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

.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.

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.

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

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.

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

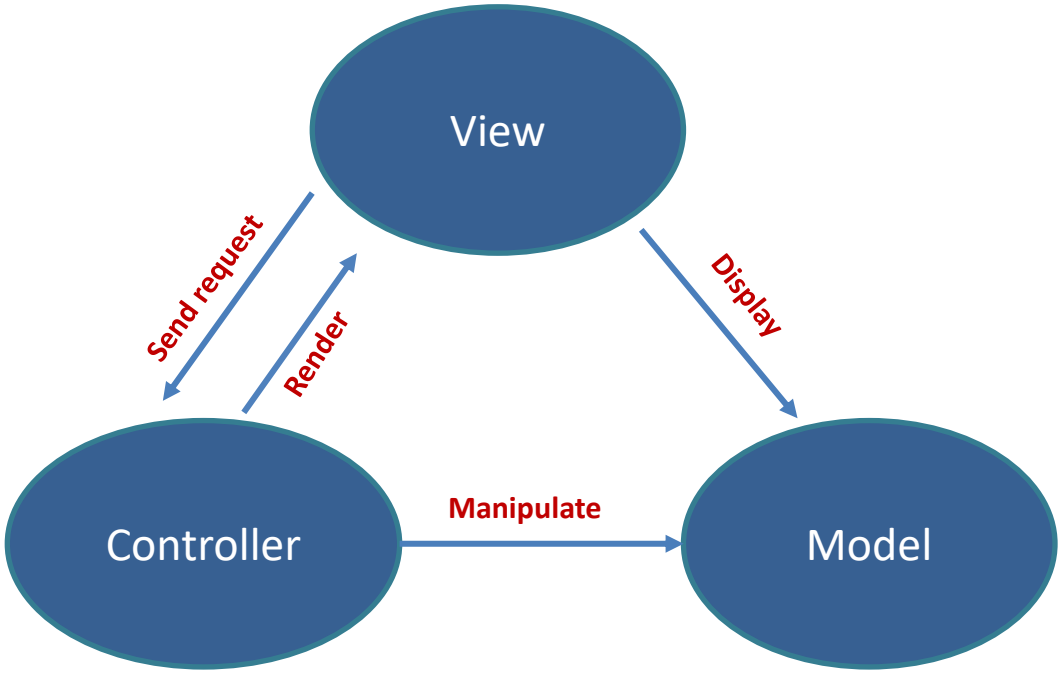
Razor view using to embed .NET code in HTML markup.

View is the User Interface.

