

(T10)討論 EfDbFirst、DisplayImage(圖片顯示)、CustomHtmlHelpers、StronglyTypedViews、PartialView

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(T10)討論 EfDbFirst、DisplayImage(圖片顯示)、CustomHtmlHelpers、StronglyTypedViews、PartialView

(T10-1)討論 EfDbFirst、DisplayImage(圖片顯示) (1. to 4.)

(T10-2)討論 CustomHtmlHelpers、StronglyTypedViews、PartialView (5. to 8.)

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0. Summary

=====

In this tutorial, we will discuss

- * AdoDotNetEntityDataModel
- * UpdateDatabase
- * Display Image
- * Custom Html Helpers
- * Using **@Html.Raw("HtmlString")** or using **new IHtmlString("HtmlString")** can disable automatic html encoding and return the markup.
- * Strongly Typed Views
- * Partial View
- * 我的老天鵝要更新現有資料庫和 EF! 別怕，有密技。客製化 HtmlHelper，PartailView 圖片顯示。
- * 老(乾)閩(爹)突然改變主要更改了資料庫結構!! 我的老天鵝，那要怎麼更改目前現有的 Entity Framework! 別怕，有密技。
- * 客製化 HtmlHelper。
- * PartailView 圖片顯示。

=====

Summary:

1.
//@Html.Partial("_Gamer", modelObj) V.S. { @Html.RenderPartial("_Gamer", modelObj); }
 - 1.1.
Using Partial() only if you need to assign the output to variable.
RenderPartial() writes output to output stream which provides better performance.
 - 1.2.
//@Html.Partial("_Gamer", modelObj)
Partial return MvcHtmlString.
 - 1.3.
//{ @Html.RenderPartial("_Gamer", modelObj); }
RenderPartial is a void method and writes output to output stream,
so you need { ... }

2.
Using **@Html.Raw("HtmlString")** or using **new IHtmlString("HtmlString")** can disable automatic html encoding and return the markup.

=====

1. MVC conventions

In MVC conventions,

1. Controllers must have the word "Controller" as the suffix and must extend "IController" interface.
2. A view must remain under "Views" folder.
3. If the view is for GamerController, then the view must remain under "Views/Gamer" folder.
4. In the "HomeController", when "Index" action "return View()", it will search the following files in order.
 - 4.1. ~/Views/Home/Index.aspx
 - 4.2. ~/Views/Home/Index.ascx
 - 4.3. ~/Views/Shared/Index.aspx

- 4.4. ~/Views/Shared/Index.ascx
- 4.5. ~/Views/Home/Index.cshtml
- 4.6. ~/Views/Home/Index.vbhtml
- 4.7. ~/Views/Shared/Index.cshtml
- 4.8. ~/Views/Shared/Index.vbhtml
- 5. By MVC convention, MVC will look for the view in the following locations
 - 5.1. Views/ControllerName
 - 5.2. Views/Shared
- 6. The extension name of view can be cshtml, vbhtml, aspx, or ascx.
- 7. Models can be anywhere, even can be in another project. However, it is better to put it in "Models" folder.
- 8. You may put Models in another project as business layer.
- 9. Shared folder stores shared views.
 - E.g. Master for aspx and Layout pages for cshtml

10. EditorTemplates and DisplayTemplates by MVC convention

10.1.

DisplayTemplates

10.1.1.

Views\Shared\DisplayTemplates\UrlToNewWindow.cshtml

Views\Gamer\DisplayTemplates\UrlToNewWindow.cshtml

UrlToNewWindow.cshtml is the DisplayTemplate which must under "DisplayTemplates" folder.

Views\Shared\DisplayTemplates\UrlToNewWindow.cshtml means

the template is available for all the views.

Views\Gamer\DisplayTemplates\UrlToNewWindow.cshtml means

the template is available for only the views of Gamer controller.

10.1.2.

Using DisplayTemplates

10.1.2.1.

In the Models/Gamer/GamerMetaData.cs

```
//[DataType(DataType.Url)]
```

```
//[UIHint("UrlToNewWindow")]
```

```
//public string ProfileUrl { get; set; }
```

[DataType(DataType.Url)] attribute will display a hyperlink.

[UIHint("UrlToNewWindow")] attribute specify the name of view DisplayTemplate

to display the property data.

In this case, it will look for "DisplayTemplates/UrlToNewWindow.cshtml"

under "Shared" folder or "Gamer" folder.

Use that view template to display the data of this property.

10.1.2.2.

```
//<a href="@ViewData.Model" target="_blank">@ViewData.Model</a>
```

In the Shared/DisplayTemplates/UrlToNewWindow.cshtml,

@ViewData.Model will take the Model data from the parent view.

In this case, it will return a profile url.

10.2.

EditorTemplates

10.2.1.

Views\Shared\EditorTemplates\DateTime.cshtml

Views\Gamer\EditorTemplates\DateTime.cshtml

DateTime.cshtml is the EditorTemplate which must under "EditorTemplates" folder.

Views\Shared\EditorTemplates\DateTime.cshtml means

the template is available for all the views.

Views\Gamer\EditorTemplates\DateTime.cshtml means
the template is available for only the views of Gamer controller.

10.2.2.

Using EditorTemplates

The EditorTemplate Name must match View Model property Type Name.

E.g. DateTime.ascx or DateTime.cshtml

10.2.2.1.

In the Models/Gamer/GamerMetaData.cs

```
////[DataType(DataType.Date)] //Views/Shared/EditorTemplates/DateTime.cshtml will not Work.
```

```
////[DisplayFormat(DataFormatString = "{0:dd/MM/yyyy hh:mm:ss tt}")]
```

```
//[DisplayFormat(DataFormatString = "{0:d}")]
```

```
//public Nullable<System.DateTime> DateOfBirth { get; set; }
```

The type is DateTime, so it will look for the EditorTemplate from

Views\Shared\EditorTemplates\DateTime.cshtml or

Views\Gamer\EditorTemplates\DateTime.cshtml

In this case, Views\Shared\EditorTemplates\DateTime.cshtml will be the EditorTemplate.

The View Model Property in Edit mode will use the EditorTemplate to display.

In this case,

```
//@model DateTime?
```

```
//@Html.TextBox("", (Model.HasValue ? Model.Value.ToString("yyyy/MM/dd") : string.Empty), new { @class =  
"date" })
```

So it will add the class="date" to the textbox input.

10.2.2.2.

In the Edit.cshtml

```
//<link href="~/Content/themes/base/jquery-ui.min.css" rel="stylesheet" />
```

```
//<link href="~/Content/bootstrap.css" rel="stylesheet" />
```

```
//<script src="~/Scripts/jquery-1.12.4.min.js"></script>
```

```
//<script src="~/Scripts/jquery-ui-1.12.1.min.js"></script>
```

```
//<script src="~/Scripts/bootstrap.min.js"></script>
```

...

```
//<script type="text/javascript">
```

```
// $(function () {
```

```
//     $("input:text.date").datepicker(
```

```
//     {
```

```
//         dateFormat: "yy/mm/dd"
```

```
//     });
```

```
// });
```

```
//</script>
```

11.

There are 2 categories of built-in templated helpers.

11.1.

Display Templates

11.1.1.

```
//@Html.DisplayFor(model => model.Name)
```

The view must have strongly typed view Model.

It can work with the complex type Model property.

It is similar to @Html.DisplayTextFor(model => model.GameHolder)

```
//@Html.DisplayTextFor(model => model.GameHolder)
```

model.GameHolder will return a Gamer object.

The Gamer class has [DisplayColumn("Name")] attribute,

so it will display Gamer Name property value
which is the full name of that gamer.

11.1.2.

```
//@Html.DisplayForModel()
```

The view must have strongly typed view Model.

It will display every property in view model
except the properties with [ScaffoldColumn(false)] attribute.

11.1.3.

@Html.Display helper does not need strongly typed view Mode.

```
//ViewData["GamerData"] = gamer;
```

```
//return View();
```

In the controller, we put the gamer object into ViewData["GamerData"]

"GamerData" in this case is the key of ViewData.

ViewData["GamerData"] contains that gamer object data,
so we don't have to use a view model.

```
//@Html.Display("GamerData")
```

In the view, we use @Html.Display("GamerData")

to retrieve the Gamer data from ViewData["GamerData"].

It will display everything
except the properties with [ScaffoldColumn(false)] attribute.

11.2.

Editor Templates

11.2.1.

```
//@Html.EditorFor(model => model.Name)
```

The view must have strongly typed view Model.

It will create a textbox for the property value input.

11.2.2.

```
//@Html.EditorForModel()
```

The view must have strongly typed view Model.

It will create textbox input for every property in view model
except the properties with [ScaffoldColumn(false)] attribute.

11.2.3.

@Html.Editor helper does not need strongly typed view Mode.

```
//ViewData["GamerData"] = gamer;
```

```
//return View();
```

In the controller, we put the gamer object into ViewData["GamerData"]

"GamerData" in this case is the key of ViewData.

ViewData["GamerData"] contains that gamer object data,
so we don't have to use a view model.

```
//@Html.Editor("GamerData")
```

In the view, we use @Html.Editor("GamerData")

to retrieve the Gamer data from ViewData["GamerData"].

It will create textbox input for every properties in ViewData["GamerData"]
except the properties with [ScaffoldColumn(false)] attribute.

However, we pressed submit button and call the [HttpPost] action

```
//public async Task<ActionResult>
```

```
EditThree(int id, string name, string gender, string city, DateTime? dateOfBirth, string emailAddress, int? score, string profileUrl, int? gameMoney, int? teamId)
```

OR

```
//public async Task<ActionResult>
```

```
EditThree(Gamer gamer)
```

Both ways can not retrieve the data because it is not strongly typed.

I don't suggest to use @Html.Editor helper

2. OnlineGame DB

2.1. TSQL

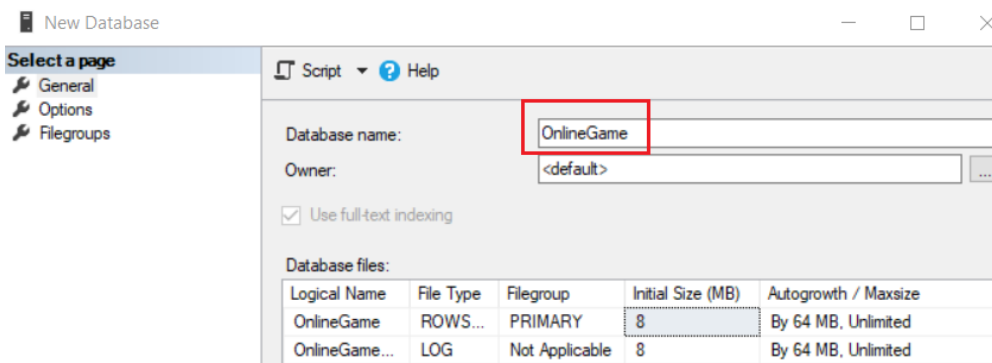
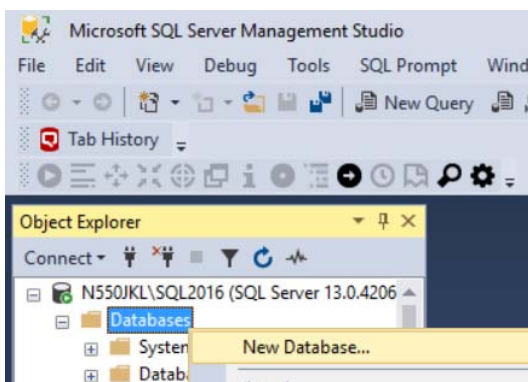
In SQL server Management Studio (SSMS)

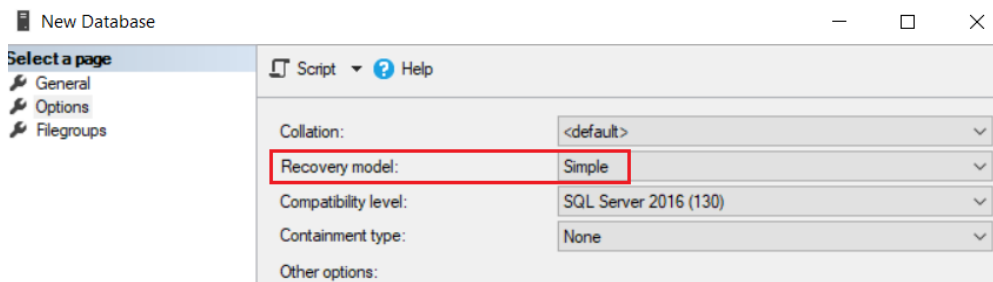
Database --> Right Click --> New Database -->

