstrap/dist/js/bootstrap.js"></script>
        <script src="~/js/site.js" asp-append-version="true"></script>
    </environment>
    <environment names="Staging,Production">
        <script src="https://code.jquery.com/jquery-3.2.1.slim.min.js"
                asp-fallback-src="~/lib/jquery/dist/jquery.min.js"
                asp-fallback-test="window.jQuery"
                crossorigin="anonymous"
                integrity="sha384-KJ3o2DKtIkvYIK3UENzmM7KCkRr/rE9/Qpg6aAZGJwFDMVNA/GpGFF93hXpG5KkN">
        </script>
        <script src="https://maxcdn.bootstrapcdn.com/bootstrap/4.0.0-beta/js/bootstrap.min.js"
                asp-fallback-src="~/lib/bootstrap/dist/js/bootstrap.min.js"
                asp-fallback-test="window.jQuery && window.jQuery.fn && window.jQuery.fn.modal"
                crossorigin="anonymous"
                integrity="sha384-h0AbiXch4ZDo7tp9hKZ4TsHbi047NrKGLO3SEJAg45jXxnGIfYzk4Si90RDIqNm1">
        </script>
        <script src="~/js/site.min.js" asp-append-version="true"></script>
    </environment>

    @RenderSection("Scripts", required: false)
</body>
</html>
```

Using Bootstrap In ASP.NET Core MVC

Bootstrap 4 is now ready to be used with ASP.NET Core MVC application.If you are planning, not to use the default layout template created by visual studio, then you can ignore the below part of the article, You can implement one of the templates from bootstrap website. If you are planning to use the default project template with some changes, then proceed further.

The layouts and views which are already created during the project creation is using the classes from the older version of bootstrap. So, if you build and run the project again, you will notice the user interface collapses with no navigation bar or proper carousel. This is because the existing style classes are not compatible with bootstrap 4. In-order to fix this problem, you have to change the UI element classes to bootstrap 4. To start with, we'll see how to update the top navigation menu bar.

Update Navigation Menu Bar to Bootstrap 4

1. Go to **Solution Explorer > [Project Name] > wwwroot > css > site.css** and open the **site.css** file.
2. In the **site.css** style sheet, remove the first 4 lines, the styling for body (**body {…….}**). This is to remove the unwanted spacing at the top and bottom of the page.
3. To update the navigation bar, open **Views > Shared > _Layout.cshtml** file.
4. In the **_Layout.cshtml** file Just below the <body> tag, you will find the nav section starting with **<nav….** and ends with **</nav>**. Delete the entire nav section and replace it the below code.

```
<nav class="navbar navbar-expand-md navbar-dark bg-dark">
<a asp-area="" asp-controller="Home" asp-action="Index" class="navbar-brand">MyTecBits.com</a>
<button class="navbar-toggler navbar-toggler-right" type="button" data-toggle="collapse"
data-target="#navbarSupportedContent" aria-controls="navbarSupportedContent"
aria-expanded="false" aria-label="Toggle navigation">
<span class="navbar-toggler-icon"></span>
</button>
<div class="collapse navbar-collapse" id="navbarSupportedContent">
<ul class="navbar-nav mr-auto">
<li class="nav-item">
<a asp-area="" asp-controller="Home" asp-action="Index" class="nav-link">Home</a>
</li>
```

```
<li class="nav-item">
<a asp-area="" asp-controller="Home" asp-action="About" class="nav-link">About</a>
</li>
<li class="nav-item">
<a asp-area="" asp-controller="Home" asp-action="Contact" class="nav-link">Contact</a>
</li>
</ul>
</div>
</nav>
```

_Layout.cshtml