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

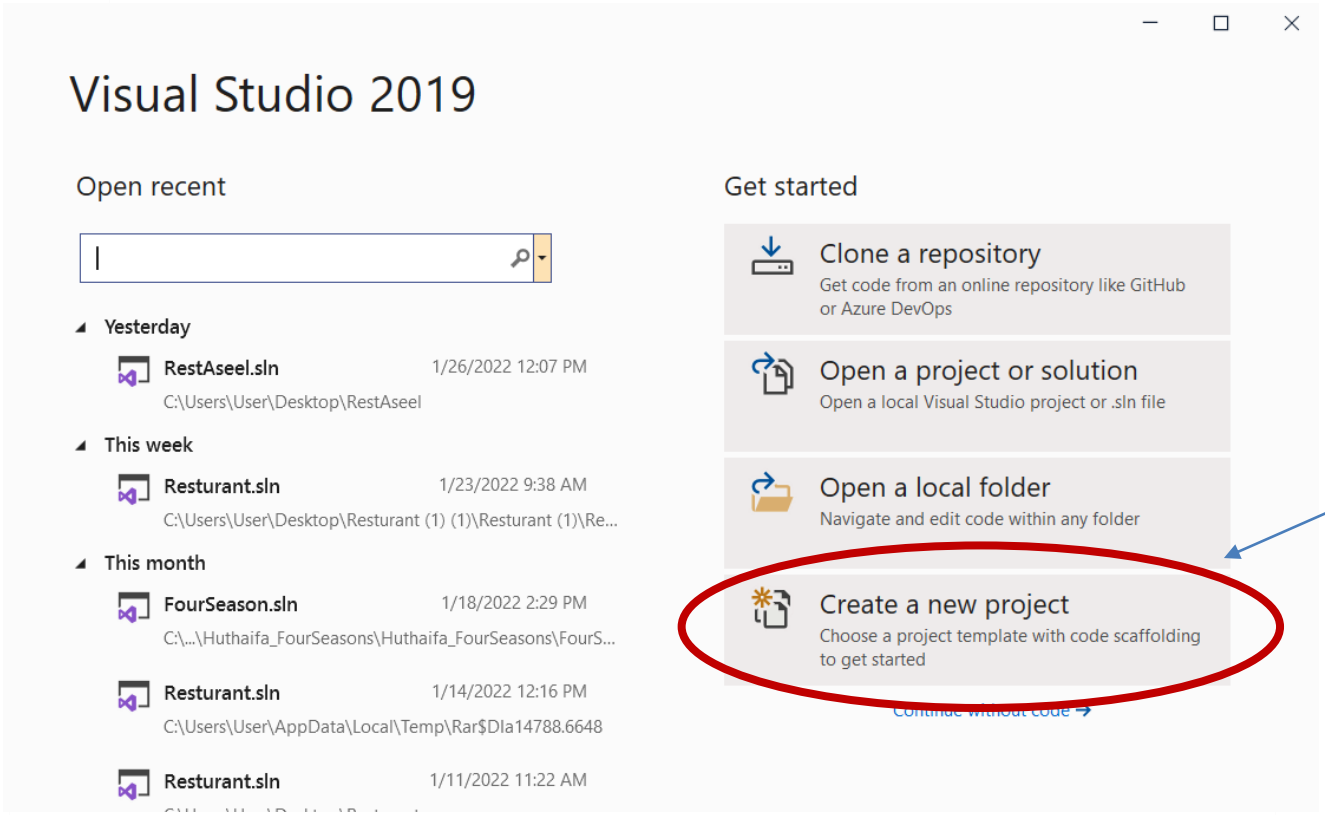
Differences Between .NET Core and .Net Framework

.NET Framework	.NET Core
• is the first implementation of .NET which works on Windows platform only.	• is the latest implementation of .NET which runs on Windows, Linux, and macOS(**cross-platform**).
• source code is public, but Microsoft doesn't accept third party contributions for it.	• open-source and Microsoft accepts third party contribution to .NET Core.
• has a very rich desktop top development framework for windows application which include Windows Forms and WPF.	• supports desktop frameworks like Windows Forms and WPF from version 3.0.

Differences between .NET Core and .Net Framework

.NET Framework	.NET Core
• doesn't support the in-app deployment model.	• does support in-app deployment model.
• A huge third-party packages library is available for .NET Framework.	• 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.