In General Tab -->

Name: **OnlineGame**

In options Tab --> Recovery model : **Simple**





```
--1. Drop if it exists
--Drop Table if it exists.
IF ( EXISTS ( SELECT      *
                FROM        INFORMATION_SCHEMA.TABLES
                WHERE        TABLE_NAME = 'Gamer' ) )

BEGIN
    TRUNCATE TABLE Gamer;
    DROP TABLE Gamer;

END;

GO -- Run the previous command and begins new batch
IF ( EXISTS ( SELECT      *
                FROM        INFORMATION_SCHEMA.TABLES
                WHERE        TABLE_NAME = 'Team' ) )

BEGIN
    TRUNCATE TABLE Team;
    DROP TABLE Team;

END;

GO -- Run the previous command and begins new batch
--Drop Stored Procedure if it exists.
--IF OBJECT_ID('spSearchGamer') IS NOT NULL
IF ( EXISTS ( SELECT      *
                FROM        INFORMATION_SCHEMA.ROUTINES
                WHERE        ROUTINE_TYPE = 'PROCEDURE'
                            AND LEFT(ROUTINE_NAME, 3) NOT IN ( 'sp_', 'xp_', 'ms_' )
                            AND SPECIFIC_NAME = 'spGetGamers' ) )

BEGIN
    DROP PROCEDURE spGetGamers;

END;

GO -- Run the previous command and begins new batch
IF ( EXISTS ( SELECT      *
                FROM        INFORMATION_SCHEMA.ROUTINES
                WHERE        ROUTINE_TYPE = 'PROCEDURE'
                            AND LEFT(ROUTINE_NAME, 3) NOT IN ( 'sp_', 'xp_', 'ms_' )
                            AND SPECIFIC_NAME = 'spAddGamer' ) )

BEGIN
    DROP PROCEDURE spAddGamer;

END;

GO -- Run the previous command and begins new batch
IF ( EXISTS ( SELECT      *
                FROM        INFORMATION_SCHEMA.ROUTINES
                WHERE        ROUTINE_TYPE = 'PROCEDURE'
                            AND LEFT(ROUTINE_NAME, 3) NOT IN ( 'sp_', 'xp_', 'ms_' )
                            AND SPECIFIC_NAME = 'spSaveGamer' ) )

BEGIN
```

```

        DROP PROCEDURE spSaveGamer;
    END;
GO -- Run the previous command and begins new batch
IF ( EXISTS ( SELECT      *
                FROM        INFORMATION_SCHEMA.ROUTINES
                WHERE        ROUTINE_TYPE = 'PROCEDURE'
                            AND LEFT(ROUTINE_NAME, 3) NOT IN ( 'sp_', 'xp_', 'ms_' )
                            AND SPECIFIC_NAME = 'spDeleteGamer' ) )

BEGIN
    DROP PROCEDURE spDeleteGamer;
END;
GO -- Run the previous command and begins new batch
--2. Create Table
CREATE TABLE Team
(
    Id INT PRIMARY KEY
        IDENTITY(1, 1)
        NOT NULL ,
    [Name] NVARCHAR(100) NULL
);
GO -- Run the previous command and begins new batch
CREATE TABLE Gamer
(
    Id INT PRIMARY KEY
        IDENTITY(1, 1)
        NOT NULL ,
    [Name] NVARCHAR(100) NULL ,
    Gender NVARCHAR(10) NULL ,
    City NVARCHAR(50) NULL ,
    DateOfBirth DATETIME NULL ,
    EmailAddress NVARCHAR(100) ,
    Score INT ,
    ProfileUrl NVARCHAR(100) ,
    GameMoney INT,
    TeamId INT FOREIGN KEY REFERENCES Team ( Id )
);
GO -- Run the previous command and begins new batch
--3. Insert Data
INSERT Team
VALUES ( N'Team1' );
INSERT Team
VALUES ( N'Team2' );
INSERT Team
VALUES ( N'Team3' );
GO -- Run the previous command and begins new batch
INSERT Gamer
VALUES ( N'Name01 ABB', N'Male', N'City01', '1979/4/28', '1@AAA.com', 3500,
        'https://ithandyguytutorial.blogspot.com.au/', 1000, 1 );
INSERT Gamer
VALUES ( N'Name02 CDDE', N'Female', N'City03', '1981/7/24', '2@BBB.com', 3500,
        'https://ithandyguytutorial.blogspot.com.au/', 1500, 2 );
INSERT Gamer
VALUES ( N'Name03 FIJK', N'Female', N'City01', '1984/12/5', '3@CCCC.com', 3500,
        'https://ithandyguytutorial.blogspot.com.au/', 4000, 3 );
INSERT Gamer

```



```

VALUES ( N'Name04 LMOPPQ', N'Male', N'City02', '1983/5/29', '4@DD.com', 3500,
        'https://ithandyguytutorial.blogspot.com.au/', 2500, 1 );
INSERT Gamer
VALUES ( N'Name05 QRSTT', N'Male', N'City01', '1979/6/20', '5@EEE.com', 3500,
        'https://ithandyguytutorial.blogspot.com.au/', 3500, 3 );
INSERT Gamer
VALUES ( N'Name06 TUVVX', N'Female', N'City03', '1984/5/15', '6@FF.com',
        3500, 'https://ithandyguytutorial.blogspot.com.au/', 2500, 3 );
INSERT Gamer
VALUES ( N'Name07 XYZZX', N'Female', N'City01', '1986/4/29', '7@GGGG.com',
        3500, 'https://ithandyguytutorial.blogspot.com.au/', 4550, 2 );
INSERT Gamer
VALUES ( N'Name08 ABCDE', N'Male', N'City02', '1985/7/28', '8@HH.com', 3500,
        'https://ithandyguytutorial.blogspot.com.au/', 3550, 1 );
INSERT Gamer
VALUES ( N'Name09 QRSTTUVXX', N'Male', N'City02', '1983/4/16', '9@IIII.com',
        3500, 'https://ithandyguytutorial.blogspot.com.au/', 2510, 1 );
GO -- Run the previous command and begins new batch
--4. SP
CREATE PROCEDURE spGetGamers
AS
    BEGIN
        SELECT *
        FROM Gamer;
    END;
GO -- Run the previous command and begins new batch
CREATE PROCEDURE spAddGamer
(
    @Name NVARCHAR(50) ,
    @Gender NVARCHAR(10) ,
    @City NVARCHAR(50) ,
    @DateOfBirth DateTime ,
    @EmailAddress NVARCHAR(100) ,
    @Score INT ,
    @ProfileUrl NVARCHAR(100) ,
    @GameMoney INT ,
    @TeamId INT
)
AS
    BEGIN
        INSERT INTO Gamer
        VALUES ( @Name, @Gender, @City, @DateOfBirth, @EmailAddress, @Score, @ProfileUrl, @GameMoney, @TeamId
    );
    END;
GO -- Run the previous command and begins new batch
CREATE PROCEDURE spSaveGamer
(
    @Id INT ,
    @Name NVARCHAR(50) ,
    @Gender NVARCHAR(10) ,
    @City NVARCHAR(50) ,
    @DateOfBirth DateTime ,
    @EmailAddress NVARCHAR(100) ,
    @Score INT ,
    @ProfileUrl NVARCHAR(100) ,

```

```

        @GameMoney INT,
        @TeamId INT
    )
AS
BEGIN
    UPDATE dbo.Gamer
    SET     Name = @Name ,
           Gender = @Gender ,
           City = @City ,
           DateOfBirth = @DateOfBirth ,
           EmailAddress = @EmailAddress ,
           Score = @Score ,
           ProfileUrl = @ProfileUrl ,
           GameMoney = @GameMoney ,

           TeamId = @TeamId
    WHERE   Id = @Id;
END;
GO -- Run the previous command and begins new batch
CREATE PROCEDURE spDeleteGamer ( @Id int )
AS
BEGIN
    DELETE FROM Gamer
    WHERE   Id = @Id;
END;
GO -- Run the previous command and begins new batch
--EXEC spGetGamers
--GO -- Run the previous command and begins new batch

```

2.2. Security login

In SQL server

Object Explorer --> Security --> Logins --> New Logins

-->

General Tab

Login Name :

Tester

Password:

1234

Default Database:

OnlineGame

-->

Server Roles Tab

Select

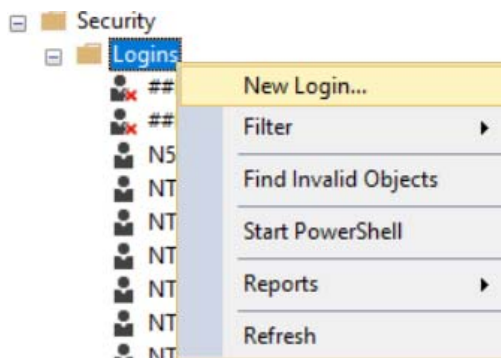
sysadmin

-->

User Mapping Tab

Select **OnlineGame**

Select every single role.



Login - New

Select a page

- General
- Server Roles
- User Mapping
- Securables
- Status

Connection

Server: N550JKL\SQL2016

Connection: N550JKL\pmp1

[View connection properties](#)

Progress

Ready

Script ? Help

Login name: Search...

☐ Windows authentication

☒ SQL Server authentication

Password:

Confirm password:

☐ Specify old password

Old password:

☒ Enforce password policy

☒ Enforce password expiration

☒ User must change password at next login

☐ Mapped to certificate

☐ Mapped to asymmetric key

☐ Map to Credential

Mapped Credentials

Credential	Provider
------------	----------

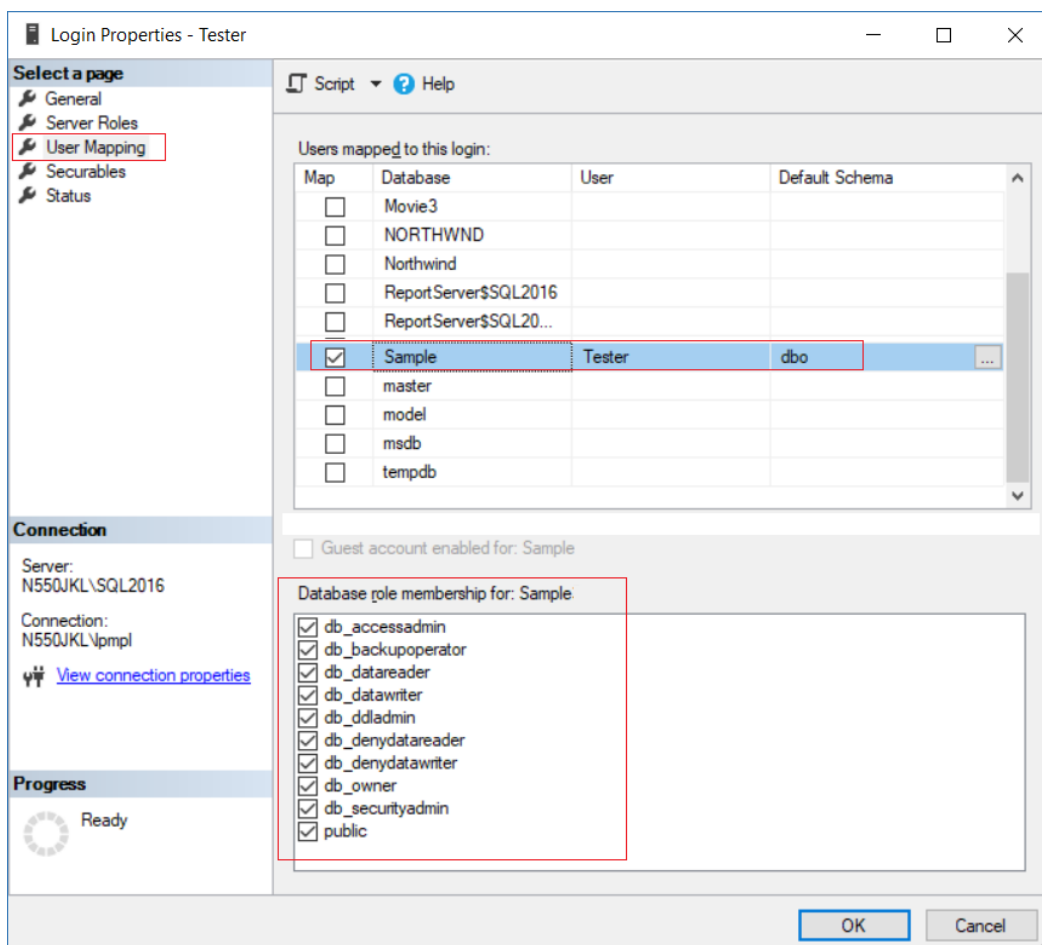
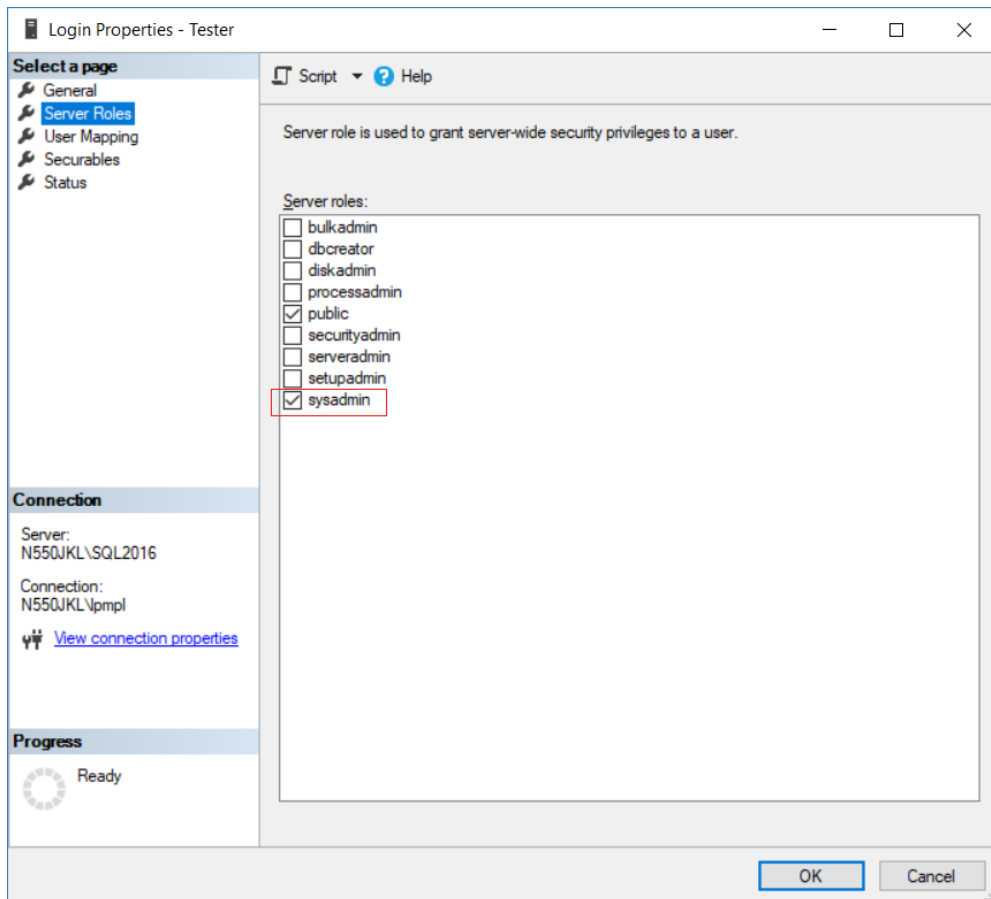
Add

Remove

Default database:

Default language:

OK Cancel



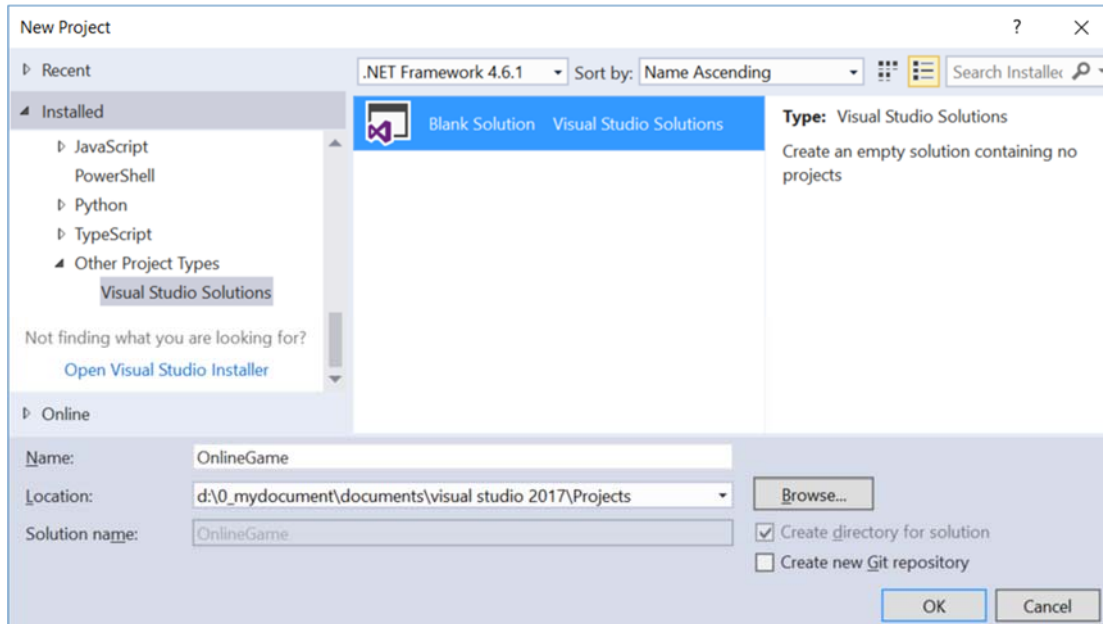
3. New Project - OnlineGame

File --> New --> Project... -->

Other Project Types --> Visual Studio Solutions --> Blank Solution

-->

Name: **OnlineGame**



3.1. New Project - OnlineGame.Web

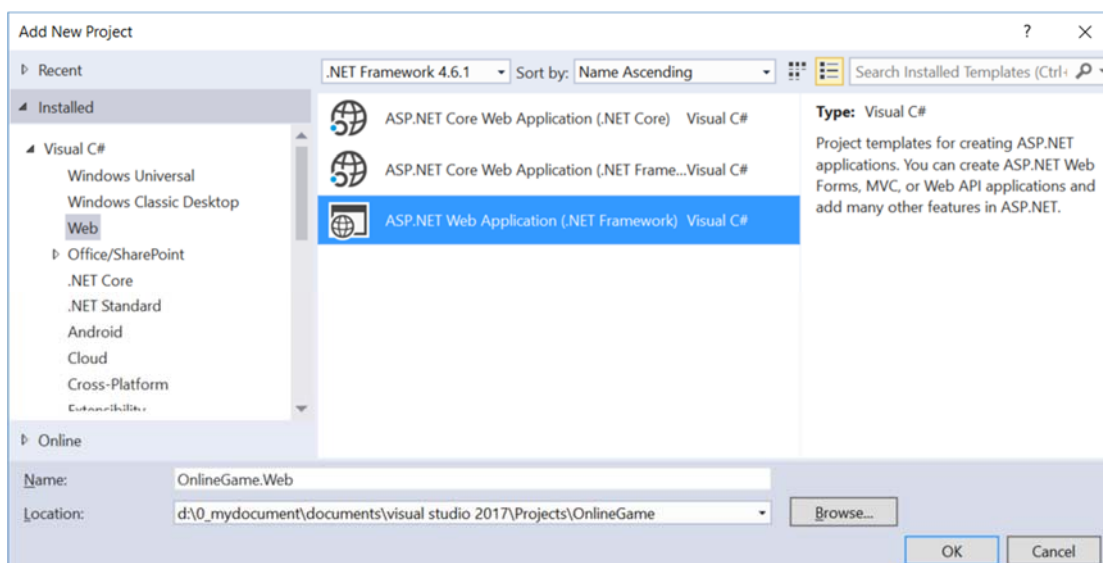
Solutions Name --> Add --> New Project -->

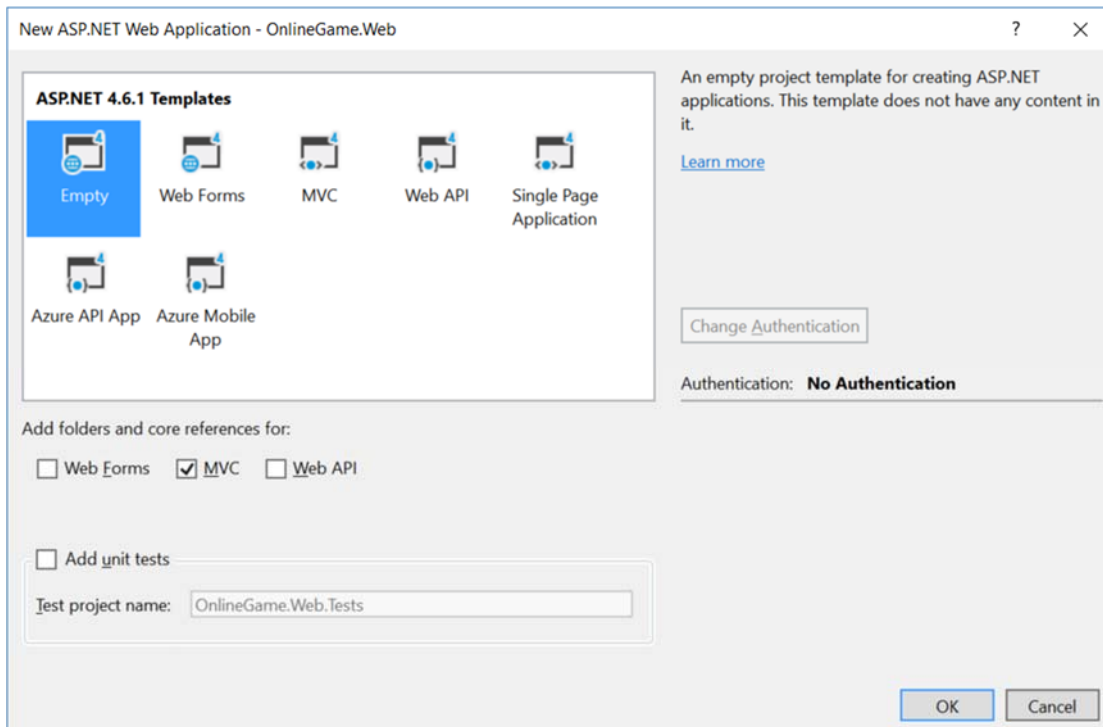
Visual C# --> Web --> [ASP.NET](#) Web Application (.Net Framework)

-->

Name: **OnlineGame.Web**

Empty --> Select "MVC" --> OK





3.1.1. Global.asax.cs

```
using System.Web.Mvc;
using System.Web.Routing;
namespace OnlineGame.Web
{
    public class MvcApplication : System.Web.HttpApplication
    {
        //Application_Start() is the magic start point of this application
        protected void Application_Start()
        {
            AreaRegistration.RegisterAllAreas();
            //1.
            //Register Route Configure in RouteConfig.cs
            //If you want to see route configuration,
            //you may find it in RouteConfig.cs
            //2.
            //System.Web.Routing.RouteCollection Routes { get; }
            //Gets a collection of objects that derive from the System.Web.Routing.RouteBase class.
            RouteConfig.RegisterRoutes(RouteTable.Routes);
        }
    }
}
```

3.1.2. App_Start/RouteConfig.cs

```
using System.Web.Mvc;
using System.Web.Routing;
namespace OnlineGame.Web
{
    public class RouteConfig
    {
        public static void RegisterRoutes(RouteCollection routes)
        {
            {
```

```

//Handle the Route of the axd request file.
//E.g. ASP.Net Tracing
routes.IgnoreRoute("{resource}.axd/{*pathInfo}");
//Handle the Route called "Default".
//The mapping URL is "{controller}/{action}/{id}"
//Set the default value of Controller, action, and id.
routes.MapRoute(
    name: "Default",
    url: "{controller}/{action}/{id}",
    defaults: new { controller = "Gamer", action = "Index", id = UrlParameter.Optional }
);
}
}
}

```

```

/*
1.
//routes.MapRoute(
//    name: "Default",
//    url: "{controller}/{action}/{id}",
//    defaults: new { controller = "Home", action = "Index", id = UrlParameter.Optional }
//);
1.1.

```

When a request comes in,
it's trying to do a pattern match based on
all the templates it sees in these mapped routes.
A route is some instructions for
how to take a URI coming into a request
and map it to some code,
normally a controller.

In this case,
look at defaults parameter,
when user request <http://localhost:PortNumber/>
IIS Express will run
HomeController Index action.
It will map to Controllers/HomeController.cs
and map to Index Method

1.2.
By convention in MVC.
All controllers will have Controller suffix.
This suffix is not required in the URL.
So, if you want to invoke Home controller,
you specify /Home and not /HomeController.

```

2.
//routes.IgnoreRoute("{resource}.axd/{*pathInfo}");
2.1.

```

Reference:

<https://stackoverflow.com/questions/9016650/what-is-routes-ignorerroutesresource-axd-pathinfo>

This line can handle the axd file request route,
E.g. trace.axd
.axd files don't exist physically.

[ASP.NET](#) uses URLs with .axd extensions
(ScriptResource.axd and WebResource.axd) internally,
and they are handled by an [HttpHandler](#).
Therefore, you should keep this rule,
to prevent [ASP.NET](#) MVC from trying to handle the request
instead of letting the dedicated [HttpHandler](#) do it.

2.2.
trace.axd

Reference:

<https://msdn.microsoft.com/en-us/library/wwh16c6c.aspx>

trace.axd trace details for a specific request.

If you want to enable trace.axd,
then you have to go to Web.config

```
Add <trace enabled="true" pageOutput="false"/> under <system.web>
Then run the project, type the following URL
http://localhost/OnlineGame.Web/trace.axd
This will return ASP.NET trace, trace.axd.
If you do not have
// routes.IgnoreRoute("{resource}.axd/{*pathInfo}");
then you can not enable the trace.axd.
*/
```

3.2. ADO.Net Entity Data Model - Entity Framework

In Visual Studio 2017

Models folder --> Right Click --> Add --> New Item

--> Visual C# --> Data --> [ADO.Net](#) Entity Data Model

Name:

OnlineGameDataModel

-->

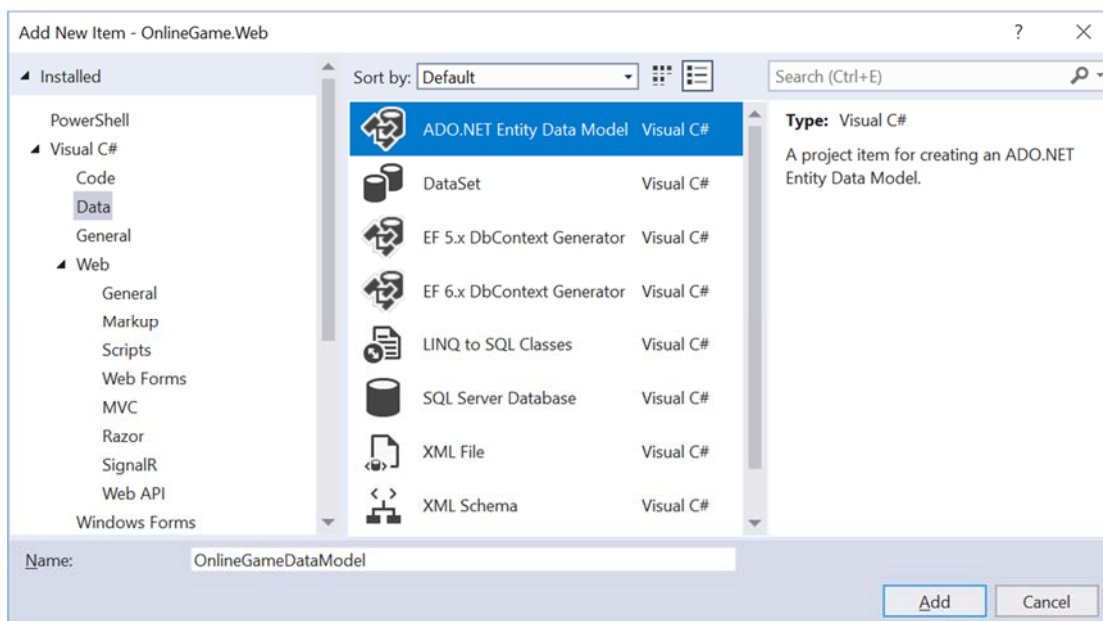
EF Designer from database

....

-->

Save Connection settings in Web.Config as:

OnlineGameContext



**Choose Model Contents****What should the model contain?**

EF Designer
from
database



Empty EF
Designer
model



Empty Code
First model



Code First
from
database

Creates a model in the EF Designer based on an existing database. You can choose the database connection, settings for the model, and database objects to include in the model. The classes your application will interact with are generated from the model.

< Previous

Next >

Finish

Cancel

**Choose Your Data Connection**

Which data connection should your application use to connect to the database?

New Connection...

This connection string appears to contain sensitive data (for example, a password) that is required to connect to the database. Storing sensitive data in the connection string can be a security risk. Do you want to include this sensitive data in the connection string?

- ☐ No, exclude sensitive data from the connection string. I will set it in my application code.
- ☐ Yes, include the sensitive data in the connection string.

Connection string:

☒ Save connection settings in Web.Config as:

< Previous

Next >

Finish

Cancel

Enter information to connect to the selected data source or click "Change" to choose a different data source and/or provider.

Data source:

Microsoft SQL Server (SqlClient)

Change...

Server name:

N550JKL\SQL2016

Refresh

Log on to the server

Authentication: SQL Server Authentication

User name: Tester

Password: ●●●●

☒ Save my password

Microsoft Visual Studio



Test connection succeeded.

OK

Connect to a database

☒ Select or enter a database name:

OnlineGame

☐ Attach a database file:

Browse...

Advanced...

Test Connection

OK

Cancel

**Choose Your Data Connection****Which data connection should your application use to connect to the database?**

n550jkl\sql2016.OnlineGame.dbo



New Connection...