```
@Html.Raw(JavaScriptSnippet.FullScript)
</head>
<body>
    <nav class="navbar navbar-inverse navbar-fixed-top">
        <div class="container">
            <div class="navbar-header">
                <button type="button" class="navbar-toggle" data-toggle="collapse" data-target=".navbar-collapse">
                    <span class="sr-only">Toggle navigation</span>
                    <span class="icon-bar"></span>
                    <span class="icon-bar"></span>
                    <span class="icon-bar"></span>
                </button>
                <a asp-area="" asp-controller="Home" asp-action="Index" class="navbar-brand">MyTecBits_Bootstrap_CoreMVC</a>
            </div>
            <div class="navbar-collapse collapse">
                <ul class="nav navbar-nav">
                    <li><a asp-area="" asp-controller="Home" asp-action="Index">Home</a></li>
                    <li><a asp-area="" asp-controller="Home" asp-action="About">About</a></li>
                    <li><a asp-area="" asp-controller="Home" asp-action="Contact">Contact</a></li>
                </ul>
            </div>
        </div>
    </nav>
    <div class="container body-content">
        @RenderBody()
```

to

```
<body>
    <nav class="navbar navbar-expand-md navbar-dark bg-dark">
        <a asp-area="" asp-controller="Home" asp-action="Index" class="navbar-brand">MyTecBits.com</a>
        <button class="navbar-toggler navbar-toggler-right" type="button" data-toggle="collapse"
                data-target="#navbarSupportedContent" aria-controls="navbarSupportedContent"
                aria-expanded="false" aria-label="Toggle navigation">
            <span class="navbar-toggler-icon"></span>
        </button>
        <div class="collapse navbar-collapse" id="navbarSupportedContent">
            <ul class="navbar-nav mr-auto">
                <li class="nav-item">
                    <a asp-area="" asp-controller="Home" asp-action="Index" class="nav-link">Home</a>
                </li>
                <li class="nav-item">
                    <a asp-area="" asp-controller="Home" asp-action="About" class="nav-link">About</a>
                </li>
                <li class="nav-item">
                    <a asp-area="" asp-controller="Home" asp-action="Contact" class="nav-link">Contact</a>
                </li>
            </ul>
        </div>
    </nav>
    <div class="container body-content">
        @RenderBody()
        <hr />
```

5. If you build and run the application, you will see the navigation menu bar is now working properly.

Update Carousel to Bootstrap 4

Follow these steps to fix the carouser which was bronken due to bootstrap update.

1. To update the carousel, open **Views > Home > Index.cshtml**.
2. In the **Index.cshtml** file, you will see the **div** with **id="myCarousel"**. Inside the div you will find the carousel items represented by the **div** with **class="item"**. **item** class is not supported in bootstrap 4. Instead you have to use the class **"carousel-item"**.

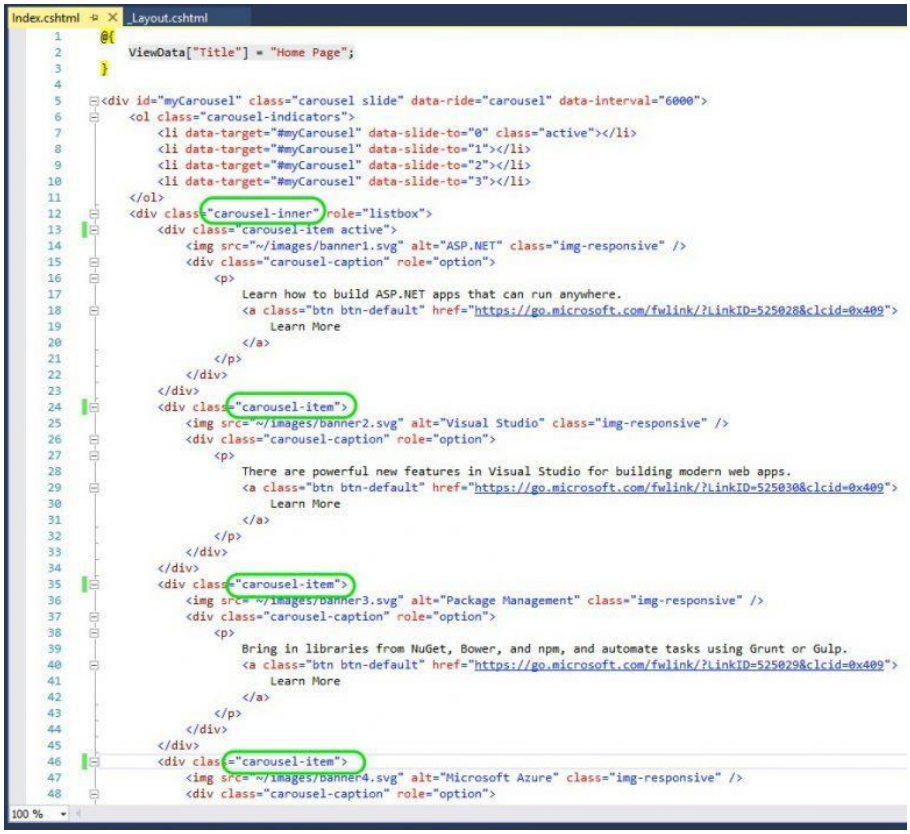
3. Change all four **class="item"** to **"carousel-item"**.

Index.cshtml | _Layout.cshtml

