

ASP.NET Core MVC 3.1

Tahaluf Training Center 2021



Chapter 1

- 1 Overview of ASP.NET Core MVC
- 2 Differences between .NET Core and .NET Framework
- 3 Create ASP.NET Core MVC Project
- 4 ASP.NET Core Project Structure



Overview of ASP.NET Core MVC

.NET is a software framework that is designed and developed by Microsoft. The first version of the .NET framework was 1.0 which came in the year 2002. In easy words, it is a virtual machine for compiling and executing programs written in different languages like C#, VB.NET, etc.



Overview of ASP.NET Core MVC

The **Model View Controller** (MVC) design pattern specifies that an application consist of a data model, presentation information, and control information. The pattern requires that each of these be separated into different objects.



Overview of ASP.NET Core MVC

MVC consist of three main components: Models, Views, and Controllers, this architectural pattern helps to achieve separation of concerns.



Overview of ASP.NET Core MVC

Model: is the component of MVC Components represent the classes of database tables.

Model is the central component of the MVC pattern application.

Model represents the data.



Overview of ASP.NET Core MVC

View: The View in an MVC application represents the content through the user interface.

Razor view using to embed .NET code in HTML markup.

View is the User Interface.



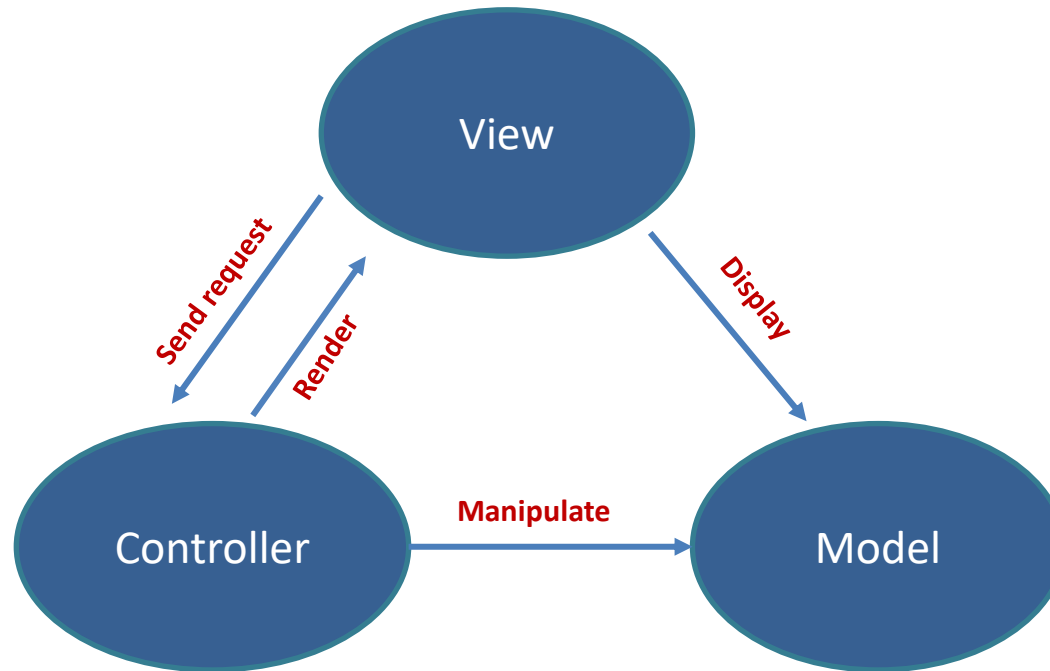
Overview of ASP.NET Core MVC

Controllers: are the components that process user interaction, work with the model, and finally select a view to render.

Controller is the request handler.



Overview of ASP.NET Core MVC



Chapter 1

- 1 Overview of ASP.NET Core MVC
- 2 Differences between .NET Core and .NET Framework
- 3 Create ASP.NET Core MVC Project
- 4 ASP.NET Core Project Structure



Differences Between .NET Core and .Net Framework

.NET Framework	.NET Core
<ul style="list-style-type: none">is the first implementation of .NET which works on Windows platform only.	<ul style="list-style-type: none">is the latest implementation of .NET which runs on Windows, Linux, and macOS(cross-platform).
<ul style="list-style-type: none">source code is public but Microsoft doesn't accept third party contributions for it.	<ul style="list-style-type: none">open-source and Microsoft accepts third party contribution to .NET Core.
<ul style="list-style-type: none">has a very rich desktop top development framework for windows application which include Windows Forms and WPF.	<ul style="list-style-type: none">supports desktop frameworks like Windows Forms and WPF from version 3.0.