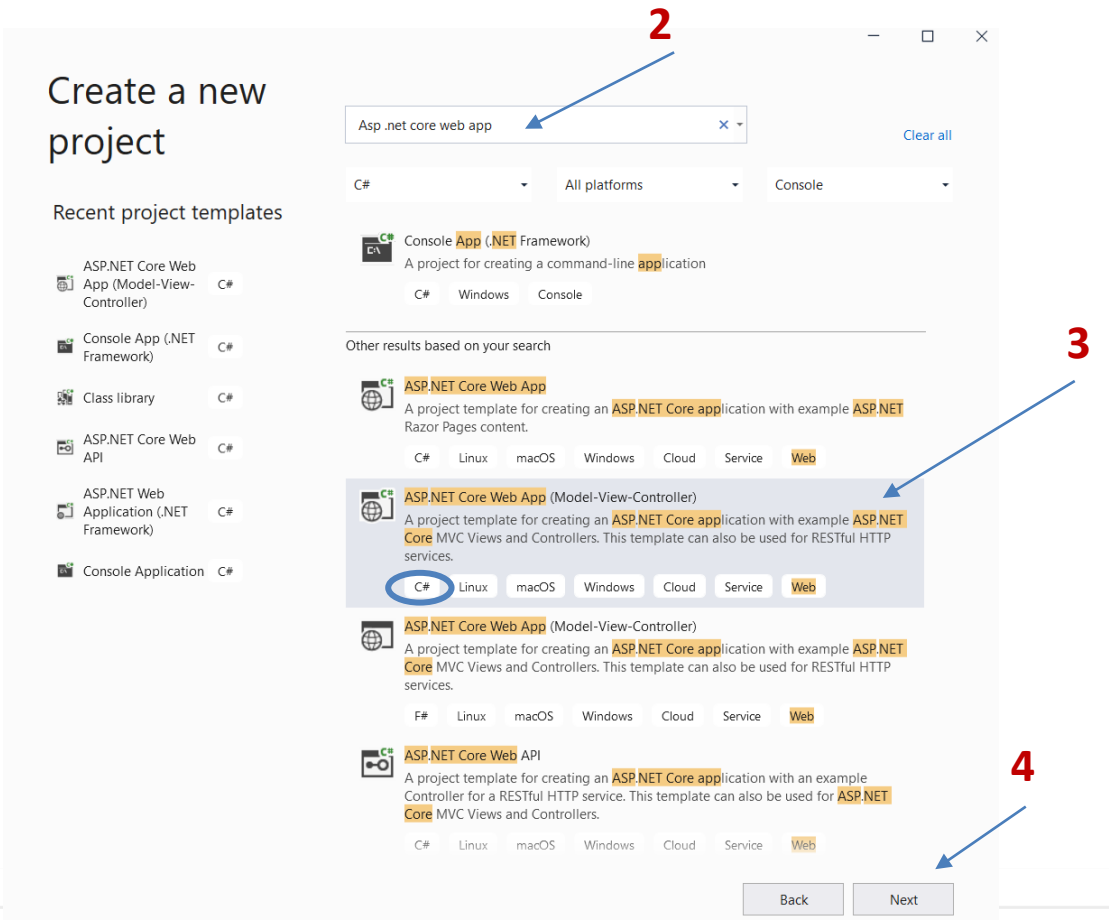
- Start, Visual Studio 2019 and select **Create a new project**.