```
<div id="myCarousel" class="carousel slide" data-ride="carousel" data-interval="6000">
    <ol class="carousel-indicators">
        <li data-target="#myCarousel" data-slide-to="0" class="active"></li>
        <li data-target="#myCarousel" data-slide-to="1"></li>
        <li data-target="#myCarousel" data-slide-to="2"></li>
        <li data-target="#myCarousel" data-slide-to="3"></li>
    </ol>
    <div class="carousel-inner" role="listbox">
        <div class="item active">
            <img src="~/images/banner1.svg" alt="ASP.NET" class="img-responsive" />
            <div class="carousel-caption" role="option">
                <p>
                    Learn how to build ASP.NET apps that can run anywhere.
                    <a class="btn btn-default" href="https://go.microsoft.com/fwlink/?LinkID=525028&clcid=0x409">
                        Learn More
                    </a>
                </p>
            </div>
        </div>
        <div class="item">
            <img src="~/images/banner2.svg" alt="Visual Studio" class="img-responsive" />
            <div class="carousel-caption" role="option">
                <p>
                    There are powerful new features in Visual Studio for building modern web apps.
                    <a class="btn btn-default" href="https://go.microsoft.com/fwlink/?LinkID=525030&clcid=0x409">
                        Learn More
                    </a>
                </p>
            </div>
        </div>
        <div class="item">
            <img src="~/images/banner3.svg" alt="Package Management" class="img-responsive" />
            <div class="carousel-caption" role="option">
                <p>
                    Bring in libraries from NuGet, Bower, and npm, and automate tasks using Grunt or Gulp.
                    <a class="btn btn-default" href="https://go.microsoft.com/fwlink/?LinkID=525029&clcid=0x409">
                        Learn More
                    </a>
                </p>
            </div>
        </div>
        <div class="item">
            <img src="~/images/banner4.svg" alt="Microsoft Azure" class="img-responsive" />
            <div class="carousel-caption" role="option">
                <p>
                    Learn how Microsoft's Azure cloud platform allows you to build, deploy, and scale web apps.
                    <a class="btn btn-default" href="https://go.microsoft.com/fwlink/?LinkID=525027&clcid=0x409">
                        Learn More
```

100 %

to



4. Now, you have to replace the carousel control anchor tags with the below code. At the bottom of the **myCarousel** div, you can find two anchor tags one with **class="left carousel-control"** and another with **class="right carousel-control"**. Remove both the anchor tags and their content and replace with:

```
<a class="carousel-control-prev" href="#myCarousel" role="button" data-slide="prev">
<span class="carousel-control-prev-icon" aria-hidden="true"></span>
<span class="sr-only">Previous</span>
</a>
<a class="carousel-control-next" href="#myCarousel" role="button" data-slide="next">
<span class="carousel-control-next-icon" aria-hidden="true"></span>
<span class="sr-only">Next</span>
</a>
```