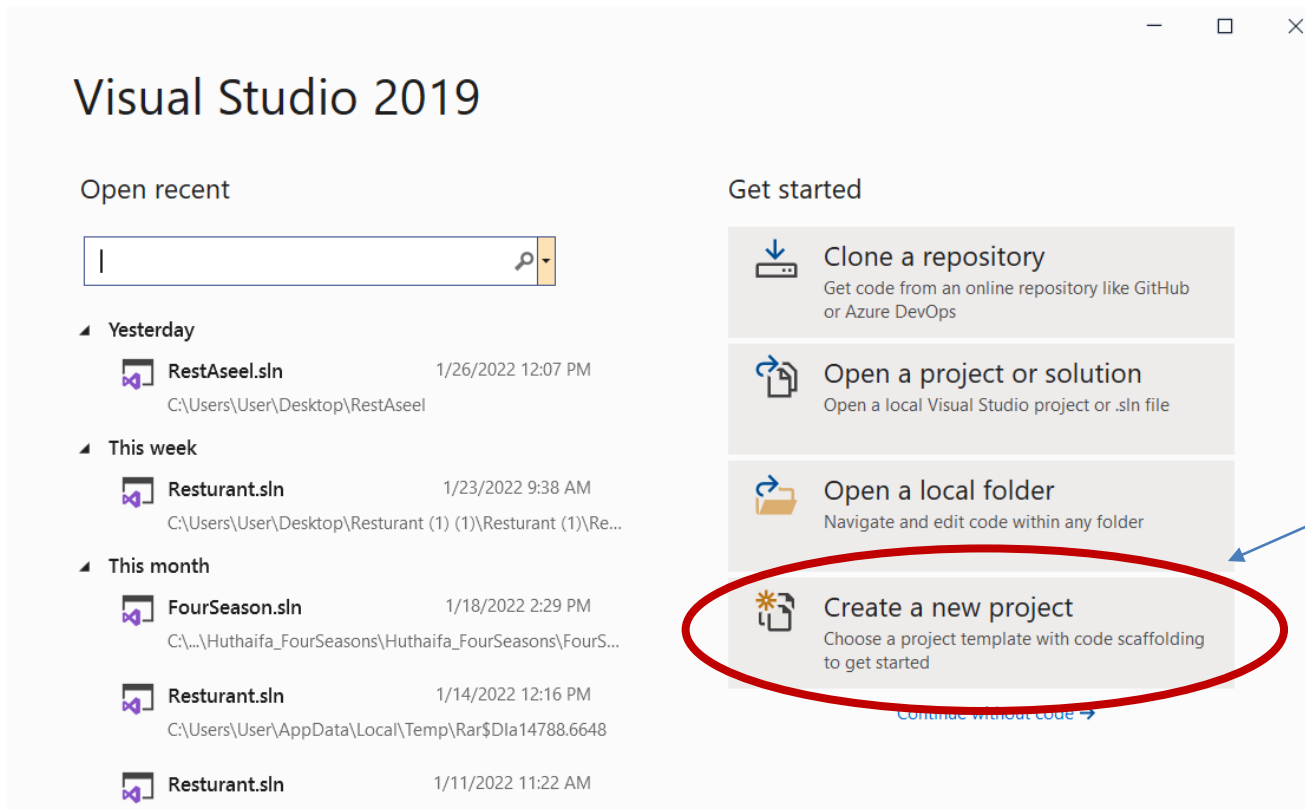
Differences between .NET Core and .Net Framework

.NET Framework	.NET Core
<ul style="list-style-type: none">doesn't support the in-app deployment model.	<ul style="list-style-type: none">does support in-app deployment model.
<ul style="list-style-type: none">A huge third-party packages library is available for .NET Framework.	<ul style="list-style-type: none">Support large number of third party packages, it doesn't compete with .NET Framework in this area because it's much newer than .Net framework.