This connection string appears to contain sensitive data (for example, a password) that is required to connect to the database. Storing sensitive data in the connection string can be a security risk. Do you want to include this sensitive data in the connection string?

- ☐ No, exclude sensitive data from the connection string. I will set it in my application code.
- ☒ Yes, include the sensitive data in the connection string.

Connection string:

```
metadata=res://*/Models.OnlineGameDataModel.csdl|
res://*/Models.OnlineGameDataModel.ssdl|
res://*/Models.OnlineGameDataModel.msl;provider=System.Data.SqlClient;provider connection
string="data source=N550JKL\SQL2016;initial catalog=OnlineGame;persist security info=True;user
id=Tester;password=*****;MultipleActiveResultSets=True;App=EntityFramework"
```

☒ Save connection settings in Web.Config as:

OnlineGameContext

< Previous

Next >

Finish

Cancel

**Choose Your Version****Which version of Entity Framework do you want to use?**

- ☒ Entity Framework 6.x
☐ Entity Framework 5.0

i It is also possible to install and use other versions of Entity Framework.
[Learn more about this](#)


< Previous

Next >

Finish


Cancel


Entity Data Model Wizard







Choose Your Database Objects and Settings


Which database objects do you want to include in your model?








☒  Tables

☒  dbo

- ☒  Gamer
- ☒  Team
- ☐  sysdiagrams

☐  Views

☒  Stored Procedures and Functions

- ☒  dbo
 - ☐  fn_diagramobjects
 - ☒  spAddGamer
 - ☒  spDeleteGamer
 - ☒  spGetGamers
 - ☒  spSaveGamer
 - ☐  sp_alterdiagram

☒ Pluralize or singularize generated object names

☒ Include foreign key columns in the model

☒ Import selected stored procedures and functions into the entity model

Model Namespace:

OnlineGameModel

< Previous

Next >

Finish

Cancel

Security Warning

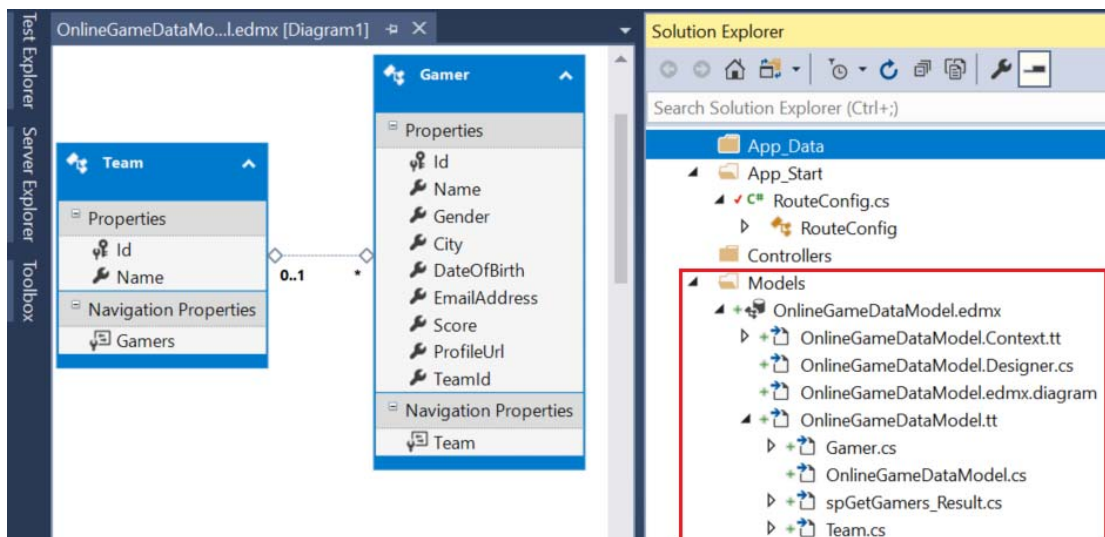
Running this text template can potentially harm your computer. Do not run it if you obtained it from an untrusted source.

Click OK to run the template.
Click Cancel to stop the process.

☐ Do not show this message again

OK

Cancel



3.3. Update Database

[illegible]

```

BEGIN
    DROP PROCEDURE spAddGamer;
END;
GO -- Run the previous command and begins new batch
IF ( EXISTS ( SELECT      *
                FROM        INFORMATION_SCHEMA.ROUTINES
                WHERE        ROUTINE_TYPE = 'PROCEDURE'
                            AND LEFT(ROUTINE_NAME, 3) NOT IN ( 'sp_', 'xp_', 'ms_' )
                            AND SPECIFIC_NAME = 'spSaveGamer' ) )

BEGIN
    DROP PROCEDURE spSaveGamer;
END;
GO -- Run the previous command and begins new batch
IF ( EXISTS ( SELECT      *
                FROM        INFORMATION_SCHEMA.ROUTINES
                WHERE        ROUTINE_TYPE = 'PROCEDURE'
                            AND LEFT(ROUTINE_NAME, 3) NOT IN ( 'sp_', 'xp_', 'ms_' )
                            AND SPECIFIC_NAME = 'spDeleteGamer' ) )

BEGIN
    DROP PROCEDURE spDeleteGamer;
END;
GO -- Run the previous command and begins new batch
--2. Create Table
CREATE TABLE Team
(
    Id INT PRIMARY KEY
        IDENTITY(1, 1)
        NOT NULL ,
    [Name] NVARCHAR(100) NULL
);
GO -- Run the previous command and begins new batch
CREATE TABLE Gamer
(
    Id INT PRIMARY KEY
        IDENTITY(1, 1)
        NOT NULL ,
    [Name] NVARCHAR(100) NULL ,
    Gender NVARCHAR(10) NULL ,
    City NVARCHAR(50) NULL ,
    DateOfBirth DATETIME NULL ,
    EmailAddress NVARCHAR(100) ,
    Score INT ,
    ProfileUrl NVARCHAR(100) ,
    GameMoney INT ,
    RolePhoto NVARCHAR(100) ,
    RolePhotoAltText NVARCHAR(100) ,
    TeamId INT FOREIGN KEY REFERENCES Team ( Id )
);
GO -- Run the previous command and begins new batch
--3. Insert Data
INSERT Team
VALUES ( N'Team1' );
INSERT Team
VALUES ( N'Team2' );

```



```

INSERT Team
VALUES ( N'Team3' );

GO -- Run the previous command and begins new batch

INSERT Gamer
VALUES ( N'Name01 ABB', N'Male', N'City01', '1979/4/28', '1@AAA.com', 3500,
        'https://ithandyguytuttorial.blogspot.com.au/', 1000,
        '~/Photos/Name01.png', 'Name01RolePhoto', 1 );

INSERT Gamer
VALUES ( N'Name02 CDDE', N'Female', N'City03', '1981/7/24', '2@BBB.com', 3500,
        'https://ithandyguytuttorial.blogspot.com.au/', 1500,
        '~/Photos/Name02.png', 'Name02RolePhoto', 2 );

INSERT Gamer
VALUES ( N'Name03 FIJK', N'Female', N'City01', '1984/12/5', '3@CCCC.com',
        3500, 'https://ithandyguytuttorial.blogspot.com.au/', 4000,
        '~/Photos/Name03.png', 'Name03RolePhoto', 3 );

INSERT Gamer
VALUES ( N'Name04 LMOPPQ', N'Male', N'City02', '1983/5/29', '4@DD.com', 3500,
        'https://ithandyguytuttorial.blogspot.com.au/', 2500,
        '~/Photos/Name04.png', 'Name04RolePhoto', 1 );

INSERT Gamer
VALUES ( N'Name05 QRSTT', N'Male', N'City01', '1979/6/20', '5@EEE.com', 3500,
        'https://ithandyguytuttorial.blogspot.com.au/', 3500,
        '~/Photos/Name05.png', 'Name05RolePhoto', 3 );

INSERT Gamer
VALUES ( N'Name06 TUVVX', N'Female', N'City03', '1984/5/15', '6@FF.com', 3500,
        'https://ithandyguytuttorial.blogspot.com.au/', 2500,
        '~/Photos/Name06.png', 'Name06RolePhoto', 3 );

INSERT Gamer
VALUES ( N'Name07 XYZZXX', N'Female', N'City01', '1986/4/29', '7@GGGG.com',
        3500, 'https://ithandyguytuttorial.blogspot.com.au/', 4550,
        '~/Photos/Name07.png', 'Name07RolePhoto', 2 );

INSERT Gamer
VALUES ( N'Name08 ABBCDE', N'Male', N'City02', '1985/7/28', '8@HH.com', 3500,
        'https://ithandyguytuttorial.blogspot.com.au/', 3550,
        '~/Photos/Name08.png', 'Name08RolePhoto', 1 );

INSERT Gamer
VALUES ( N'Name09 QRSTTUVXX', N'Male', N'City02', '1983/4/16', '9@IIII.com',
        3500, 'https://ithandyguytuttorial.blogspot.com.au/', 2510,
        '~/Photos/Name09.png', 'Name09RolePhoto', 1 );

GO -- Run the previous command and begins new batch
--4. SP

CREATE PROCEDURE spGetGamers
AS
BEGIN
    SELECT *
    FROM Gamer;
END;

GO -- Run the previous command and begins new batch

CREATE PROCEDURE spAddGamer
(
    @Name NVARCHAR(50) ,
    @Gender NVARCHAR(10) ,
    @City NVARCHAR(50) ,
    @DateOfBirth DateTime ,
    @EmailAddress NVARCHAR(100) ,

```

```

        @Score INT ,
        @ProfileUrl NVARCHAR(100) ,
        @GameMoney INT ,
        @TeamId INT
    )
AS
BEGIN
    INSERT INTO Gamer
    VALUES ( @Name, @Gender, @City, @DateOfBirth, @EmailAddress, @Score,
              @ProfileUrl, @GameMoney, @TeamId );

END;
GO -- Run the previous command and begins new batch
CREATE PROCEDURE spSaveGamer
(
    @Id INT ,
    @Name NVARCHAR(50) ,
    @Gender NVARCHAR(10) ,
    @City NVARCHAR(50) ,
    @DateOfBirth DateTime ,
    @EmailAddress NVARCHAR(100) ,
    @Score INT ,
    @ProfileUrl NVARCHAR(100) ,
    @GameMoney INT ,
    @TeamId INT
)
AS
BEGIN
    UPDATE dbo.Gamer
    SET     Name = @Name ,
           Gender = @Gender ,
           City = @City ,
           DateOfBirth = @DateOfBirth ,
           EmailAddress = @EmailAddress ,
           Score = @Score ,
           ProfileUrl = @ProfileUrl ,
           GameMoney = @GameMoney ,
           TeamId = @TeamId
    WHERE   Id = @Id;

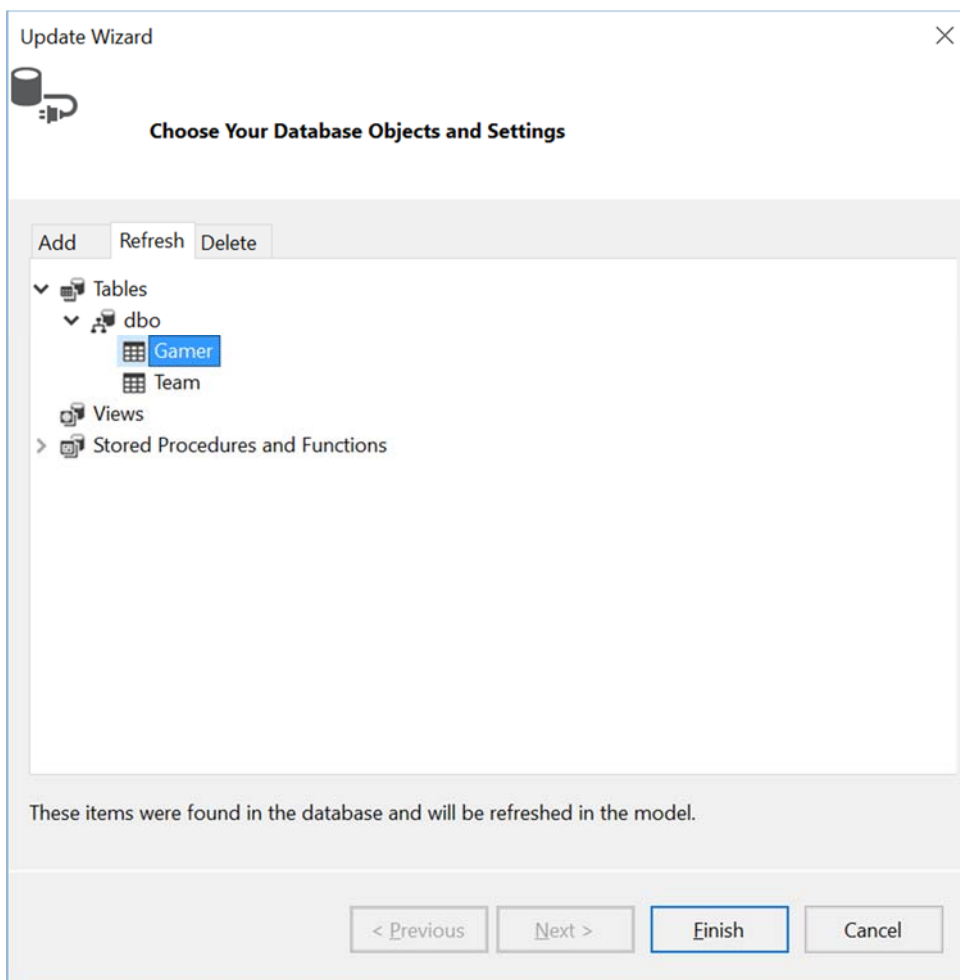
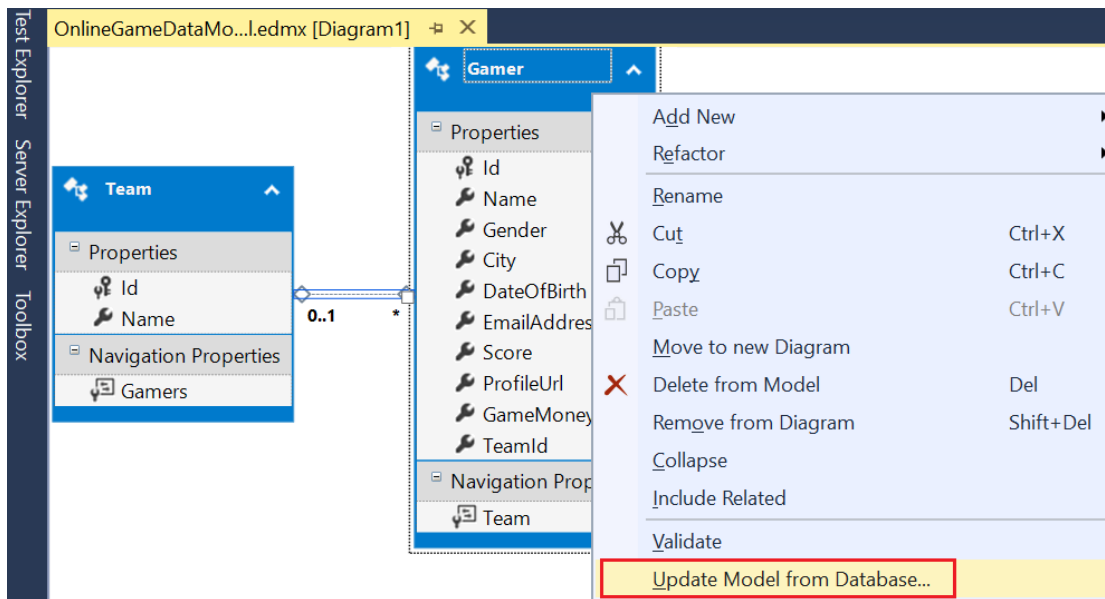
END;
GO -- Run the previous command and begins new batch
CREATE PROCEDURE spDeleteGamer ( @Id int )
AS
BEGIN
    DELETE FROM Gamer
    WHERE   Id = @Id;

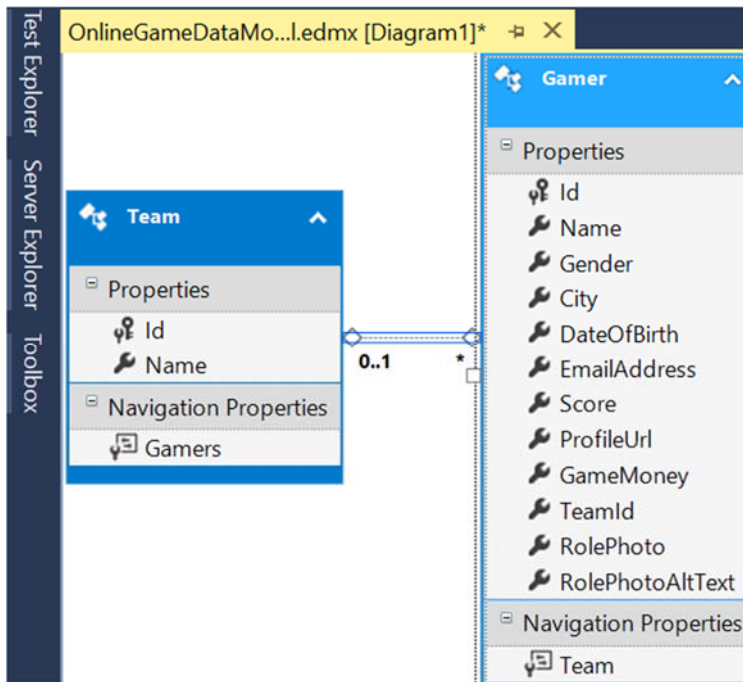
END;
GO -- Run the previous command and begins new batch
--EXEC spGetGamers
--GO -- Run the previous command and begins new batch