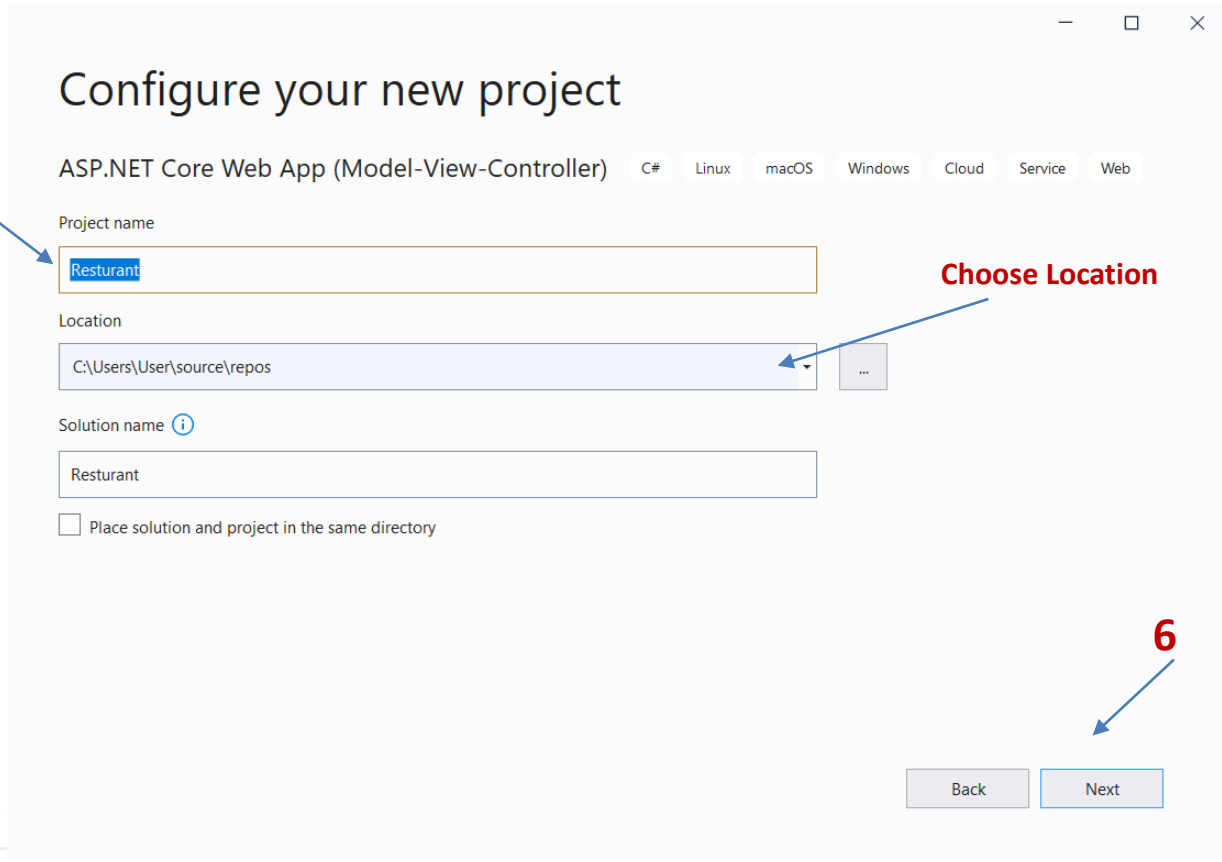
Create ASP.NET Core MVC Project

شركة تحالف الإمارات للحلول التقنية ذ.م.م.
TAHALUF AL EMARAT TECHNICAL SOLUTIONS L.L.C.