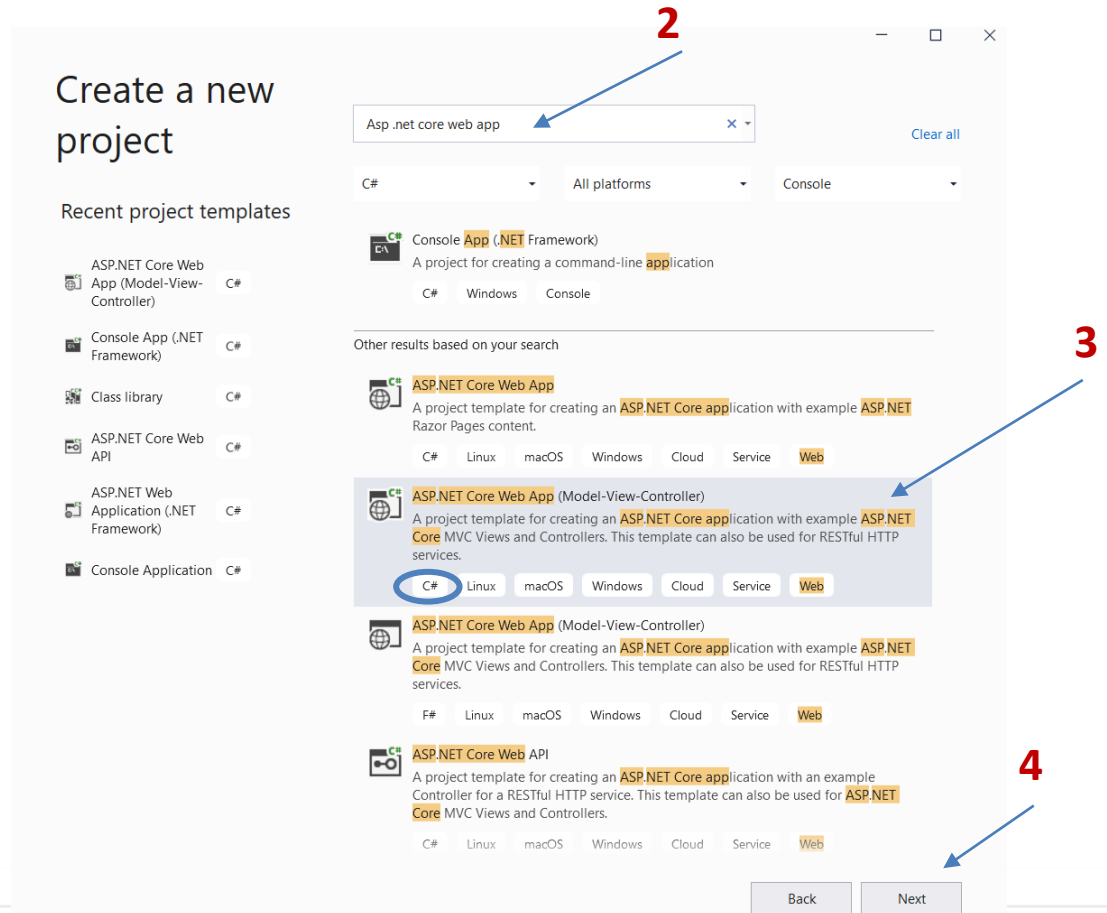
Create ASP.NET Core MVC Project

- Start, Visual Studio 2019 and select **Create a new project**.



Create ASP.NET Core MVC Project

- choose Asp .net core web app(Model-view-controller) C#.



Create ASP.NET Core MVC Project

- Set Project Name {**Restaurant**}.

5

Configure your new project

ASP.NET Core Web App (Model-View-Controller) C# Linux macOS Windows Cloud Service Web

Project name

Resturant

Location

C:\Users\User\source\repos

Solution name ⓘ

Resturant

☐ Place solution and project in the same directory

Back Next

Choose Location

6



Create ASP.NET Core MVC Project

- Choose Target Framework 3.1.

Note : Enable Docker if use multiple operating system (no need).

Additional information

ASP.NET Core Web App (Model-View-Controller) C# Linux macOS Windows Cloud Service Web

Target Framework ⓘ

.NET Core 3.1 (Long-term support)