```

3.4. Update Entity Framework

In Edmx,
Object --> Right Click --> Update Model from Database -->



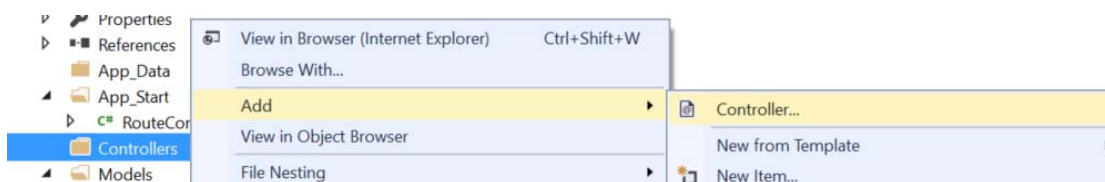


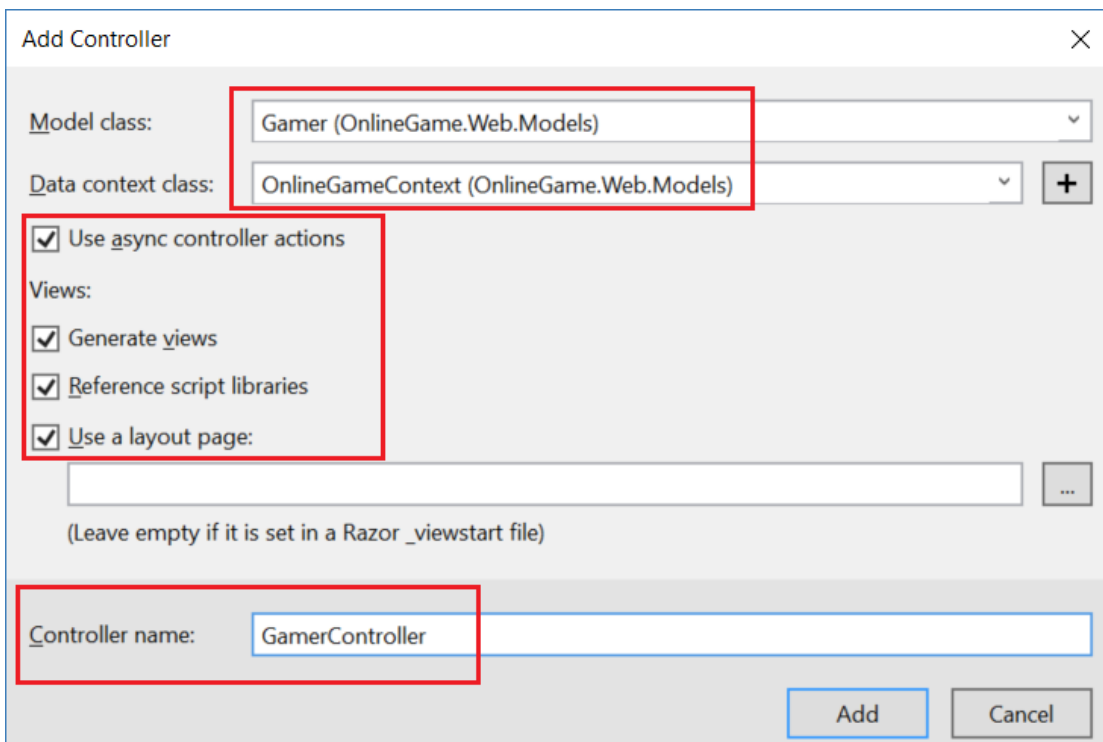
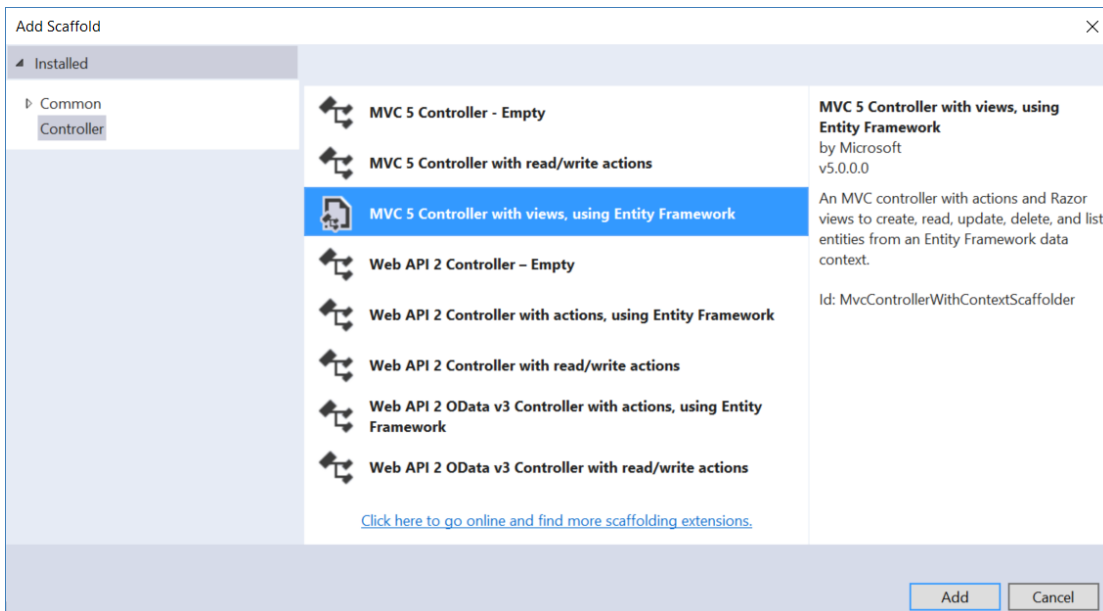
4. OnlineGame.Web

4.1. Controllers/GamersController.cs

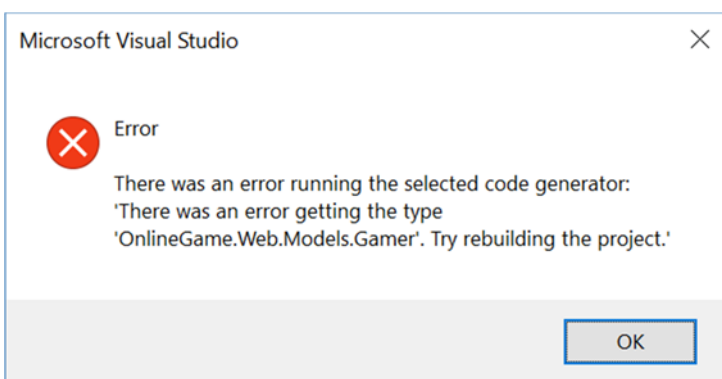
Controllers --> Right click --> Add --> Controller
-->

MVC 5 Controller with views, using Entity Framework

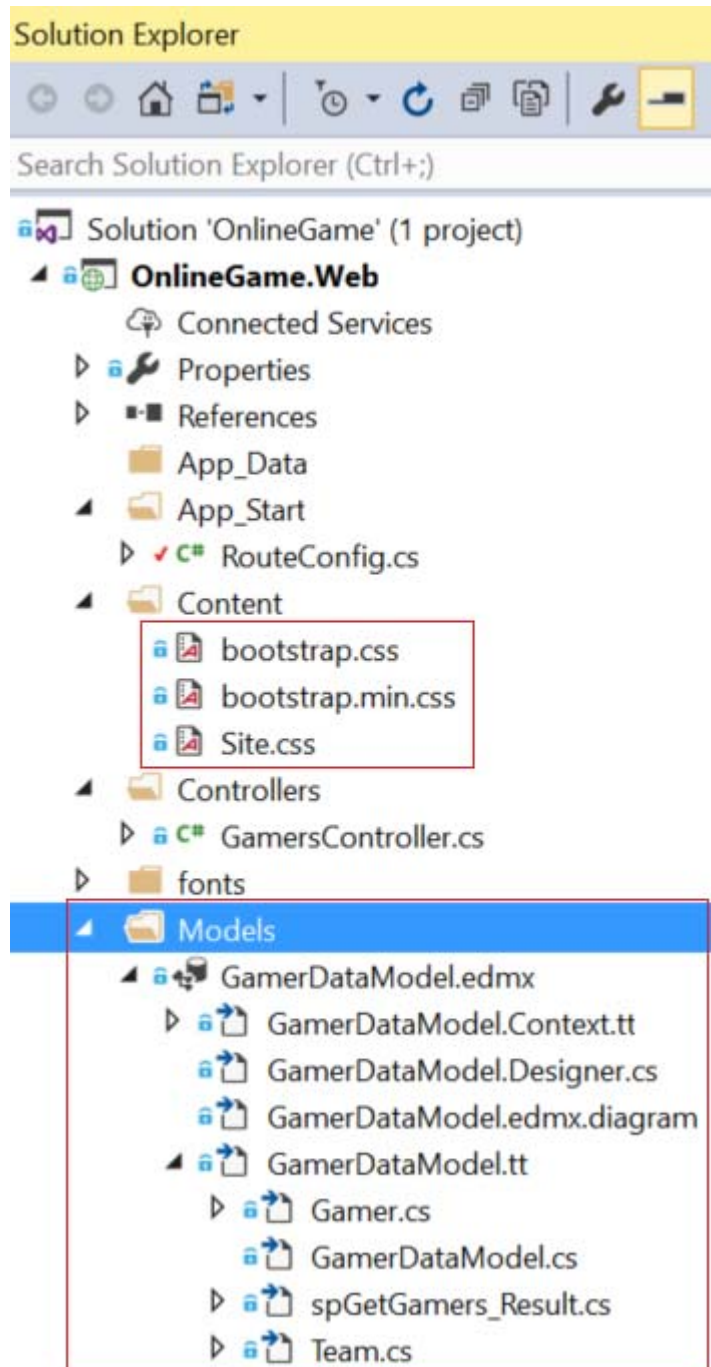




If you see the following error message, then you have to re-build solution before you create the controller.



It will automatically generate the controller, views, and several javascript and css files.