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

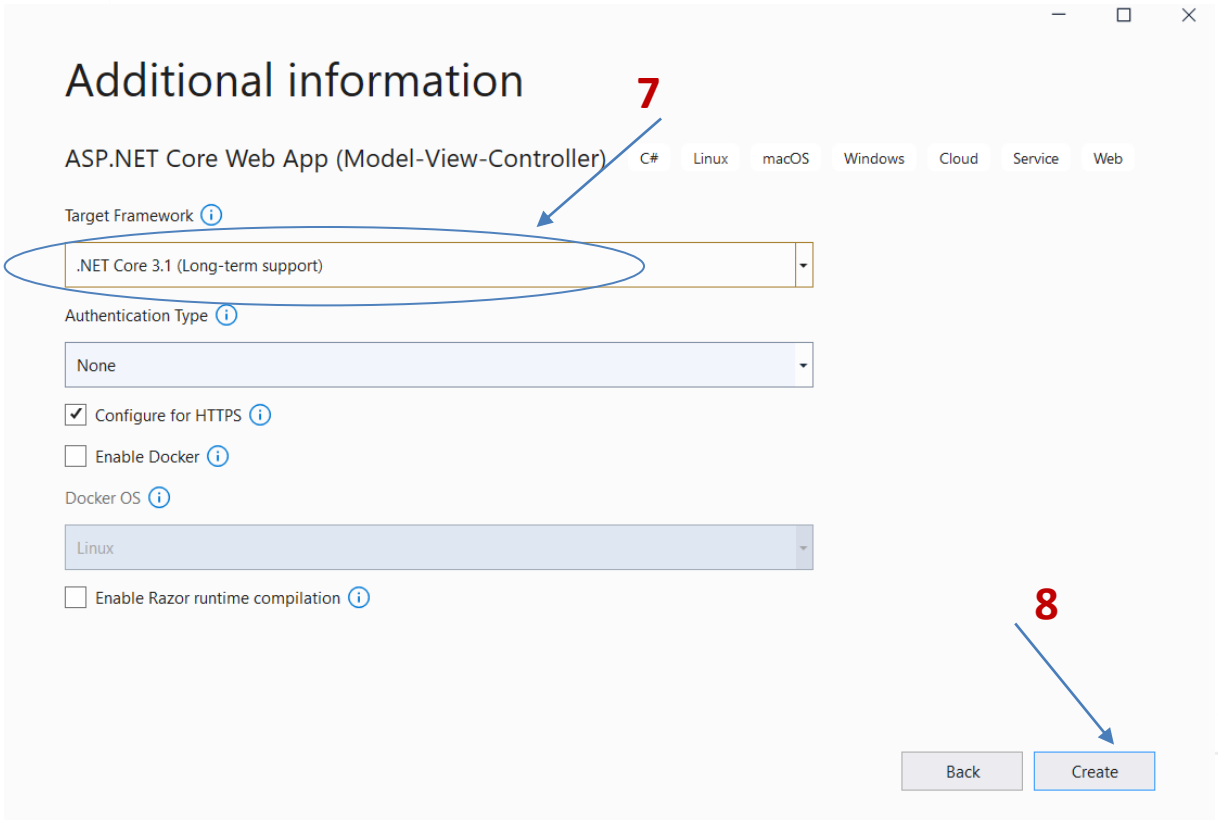


- Set Project Name {**Restaurant**}.

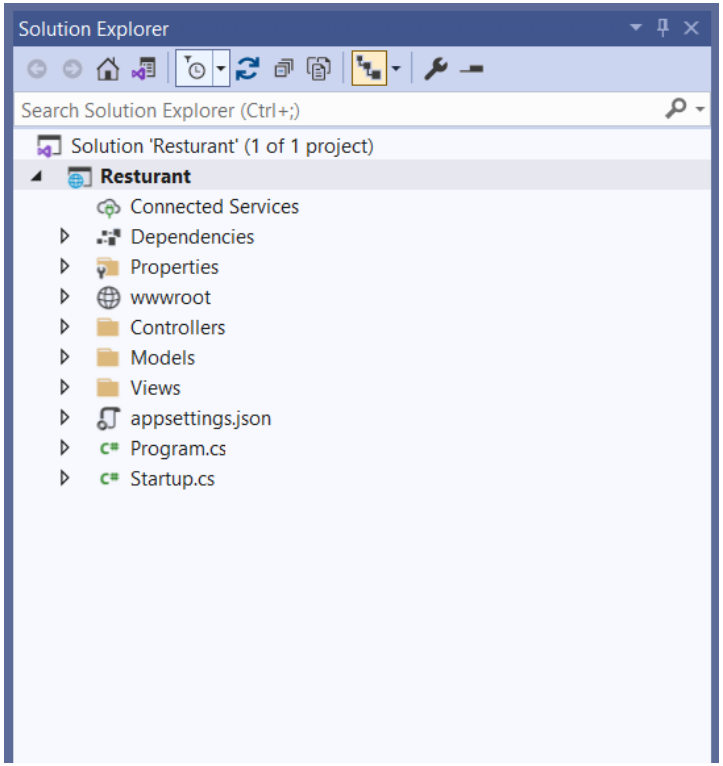


- Choose Target Framework 3.1.

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



- The project is created.



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

- **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.

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(3.0.0).
5. Microsoft.EntityFrameworkCore.Tools 5.0.11.

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

- **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.

- **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.

- **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.

- **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.

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

Task : (5 Marks)

Create a class diagram for the **Restaurant** database.