Authentication Type ⓘ

None

☒ Configure for HTTPS ⓘ

☐ Enable Docker ⓘ

Docker OS ⓘ

Linux

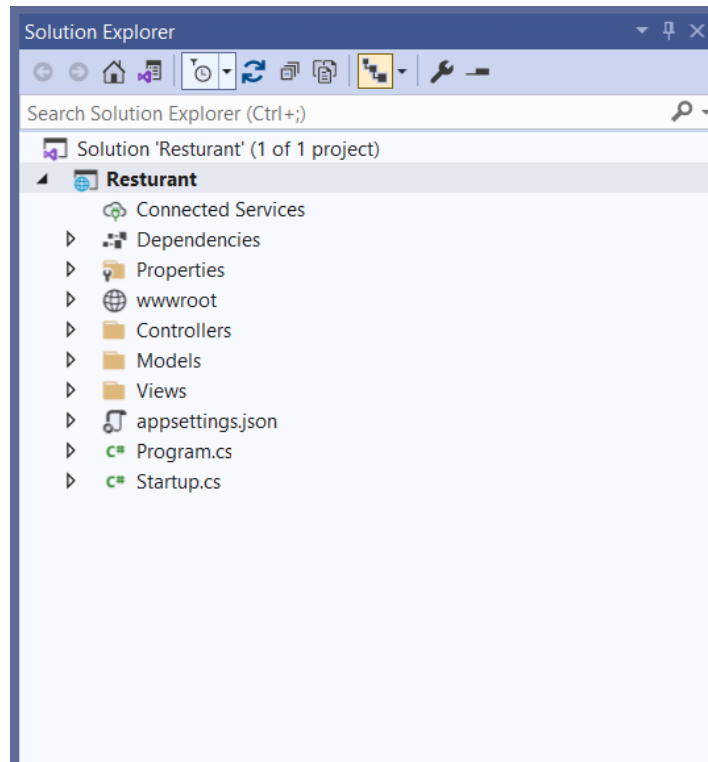
☐ Enable Razor runtime compilation ⓘ

Back Create



Create ASP.NET Core MVC Project

- The project is created.



ASP.NET Core Project Structure

- **wwwroot Folder:** is considered the web root folder.
- In the ASP.NET Core project, the **wwwroot folder** is used to store Static files, all design files (css,images,js,bootstrap) store in wwwroot .
- **Program.cs:** ASP.NET Core web application is a console project which starts executing from Main() method (the entry point) in Program class.



ASP.NET Core Project Structure

- **Startup class:** Optionally includes a Configure Services method to configure the app's services.
- A service is a reusable component that provides app functionality.
- Services are registered in Configure Services and consumed across the app via Dependency Injection (DI) or Application Services.



Generate ASP.NET Core MVC Model Classes

How to Install packages:

➤ Tools => NuGet Package Manager => Manage NuGet Packages for Solution:

1. ODP.NetCore v(2.0.12).
2. Microsoft.EntityFrameworkCore v(5.0.11).
3. Oracle.EntityFrameworkCore v(5.21.4).
4. Microsoft.EntityFrameworkCore.SqlServer v(3.1.21).
5. Microsoft.EntityFrameworkCore.Tools 5.0.11.



Generate ASP.NET Core MVC Model Classes

Another way to install packages:

➤ Tools => NuGet Package Manager => Package Manager Console

- 1- Install-Package ODP.NetCore –Version 2.0.12
- 2- Install-Package Microsoft.EntityFrameworkCore –Version 5.0.11
- 3- Install-Package Oracle.EntityFrameworkCore –Version 5.21.4
- 4- Install-Package Microsoft.EntityFrameworkCore.SqlServer –Version 3.1.20
- 5- Install-Package Microsoft.EntityFrameworkCore.Tools –Version 5.0.11



Generate ASP.NET Core MVC Model Classes

➤ ODP.NetCore

ODP.NET Core is an ADO.NET driver that provides fast data access from Microsoft .NET Core clients to Oracle databases. It runs on both Windows and Linux.



Generate ASP.NET Core MVC Model Classes

➤ Microsoft.EntityFrameworkCore

Entity Framework Core is a modern object-database mapper for .NET. It supports LINQ queries, change tracking, updates, and schema migrations. EF Core works with SQL Server, Azure SQL Database, SQLite, Azure Cosmos DB, MySQL, PostgreSQL, and other databases through a provider plugin API.



Generate ASP.NET Core MVC Model Classes

➤ Oracle.EntityFrameworkCore

Entity Framework Core is a cross-platform Microsoft object-relational mapper that enables .NET developers to work with relational databases using .NET objects.



Generate ASP.NET Core MVC Model Classes

➤ Microsoft.EntityFrameworkCore.SqlServer

Microsoft.EntityFrameworkCore.SqlServer database **provider** allows Entity Framework Core to be used with Microsoft SQL Server (including SQL Azure). The provider is maintained as part of the Entity Framework Core Project.



Generate ASP.NET Core MVC Model Classes

➤ Microsoft.EntityFrameworkCore.Tools

Entity Framework Core Tools enables these commonly used commands:

- Add-Migration
- Bundle-Migration
- Drop-Database
- Get-DbContext
- Get-Migration
- Optimize-DbContext
- Remove-Migration
- Scaffold-DbContext
- Script-Migration
- Update-Database



Generate ASP.NET Core MVC Model Classes

Task : (5 Marks)

Create a class diagram for the Restaurant database.