- Scripts
 - bootstrap.js
 - bootstrap.min.js
 - jquery-1.10.2.intellisense.js
 - jquery-1.10.2.js
 - jquery-1.10.2.min.js
 - jquery-1.10.2.min.map
 - jquery.validate-vsdoc.js
 - jquery.validate.js
 - jquery.validate.min.js
 - jquery.validate.unobtrusive.js
 - jquery.validate.unobtrusive.min.js
 - modernizr-2.6.2.js

- Views
 - Gamer
 - ✓[@] Create.cshtml
 - [@] Delete.cshtml
 - [@] Details.cshtml
 - ✓[@] Edit.cshtml
 - [@] Index.cshtml
 - Shared
 - [@] _Layout.cshtml
 - _ViewStart.cshtml
 - web.config
- Global.asax
 - Global.asax.cs
- packages.config
- Web.config

Properties Solution Explorer Team Explorer

Index

[Create Now](#)

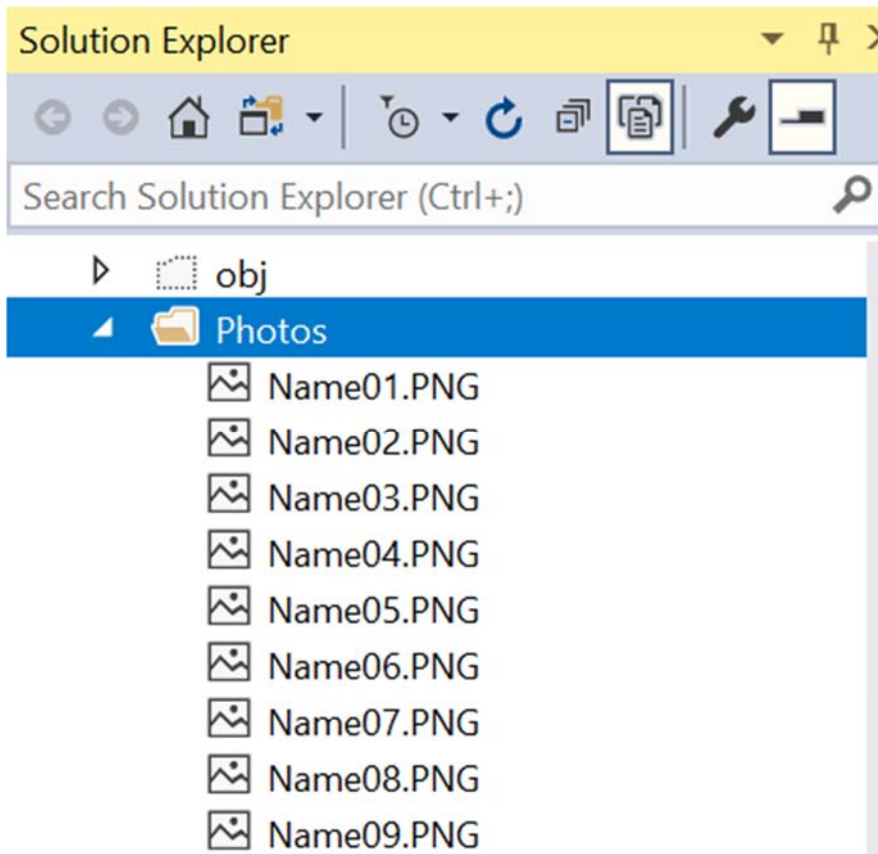
Name	Gender	City	DateOfBirth	EmailAddress	Score	ProfileUrl	GameMoney	Name
Name01 ABB	Male	City01	28/04/1979 12:00:00 AM	1@AAA.com	3500	https://ithandyguytutorial.blogspot.com.au/	1000	Team1 Edit Details Delete
Name02 CDDE	Female	City03	24/07/1981 12:00:00 AM	2@BBB.com	3500	https://ithandyguytutorial.blogspot.com.au/	1500	Team2 Edit Details Delete
Name03 FIJK	Female	City01	5/12/1984 12:00:00 AM	3@CCCC.com	3500	https://ithandyguytutorial.blogspot.com.au/	4000	Team3 Edit Details Delete
Name04 LMOPQ	Male	City02	29/05/1983 12:00:00 AM	4@DD.com	3500	https://ithandyguytutorial.blogspot.com.au/	2500	Team1 Edit Details Delete
Name05 QRSTT	Male	City01	20/06/1979 12:00:00 AM	5@EEE.com	3500	https://ithandyguytutorial.blogspot.com.au/	3500	Team3 Edit Details Delete
Name06 TUVVX	Female	City03	15/05/1984 12:00:00 AM	6@FF.com	3500	https://ithandyguytutorial.blogspot.com.au/	2500	Team3 Edit Details Delete
Name07 XYZZXX	Female	City01	29/04/1986 12:00:00 AM	7@GGGG.com	3500	https://ithandyguytutorial.blogspot.com.au/	4550	Team2 Edit Details Delete
Name08 ABCDE	Male	City02	28/07/1985 12:00:00 AM	8@HH.com	3500	https://ithandyguytutorial.blogspot.com.au/	3550	Team1 Edit Details Delete
Name09 QRSTTUVVX	Male	City02	16/04/1983 12:00:00 AM	9@III.com	3500	https://ithandyguytutorial.blogspot.com.au/	2510	Team1 Edit Details Delete

4.2. web.config

```
Web.config  X  Gamer.cs
4  https://go.microsoft.com/fwlink/?LinkId=301880
5  -->
6  <configuration>
7  <configSections>
8  <!-- For more information on Entity Framework configuration, visit http://go.microsoft.com/
   fwlink/?LinkId=237468 -->
9  <section name="entityFramework"
   type="System.Data.Entity.Internal.ConfigFile.EntityFrameworkSection, EntityFramework,
   Version=6.0.0.0, Culture=neutral, PublicKeyToken=b77a5c561934e089" requirePermission="false" />
10 </configSections>
11 <appSettings>
12 <add key="webpages:Version" value="3.0.0.0" />
13 <add key="webpages:Enabled" value="false" />
14 <add key="ClientValidationEnabled" value="true" />
15 <add key="UnobtrusiveJavaScriptEnabled" value="true" />
16 </appSettings>
17 <system.web>
18 <globalization culture="en-au"/>
19 <compilation debug="true" targetFramework="4.6.1" />
20 <httpRuntime targetFramework="4.6.1" />
21 </system.web>
22 <runtime>
```

```
<system.web>
  <globalization culture="en-au"/>
```

4.3. Add Photos



4.4. Add Photos

```
@model OnlineGame.Web.Models.Gamer
@{
    ViewBag.Title = "Details";
}
<h2>Details</h2>
<div>
    <h4>Gamer</h4>
    <hr />
    <dl class="dl-horizontal">
        <dt>
            @Html.DisplayNameFor(model => model.Name)
        </dt>
        <dd>
            @Html.DisplayFor(model => model.Name)
        </dd>
        <dt>
            @Html.DisplayNameFor(model => model.Gender)
        </dt>
        <dd>
            @Html.DisplayFor(model => model.Gender)
        </dd>
        <dt>
            @Html.DisplayNameFor(model => model.City)
        </dt>
        <dd>
            @Html.DisplayFor(model => model.City)
        </dd>
    </dl>
</div>
```

```

</dd>
<dt>
    @Html.DisplayNameFor(model => model.DateOfBirth)
</dt>
<dd>
    @Html.DisplayFor(model => model.DateOfBirth)
</dd>
<dt>
    @Html.DisplayNameFor(model => model.EmailAddress)
</dt>
<dd>
    @Html.DisplayFor(model => model.EmailAddress)
</dd>
<dt>
    @Html.DisplayNameFor(model => model.Score)
</dt>
<dd>
    @Html.DisplayFor(model => model.Score)
</dd>
<dt>
    @Html.DisplayNameFor(model => model.ProfileUrl)
</dt>
<dd>
    @Html.DisplayFor(model => model.ProfileUrl)
</dd>
<dt>
    @Html.DisplayNameFor(model => model.GameMoney)
</dt>
<dd>
    @Html.DisplayFor(model => model.GameMoney)
</dd>
<dt>
    @Html.DisplayNameFor(model => model.RolePhoto)
</dt>
<dd>
    @Html.DisplayFor(model => model.RolePhoto)
</dd>
<dt>
    @Html.DisplayNameFor(model => model.RolePhotoAltText)
</dt>
<dd>
    @Html.DisplayFor(model => model.RolePhotoAltText)
</dd>
<dt>
    @Html.DisplayNameFor(model => model.RolePhoto)
</dt>
<dd>
    
</dd>

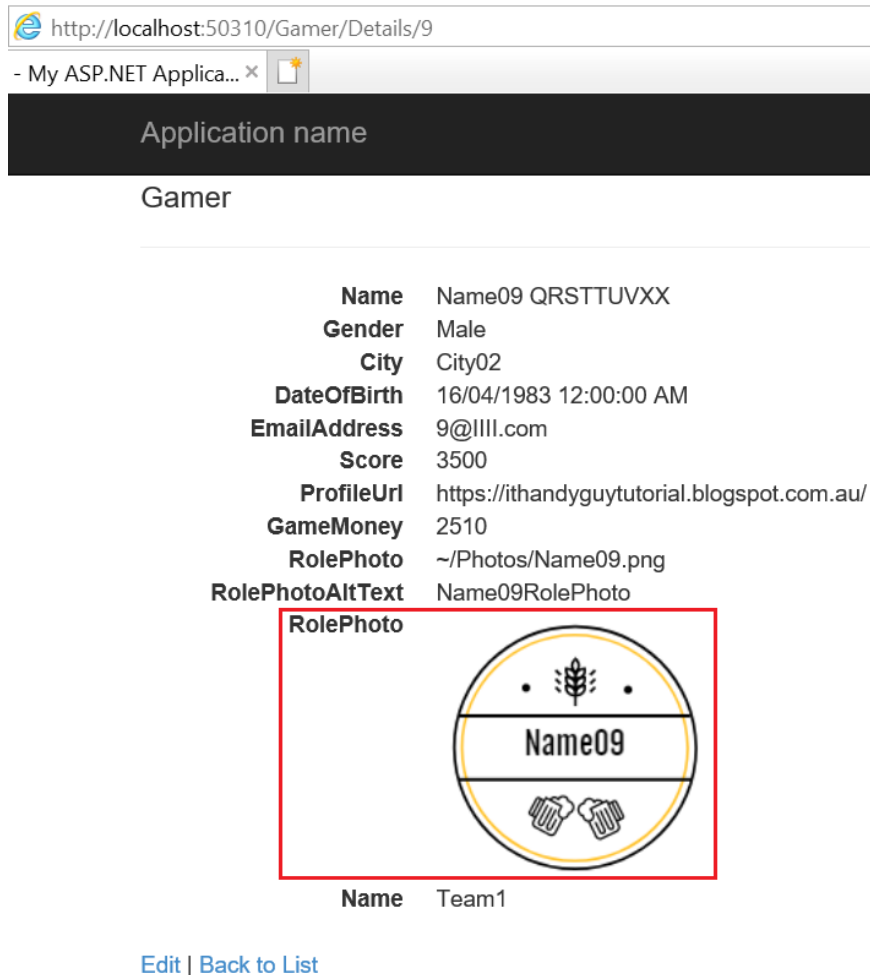
<dt>
    @Html.DisplayNameFor(model => model.Team.Name)
</dt>

```

```

        <dd>
            @Html.DisplayFor(model => model.Team.Name)
        </dd>
    </dl>
</div>
<p>
    @Html.ActionLink("Edit", "Edit", new { id = Model.Id }) |
    @Html.ActionLink("Back to List", "Index")
</p>

```



5. OnlineGame.Web

5.1. CustomHtmlHelper/CustomHtmlHelper.cs

```

using System.Web;
using System.Web.Mvc;
namespace OnlineGame.Web.CustomHtmlHelper
{

```

```

public static class CustomHtmlHelper
{
    public static IHtmlString Image(this HtmlHelper customHtmlHelper, string src, string alt)
    {
        // Create <img> tag
        TagBuilder tb = new TagBuilder("img");
        // Add src attribute
        tb.Attributes.Add("src", VirtualPathUtility.ToAbsolute(src));
        // Add alt attribute
        tb.Attributes.Add("alt", alt);
        // return MvcHtmlString object which implements IHtmlString interface.
        return new MvcHtmlString(tb.ToString(TagRenderMode.SelfClosing));
    }
}

```

1. Create Custom Html Helper
 1.1. Html helper is an extension method, so an extension method needs to be a static method in a static class. The first parameter must have this keyword represents the calling object. In this case, "this System.Web.Mvc.HtmlHelper customHtmlHelper"
 1.2. Use TagBuilder to create HTML tag.
 1.3. Return MvcHtmlString object which implements IHtmlString interface.
 1.4. The view which uses this Html helper needs to "using this namespace". In this case, "Using OnlineGame.Web.CustomHtmlHelper"
 If you want this HTML helper is available in all views, You need to include this namespace in Views/web.config file.

E.g.

```

//<system.web.webPages.razor>
//<host factoryType = "System.Web.Mvc.MvcWebRazorHostFactory, System.Web.Mvc, Version=5.2.3.0, Culture=neutral, PublicKeyToken=31BF3856AD364E35" />
//< pages pageBaseType="System.Web.Mvc.WebViewPage">
//<namespaces>
//    <add namespace="System.Web.Mvc" />
//    <add namespace="System.Web.Mvc.Ajax" />
//    <add namespace="System.Web.Mvc.Html" />
//    <add namespace="System.Web.Routing" />
//    <add namespace="OnlineGame.Web" />
//    <add namespace="OnlineGame.Web.CustomHtmlHelper" />
//</namespaces>
//</pages>
//</system.web.webPages.razor>
*/

```

5.2. Views/web.config

```

<?xml version="1.0"?>
<configuration>
    <configSections>
        <sectionGroup name="system.web.webPages.razor" type="System.Web.WebPages.Razor.Configuration.RazorWebSectionGroup, System.Web.WebPages.Razor, Version=3.0.0.0, Culture=neutral, PublicKeyToken=31BF3856AD364E35">
            <section name="host" type="System.Web.WebPages.Razor.Configuration.HostSection, System.Web.WebPages.Razor, Version=3.0.0.0, Culture=neutral, PublicKeyToken=31BF3856AD364E35" requirePermission="false" />

```

```

        <section name="pages" type="System.Web.WebPages.Razor.Configuration.RazorPagesSection,
System.Web.WebPages.Razor, Version=3.0.0.0, Culture=neutral,
PublicKeyToken=31BF3856AD364E35" requirePermission="false" />
    </sectionGroup>
</configSections>
<system.web.webPages.razor>
    <host factoryType="System.Web.Mvc.MvcWebRazorHostFactory, System.Web.Mvc, Version=5.2.3.0,
Culture=neutral, PublicKeyToken=31BF3856AD364E35" />
    <pages pageBaseType="System.Web.Mvc.WebViewPage">
        <namespaces>
            <add namespace="System.Web.Mvc" />
            <add namespace="System.Web.Mvc.Ajax" />
            <add namespace="System.Web.Mvc.Html" />
            <add namespace="System.Web.Routing" />
            <add namespace="OnlineGame.Web" />
            <add namespace="OnlineGame.Web.CustomHtmlHelper" />
        </namespaces>
    </pages>
</system.web.webPages.razor>
<appSettings>
    <add key="webpages:Enabled" value="false" />
</appSettings>
<system.webServer>
    <handlers>
        <remove name="BlockViewHandler" />
        <add name="BlockViewHandler" path="*" verb="*" precondition="integratedMode" type="System.Web.HttpNotF
oundHandler" />
    </handlers>
</system.webServer>
<system.web>
    <compilation>
        <assemblies>
            <add assembly="System.Web.Mvc, Version=5.2.3.0, Culture=neutral,
PublicKeyToken=31BF3856AD364E35" />
        </assemblies>
    </compilation>
</system.web>
</configuration>