```
Index.cshtml  _Layout.cshtml
43                  </p>
44              </div>
45          </div>
46          <div class="carousel-item">
47              <img src="~/images/banner4.svg" alt="Microsoft Azure" class="img-responsive" />
48              <div class="carousel-caption" role="option">
49                  <p>
50                      Learn how Microsoft's Azure cloud platform allows you to build, deploy, and scale web apps.
51                      <a class="btn btn-default" href="https://go.microsoft.com/fwlink/?LinkID=525027&clcid=0x409">
52                          Learn More
53                      </a>
54                  </p>
55              </div>
56          </div>
57      </div>
58      <a class="left carousel-control" href="#myCarousel" role="button" data-slide="prev">
59          <span class="glyphicon glyphicon-chevron-left" aria-hidden="true"></span>
60          <span class="sr-only">Previous</span>
61      </a>
62      <a class="right carousel-control" href="#myCarousel" role="button" data-slide="next">
63          <span class="glyphicon glyphicon-chevron-right" aria-hidden="true"></span>
64          <span class="sr-only">Next</span>
65      </a>
66  </div>
67
68  <div class="row">
69      <div class="col-md-3">
70          <h2>Application uses</h2>
71          <ul>
```

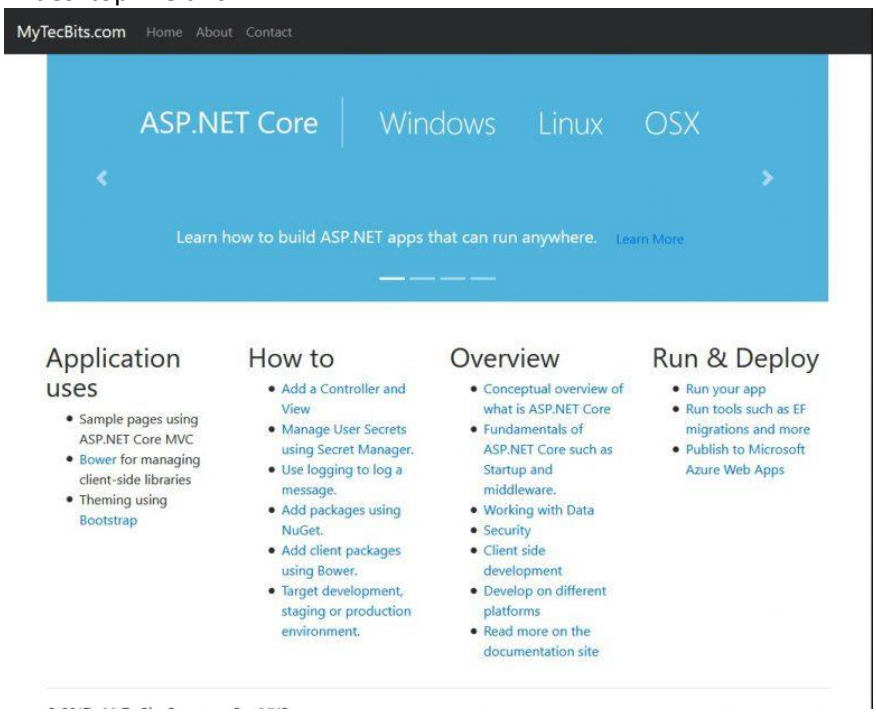
to:

```
Index.cshtml  _Layout.cshtml
44              </div>
45          </div>
46          <div class="carousel-item">
47              <img src="~/images/banner4.svg" alt="Microsoft Azure" class="img-responsive" />
48              <div class="carousel-caption" role="option">
49                  <p>
50                      Learn how Microsoft's Azure cloud platform allows you to build, deploy, and scale web apps.
51                      <a class="btn btn-default" href="https://go.microsoft.com/fwlink/?LinkID=525027&clcid=0x409">
52                          Learn More
53                      </a>
54                  </p>
55              </div>
56          </div>
57      </div>
58      <a class="carousel-control-prev" href="#myCarousel" role="button" data-slide="prev">
59          <span class="carousel-control-prev-icon" aria-hidden="true"></span>
60          <span class="sr-only">Previous</span>
61      </a>
62      <a class="carousel-control-next" href="#myCarousel" role="button" data-slide="next">
63          <span class="carousel-control-next-icon" aria-hidden="true"></span>
64          <span class="sr-only">Next</span>
65      </a>
66  </div>
67
68  <div class="row">
```

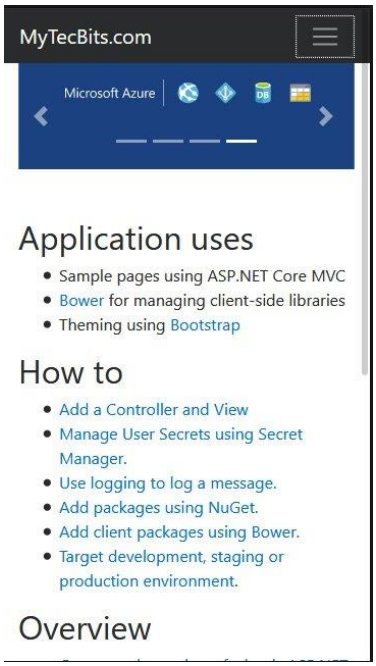
5. The carousel is now ready. If you build and run the application in a browser, you can see the carousel working properly.
6. To add a space between the carousel and the content below, just use the bootstrap's margin top spacing class **mt-5** in the row below the carousel. Read more about spacing techniques.

```
57      </div>
58      <a class="carousel-control-prev" href="#myCarousel" role="button" data-slide="prev">
59          <span class="carousel-control-prev-icon" aria-hidden="true"></span>
60          <span class="sr-only">Previous</span>
61      </a>
62      <a class="carousel-control-next" href="#myCarousel" role="button" data-slide="next">
63          <span class="carousel-control-next-icon" aria-hidden="true"></span>
64          <span class="sr-only">Next</span>
65      </a>
66  </div>
67
68  <div class="row mt-5">
69      <div class="col-md-3">
70          <h2>Application uses</h2>
71          <ul>
```

7. Now run the application in a browser. You will see the application as in below screen shots. In desktop like this:



and in small screen like this:



Using Bootstrap with Razor Tag Helpers

Another important aspect is to style the **Razor Tag Helpers** in Core MVC. Styling Tag Helpers using bootstrap is straight forward and easier than styling the Web Form controls and MVC HTML Helpers. As Tag Helpers are just HTML tags with server-side attributes, you can add the bootstrap styling using the HTML class attribute. For example to style a label with tag helper:

<label asp-for="FirstName"></label>
You can add the bootstrap lead class like:
<label asp-for="FirstName" **class="lead"**></label>

Similarly, you can style the other Tag Helpers using bootstrap classes.

Note: For using IntelliSense in Tag Helpers in Visual Studio 2017, you have install **Razor Language Service** extension.

Using Bootstrap with MVC HTML Helpers

To add style classes to HTML Helpers, you have to use the **htmlAttributes** object. For example, in the HTML action link:

```
@Html.ActionLink("Go Home", "Index", "Home")

@* To make the hyperlink a button use the class "btn btn-default" like this: *@

@Html.ActionLink("Go Home", "Index", "Home", null, new { @class = "btn btn-primary" })
```

Similarly, you can style the other HTML Helpers using bootstrap classes.

Sample Source Code

The sample Core MVC project with Bootstrap 4 user interface framework created using this step-by-step instructions is available in GitHub @ https://github.com/mytecbits/MyTecBits-Bootstrap-CoreMVC

End BootStrap

References

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2. ASP.NET Core 1.0 - Change Bootstrap layout in 3 Steps: https://code.msdn.microsoft.com/ASPNET-Core-Change-8fbeb7cd
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