```

5.3. Views/Gamer/Details.cshtml

```

@*@using OnlineGame.Web.CustomHtmlHelper*@
@model OnlineGame.Web.Models.Gamer
@{
    ViewBag.Title = "Details";
}
<h2>Details</h2>
<div>
    <h4>Gamer</h4>
    <hr />
    <dl class="dl-horizontal">
        <dt>
            @Html.DisplayNameFor(model => model.Name)
        </dt>
        <dd>
            @Html.DisplayFor(model => model.Name)
        </dd>
    </dl>

```

```
<dt>
    @Html.DisplayNameFor(model => model.Gender)
</dt>
<dd>
    @Html.DisplayFor(model => model.Gender)
</dd>
<dt>
    @Html.DisplayNameFor(model => model.City)
</dt>
<dd>
    @Html.DisplayFor(model => model.City)
</dd>
<dt>
    @Html.DisplayNameFor(model => model.DateOfBirth)
</dt>
<dd>
    @Html.DisplayFor(model => model.DateOfBirth)
</dd>
<dt>
    @Html.DisplayNameFor(model => model.EmailAddress)
</dt>
<dd>
    @Html.DisplayFor(model => model.EmailAddress)
</dd>
<dt>
    @Html.DisplayNameFor(model => model.Score)
</dt>
<dd>
    @Html.DisplayFor(model => model.Score)
</dd>
<dt>
    @Html.DisplayNameFor(model => model.ProfileUrl)
</dt>
<dd>
    @Html.DisplayFor(model => model.ProfileUrl)
</dd>
<dt>
    @Html.DisplayNameFor(model => model.GameMoney)
</dt>
<dd>
    @Html.DisplayFor(model => model.GameMoney)
</dd>
<dt>
    @Html.DisplayNameFor(model => model.RolePhoto)
</dt>
<dd>
    @Html.DisplayFor(model => model.RolePhoto)
</dd>
<dt>
    @Html.DisplayNameFor(model => model.RolePhotoAltText)
</dt>
<dd>
    @Html.DisplayFor(model => model.RolePhotoAltText)
```

```

</dd>
<dt>
    @Html.DisplayNameFor(model => model.RolePhoto)
</dt>
<dd>
    <br />
    @Html.Image(@Url.Content(Model.RolePhoto), @Model.RolePhotoAltText)
</dd>

<dt>
    @Html.DisplayNameFor(model => model.Team.Name)
</dt>
<dd>
    @Html.DisplayFor(model => model.Team.Name)
</dd>
</dl>
</div>
<p>
    @Html.ActionLink("Edit", "Edit", new { id = Model.Id }) |
    @Html.ActionLink("Back to List", "Index")
</p>

```

Details

Gamer

Name	Name01 ABB
Gender	Male
City	City01
DateOfBirth	28/04/1979 12:00:00 AM
EmailAddress	1@AAA.com
Score	3500
ProfileUrl	https://ithandyguytutorial.blogspot.com.au/
GameMoney	1000
RolePhoto	~/Photos/Name01.png
RolePhotoAltText	Name01RolePhoto
RolePhoto	



Name Team1

[Edit](#) | [Back to List](#)

6. HTML encoding

Html encoding characters in mvc can replace ASCII characters to avoid cross-site scripting attacks.

Reference:

https://www.w3schools.com/html/html_charset.asp

For example, Replace the following ASCII characters by Html encoding

ASCII characters Html encoding

< <

> >

& &

Single Quote ' '

Double Quote " "

Using `@Html.Raw("HtmlString")` or using `new IHtmlString("HtmlString")`

can disable automatic html encoding and return the markup.

Previously, we return an `IHtmlString` in our custom html helper.

In this part, we will use `@Html.Raw("HtmlString")`

6.1. CustomHtmlHelper/CustomHtmlHelper.cs

```
using System.Web;
using System.Web.Mvc;
namespace OnlineGame.Web.CustomHtmlHelper
{
    public static class CustomHtmlHelper
    {
        public static IHtmlString Image(this HtmlHelper customHtmlHelper, string src, string alt)
        {
            // Create <img> tag
            TagBuilder tb = new TagBuilder("img");
            // Add src attribute
            tb.Attributes.Add("src", VirtualPathUtility.ToAbsolute(src));
            // Add alt attribute
            tb.Attributes.Add("alt", alt);
            // return MvcHtmlString object which implements IHtmlString interface.
            return new MvcHtmlString(tb.ToString(TagRenderMode.SelfClosing));
        }
        public static string ImageString(this HtmlHelper customHtmlHelper, string src, string alt)
        {
            // Create <img> tag
            TagBuilder tb = new TagBuilder("img");
            // Add src attribute
            tb.Attributes.Add("src", VirtualPathUtility.ToAbsolute(src));
            // Add alt attribute
            tb.Attributes.Add("alt", alt);
            // return MvcHtmlString object which implements IHtmlString interface.
            return tb.ToString(TagRenderMode.SelfClosing);
        }
    }
}
```

/*

1. Create Custom Html Helper

1.1.

Html helper is an extension methods,

so a extension method need to be static method in a static class.

The first parameter must has this keyword represents the calling object.

In this case, "this System.Web.Mvc.HtmlHelper customHtmlHelper"

1.2.

Use TagBuilder to create HTML tag.

1.3.

Return MvcHtmlString object which implements IHtmlString interface.

1.4.

The view which uses this Html helper need to "using this namespace".

In this case, "Using OnlineGame.Web.CustomHtmlHelper"

If you want this HTML helper is available in all views,

You need to include this namespace in Views/web.config file.

E.g.

```
//<system.web.webPages.razor>
//<host factoryType = "System.Web.Mvc.MvcWebRazorHostFactory, System.Web.Mvc, Version=5.2.3.0,
Culture=neutral, PublicKeyToken=31BF3856AD364E35" />
//< pages pageBaseType="System.Web.Mvc.WebViewPage">
//<namespaces>
//    <add namespace="System.Web.Mvc" />
//    <add namespace="System.Web.Mvc.Ajax" />
//    <add namespace="System.Web.Mvc.Html" />
//    <add namespace="System.Web.Routing" />
//    <add namespace="OnlineGame.Web" />
//    <add namespace="OnlineGame.Web.CustomHtmlHelper" />
//</namespaces>
//</pages>
//</system.web.webPages.razor>
*/
```

6.2. Views/Gamer/Details.cshtml

```
@*@using OnlineGame.Web.CustomHtmlHelper*@
@model OnlineGame.Web.Models.Gamer
@{
    ViewBag.Title = "Details";
}
<h2>Details</h2>
<div>
    <h4>Gamer</h4>
    <hr />
    <dl class="dl-horizontal">
        <dt>
            @Html.DisplayNameFor(model => model.Name)
        </dt>
        <dd>
            @Html.DisplayFor(model => model.Name)
        </dd>
        <dt>
            @Html.DisplayNameFor(model => model.Gender)
        </dt>
        <dd>
            @Html.DisplayFor(model => model.Gender)
        </dd>
        <dt>
            @Html.DisplayNameFor(model => model.City)
        </dt>
        <dd>
            @Html.DisplayFor(model => model.City)
        </dd>
    </dl>
</div>
```

```

</dd>
<dt>
    @Html.DisplayNameFor(model => model.DateOfBirth)
</dt>
<dd>
    @Html.DisplayFor(model => model.DateOfBirth)
</dd>
<dt>
    @Html.DisplayNameFor(model => model.EmailAddress)
</dt>
<dd>
    @Html.DisplayFor(model => model.EmailAddress)
</dd>
<dt>
    @Html.DisplayNameFor(model => model.Score)
</dt>
<dd>
    @Html.DisplayFor(model => model.Score)
</dd>
<dt>
    @Html.DisplayNameFor(model => model.ProfileUrl)
</dt>
<dd>
    @Html.DisplayFor(model => model.ProfileUrl)
</dd>
<dt>
    @Html.DisplayNameFor(model => model.GameMoney)
</dt>
<dd>
    @Html.DisplayFor(model => model.GameMoney)
</dd>
<dt>
    @Html.DisplayNameFor(model => model.RolePhoto)
</dt>
<dd>
    @Html.DisplayFor(model => model.RolePhoto)
</dd>
<dt>
    @Html.DisplayNameFor(model => model.RolePhotoAltText)
</dt>
<dd>
    @Html.DisplayFor(model => model.RolePhotoAltText)
</dd>
<dt>
    @Html.DisplayNameFor(model => model.RolePhoto)
</dt>
<dd>

```

```

<br />

```

```

@Html.Image(Url.Content(Model.RolePhoto), Model.RolePhotoAltText)<br />

```

```

@Html.ImageString(Url.Content(Model.RolePhoto), Model.RolePhotoAltText)<br />

```

```

@*It will return HTML encoding.

```

```

E.g. *@

```

```

@Html.Raw(Html.ImageString(Url.Content(Model.RolePhoto), Model.RolePhotoAltText))<br />

```

```
@*Html.Raw will disable Html Code and return the markup, in this case, return image*@
</dd>

<dt>
    @Html.DisplayNameFor(model => model.Team.Name)
</dt>
<dd>
    @Html.DisplayFor(model => model.Team.Name)
</dd>
</dl>
</div>
<p>
    @Html.ActionLink("Edit", "Edit", new { id = Model.Id }) |
    @Html.ActionLink("Back to List", "Index")
</p>
<div>
    @Html.Raw("&lt; &gt; & amp; #039; &quot; <div>Your HTML code</div>")
</div>
```

Details

Gamer

Name	Name03 FIJK
Gender	Female
City	City01
DateOfBirth	5/12/1984 12:00:00 AM
EmailAddress	3@CCCC.com
Score	3500
ProfileUrl	https://ithandyguytutorial.blogspot.com.au/
GameMoney	4000
RolePhoto	~/Photos/Name03.png
RolePhotoAltText	Name03RolePhoto

RolePhoto

Name03

Name03

Name03

Name Team3

[Edit](#) | [Back to List](#)

< > & ' "
Your HTML code

7. Strongly Typed Views

7.1. Controllers/GamerController.cs

```
using System.Data.Entity;
using System.Linq;
using System.Threading.Tasks;
using System.Net;
using System.Web.Mvc;
using OnlineGame.Web.Models;
namespace OnlineGame.Web.Controllers
{
    public class GamerController : Controller
    {
        private OnlineGameContext db = new OnlineGameContext();
        // GET: Gamer
        [HttpGet]
        public async Task<ActionResult> Index()
        {
            IQueryable<Gamer> gamers = db.Gamers.Include(g => g.Team);
            return View(await gamers.ToListAsync());
        }
        // GET: Gamer/Details/5
        [HttpGet]
        public async Task<ActionResult> Details(int? id)
        {
            if (id == null)
            {
                return new HttpStatusCodeResult(HttpStatusCode.BadRequest);
            }
            Gamer gamer = await db.Gamers.FindAsync(id);
            if (gamer == null)
            {
                return HttpNotFound();
            }
            return View(gamer);
        }
        // GET: Gamer/Details2/5
        [HttpGet]
        public async Task<ActionResult> Details2(int? id)
        {
            if (id == null)
            {
                return new HttpStatusCodeResult(HttpStatusCode.BadRequest);
            }
            Gamer gamer = await db.Gamers.FindAsync(id);
            if (gamer == null)
            {
                return HttpNotFound();
            }
            ViewBag.GamerData = gamer;
            return View();
            //return View(gamer);
        }
        // GET: Gamer/Details3/5
```

```

[HttpGet]
public async Task<ActionResult> Details3(int? id)
{
    if (id == null)
    {
        return new HttpStatusCodeResult(HttpStatusCode.BadRequest);
    }
    Gamer gamer = await db.Gamers.FindAsync(id);
    if (gamer == null)
    {
        return HttpNotFound();
    }
    return View(gamer);
}
// GET: Gamer/Details4/5
[HttpGet]
public async Task<ActionResult> Details4(int? id)
{
    if (id == null)
    {
        return new HttpStatusCodeResult(HttpStatusCode.BadRequest);
    }
    Gamer gamer = await db.Gamers.FindAsync(id);
    if (gamer == null)
    {
        return HttpNotFound();
    }
    return View(gamer);
}
// GET: Gamer/Create
[HttpGet]
public ActionResult Create()
{
    ViewBag.TeamId = new SelectList(db.Teams, "Id", "Name");
    return View();
}
// POST: Gamer/Create
// To protect from overposting attacks, please enable the specific properties you want to bind to,
for
// more details see https://go.microsoft.com/fwlink/?LinkId=317598.
[HttpPost]
[ValidateAntiForgeryToken]
public async Task<ActionResult> Create([Bind(Include
= "Id,Name,Gender,City,DateOfBirth,EmailAddress,Score,ProfileUrl,GameMoney,TeamId,RolePhoto,RolePhotoAltText")] Gamer gamer)
{
    if (ModelState.IsValid)
    {
        db.Gamers.Add(gamer);
        await db.SaveChangesAsync();
        return RedirectToAction("Index");
    }
    ViewBag.TeamId = new SelectList(db.Teams, "Id", "Name", gamer.TeamId);
    return View(gamer);
}
// GET: Gamer/Edit/5
[HttpGet]
public async Task<ActionResult> Edit(int? id)
{

```

```

        if (id == null)
        {
            return new HttpStatusCodeResult(HttpStatusCode.BadRequest);
        }
        Gamer gamer = await db.Gamers.FindAsync(id);
        if (gamer == null)
        {
            return HttpNotFound();
        }
        ViewBag.TeamId = new SelectList(db.Teams, "Id", "Name", gamer.TeamId);
        return View(gamer);
    }
    // POST: Gamer/Edit/5
    // To protect from overposting attacks, please enable the specific properties you want to bind to,
for
    // more details see https://go.microsoft.com/fwlink/?LinkId=317598.
    [HttpPost]
    [ValidateAntiForgeryToken]
    public async Task<ActionResult> Edit([Bind(Include
= "Id,Name,Gender,City,DateOfBirth,EmailAddress,Score,ProfileUrl,GameMoney,TeamId,RolePhoto,RolePhotoAltTe
xt")] Gamer gamer)
    {
        if (ModelState.IsValid)
        {
            db.Entry(gamer).State = EntityState.Modified;
            await db.SaveChangesAsync();
            return RedirectToAction("Index");
        }
        ViewBag.TeamId = new SelectList(db.Teams, "Id", "Name", gamer.TeamId);
        return View(gamer);
    }
    // GET: Gamer/Delete/5
    [HttpGet]
    public async Task<ActionResult> Delete(int? id)
    {
        if (id == null)
        {
            return new HttpStatusCodeResult(HttpStatusCode.BadRequest);
        }
        Gamer gamer = await db.Gamers.FindAsync(id);
        if (gamer == null)
        {
            return HttpNotFound();
        }
        return View(gamer);
    }
    // POST: Gamer/Delete/5
    [HttpPost, ActionName("Delete")]
    [ValidateAntiForgeryToken]
    public async Task<ActionResult> DeleteConfirmed(int id)
    {
        Gamer gamer = await db.Gamers.FindAsync(id);
        db.Gamers.Remove(gamer);
        await db.SaveChangesAsync();
        return RedirectToAction("Index");
    }
    protected override void Dispose(bool disposing)
    {
        if (disposing)

```

```

        {
            db.Dispose();
        }
        base.Dispose(disposing);
    }
}
}

```

7.2. Views/Gamer/Details2.cshtml

Add View

View name: Details2

Template: Empty (without model)

Model class:

Data context 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)

Add Cancel

```

@{
    ViewBag.Title = "Details2";
}
<h2>Details2</h2>
@Html.DisplayName("Name")
<br />
@ViewBag.GamerData.Name
<br />
@Html.DisplayName("Gender")
<br />
@ViewBag.GamerData.Gender

```

Details2

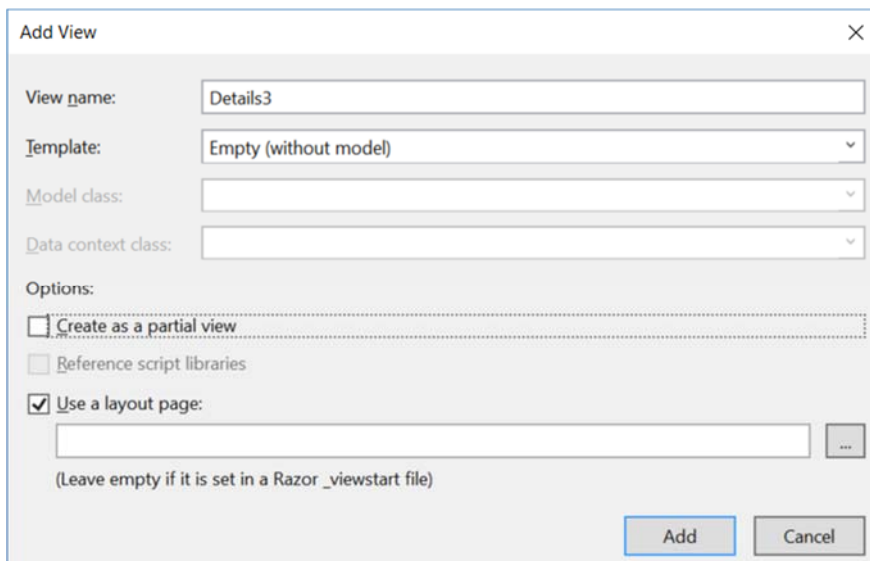
Name

Name02 CDDE

Gender

Female

7.3. Views/Gamer/Details3.cshtml



```
@model dynamic
@{
    ViewBag.Title = "Details3";
}
<h2>Details3</h2>
@Html.DisplayName("Name")
<br />
@Model.Name
<br />
@Html.DisplayName("Gender")
<br />
@Model.Gender
```

Details3

Name

Name02 CDDE

Gender

Female

7.4. Views/Gamer/Details4.cshtml

Add View

View name: Details4

Template: Empty

Model class: Gamer (OnlineGame.Web.Models)

Data context class: OnlineGameContext (OnlineGame.Web.Models)

Options:

☐ Create as a partial view

☒ Reference script libraries

☒ Use a layout page:

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

Add Cancel

```
@model OnlineGame.Web.Models.Gamer
@{
    ViewBag.Title = "Details4";
}
<h2>Details4</h2>
@Html.DisplayName("Name")
<br />
@Model.Name
<br />
@Html.DisplayName("Gender")
<br />
@Model.Gender
@*
```

Using Strongly Typed View provide intellisense

*@

Details4

Name
Name02 CDDE
Gender
Female

8. Partial View

Mvc partial views are similar to web form application user controls.

Mvc partial views can be included in several normal views.

If we update mvc partial view, then it will apply to all views which include the partial view.

Partial View name prefix is " ".

E.g. **Gamer.cshtml**

8.1. Controllers/GamerController.cs

```
using System.Data.Entity;
using System.Linq;
using System.Threading.Tasks;
using System.Net;
using System.Web.Mvc;
using OnlineGame.Web.Models;
namespace OnlineGame.Web.Controllers
{
    public class GamerController : Controller
    {
        private OnlineGameContext db = new OnlineGameContext();
        // GET: Gamer
        [HttpGet]
        public async Task<ActionResult> Index()
        {
            IQueryable<Gamer> gamers = db.Gamers.Include(g => g.Team);
            return View(await gamers.ToListAsync());
        }
        // GET: Gamer
        [HttpGet]
        public async Task<ActionResult> Index2()
        {
            IQueryable<Gamer> gamers = db.Gamers.Include(g => g.Team);
            return View(await gamers.ToListAsync());
        }
        // GET: Gamer/Details/5
        [HttpGet]
        public async Task<ActionResult> Details(int? id)
        {
            if (id == null)
            {
                return new HttpStatusCodeResult(HttpStatusCode.BadRequest);
            }
            Gamer gamer = await db.Gamers.FindAsync(id);
            if (gamer == null)
            {
                return HttpNotFound();
            }
            return View(gamer);
        }
        // GET: Gamer/Details2/5
        [HttpGet]
        public async Task<ActionResult> Details2(int? id)
        {
            if (id == null)
            {
                return new HttpStatusCodeResult(HttpStatusCode.BadRequest);
            }
            Gamer gamer = await db.Gamers.FindAsync(id);
            if (gamer == null)
            {
                return HttpNotFound();
            }
            ViewBag.GamerData = gamer;
        }
    }
}
```

```

        return View();
        //return View(gamer);
    }
    // GET: Gamer/Details3/5
    [HttpGet]
    public async Task<ActionResult> Details3(int? id)
    {
        if (id == null)
        {
            return new HttpStatusCodeResult(HttpStatusCode.BadRequest);
        }
        Gamer gamer = await db.Gamers.FindAsync(id);
        if (gamer == null)
        {
            return HttpNotFound();
        }
        return View(gamer);
    }
    // GET: Gamer/Details4/5
    [HttpGet]
    public async Task<ActionResult> Details4(int? id)
    {
        if (id == null)
        {
            return new HttpStatusCodeResult(HttpStatusCode.BadRequest);
        }
        Gamer gamer = await db.Gamers.FindAsync(id);
        if (gamer == null)
        {
            return HttpNotFound();
        }
        return View(gamer);
    }
    // GET: Gamer/Create
    [HttpGet]
    public ActionResult Create()
    {
        ViewBag.TeamId = new SelectList(db.Teams, "Id", "Name");
        return View();
    }
    // POST: Gamer/Create
    // To protect from overposting attacks, please enable the specific properties you want to bind to,
for
    // more details see https://go.microsoft.com/fwlink/?LinkId=317598.
    [HttpPost]
    [ValidateAntiForgeryToken]
    public async Task<ActionResult> Create([Bind(Include
= "Id,Name,Gender,City,DateOfBirth,EmailAddress,Score,ProfileUrl,GameMoney,TeamId,RolePhoto,RolePhotoAltText")] Gamer gamer)
    {
        if (ModelState.IsValid)
        {
            db.Gamers.Add(gamer);
            await db.SaveChangesAsync();
            return RedirectToAction("Index");
        }
        ViewBag.TeamId = new SelectList(db.Teams, "Id", "Name", gamer.TeamId);
        return View(gamer);
    }

```

```

    }
    // GET: Gamer/Edit/5
    [HttpGet]
    public async Task<ActionResult> Edit(int? id)
    {
        if (id == null)
        {
            return new HttpStatusCodeResult(HttpStatusCode.BadRequest);
        }
        Gamer gamer = await db.Gamers.FindAsync(id);
        if (gamer == null)
        {
            return HttpNotFound();
        }
        ViewBag.TeamId = new SelectList(db.Teams, "Id", "Name", gamer.TeamId);
        return View(gamer);
    }
    // POST: Gamer/Edit/5
    // To protect from overposting attacks, please enable the specific properties you want to bind to,
for
    // more details see https://go.microsoft.com/fwlink/?LinkId=317598.
    [HttpPost]
    [ValidateAntiForgeryToken]
    public async Task<ActionResult> Edit([Bind(Include
= "Id,Name,Gender,City,DateOfBirth,EmailAddress,Score,ProfileUrl,GameMoney,TeamId,RolePhoto,RolePhotoAltTe
xt")] Gamer gamer)
    {
        if (ModelState.IsValid)
        {
            db.Entry(gamer).State = EntityState.Modified;
            await db.SaveChangesAsync();
            return RedirectToAction("Index");
        }
        ViewBag.TeamId = new SelectList(db.Teams, "Id", "Name", gamer.TeamId);
        return View(gamer);
    }
    // GET: Gamer/Delete/5
    [HttpGet]
    public async Task<ActionResult> Delete(int? id)
    {
        if (id == null)
        {
            return new HttpStatusCodeResult(HttpStatusCode.BadRequest);
        }
        Gamer gamer = await db.Gamers.FindAsync(id);
        if (gamer == null)
        {
            return HttpNotFound();
        }
        return View(gamer);
    }
    // POST: Gamer/Delete/5
    [HttpPost, ActionName("Delete")]
    [ValidateAntiForgeryToken]
    public async Task<ActionResult> DeleteConfirmed(int id)
    {
        Gamer gamer = await db.Gamers.FindAsync(id);
        db.Gamers.Remove(gamer);
        await db.SaveChangesAsync();
    }

```

```

        return RedirectToAction("Index");
    }
    protected override void Dispose(bool disposing)
    {
        if (disposing)
        {
            db.Dispose();
        }
        base.Dispose(disposing);
    }
}
}

```

8.2. Views/Shared/_Gamer.cshtml (Partial View)

Partial View name prefix is " ".

E.g. Gamer.cshtml

@model OnlineGame.Web.Models.Gamer

```

<div>
    <h4>Gamer</h4>
    <hr />
    <dl class="dl-horizontal">
        <dt>
            @Html.DisplayNameFor(model => model.Name)
        </dt>
        <dd>
            @Html.DisplayFor(model => model.Name)
        </dd>
        <dt>
            @Html.DisplayNameFor(model => model.Gender)
        </dt>
        <dd>
            @Html.DisplayFor(model => model.Gender)
        </dd>
    </dl>
</div>

```

```
</dd>
<dt>
    @Html.DisplayNameFor(model => model.City)
</dt>
<dd>
    @Html.DisplayFor(model => model.City)
</dd>
<dt>
    @Html.DisplayNameFor(model => model.DateOfBirth)
</dt>
<dd>
    @Html.DisplayFor(model => model.DateOfBirth)
</dd>
<dt>
    @Html.DisplayNameFor(model => model.EmailAddress)
</dt>
<dd>
    @Html.DisplayFor(model => model.EmailAddress)
</dd>
<dt>
    @Html.DisplayNameFor(model => model.Score)
</dt>
<dd>
    @Html.DisplayFor(model => model.Score)
</dd>
<dt>
    @Html.DisplayNameFor(model => model.ProfileUrl)
</dt>
<dd>
    @Html.DisplayFor(model => model.ProfileUrl)
</dd>
<dt>
    @Html.DisplayNameFor(model => model.GameMoney)
</dt>
<dd>
    @Html.DisplayFor(model => model.GameMoney)
</dd>
<dt>
    @Html.DisplayNameFor(model => model.RolePhoto)
</dt>
<dd>
    @Html.DisplayFor(model => model.RolePhoto)
</dd>
<dt>
    @Html.DisplayNameFor(model => model.RolePhotoAltText)
</dt>
<dd>
    @Html.DisplayFor(model => model.RolePhotoAltText)
</dd>
<dt>
    @Html.DisplayNameFor(model => model.Team.Name)
</dt>
<dd>
```

```

        @Html.DisplayFor(model => model.Team.Name)
    </dd>
</dl>
</div>
<p>
    @Html.ActionLink("Edit", "Edit", new { id = Model.Id }) |
    @Html.ActionLink("Back to List", "Index")
</p>

```

8.3. Views/Gamer/Index2.cshtml

Add View

View name: Index2

Template: List

Model class: Gamer (OnlineGame.Web.Models)

Data context class: OnlineGameContext (OnlineGame.Web.Models)

Options:

☐ Create as a partial view

☒ Reference script libraries

☒ Use a layout page:

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

Add Cancel

```

@using OnlineGame.Web.Models
@model IEnumerable<Gamer>
@{
    ViewBag.Title = "Index2";
}
<h2>Index2</h2>
@foreach (Gamer item in Model)
{
    @*@Html.Partial("_Gamer", item)*@
    {
        Html.RenderPartial("_Gamer", item);
    }
}
@*
1.
//@Html.Partial("_Gamer", modelObj) V.S. { @Html.RenderPartial("_Gamer", modelObj); }
1.1.
Using Partial() only if you need to assign the output to variable.
RenderPartial() writes output to output stream which provides better performance.
1.2.
//@Html.Partial("_Gamer", modelObj)
Partial return MvcHtmlString.
1.3.
//{ @Html.RenderPartial("_Gamer", modelObj); }
RenderPartial is a void method and writes output to output stream,
so you need { ... }
*@

```