

(T16)討論 OutputCacheAttribute(輸出快取屬性)的 Duration、ChildAction、CustomCacheAttribute(自訂快取屬性)、VaryByParam、Location、ClearOutputCache(清除輸出快取)
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(T16)討論 OutputCacheAttribute(輸出快取屬性)的 Duration、ChildAction、CustomCacheAttribute(自訂快取屬性)、VaryByParam、Location、ClearOutputCache(清除輸出快取)

(T16-1)討論 OutputCacheAttribute(輸出快取屬性)的 Duration (1. to 4.3.)

(T16-2)討論 OutputCacheAttribute(輸出快取屬性)的 ChildAction、Duration (4.4.)

(T16-3)討論 OutputCacheAttribute(輸出快取屬性)的 Duration、ChildAction、CustomCacheAttribute(自訂快取屬性) (4.5. to 4.6.)

(T16-4)討論 OutputCacheAttribute(輸出快取屬性)的 Duration、VaryByParam (5.)

(T16-5)討論 OutputCacheAttribute(輸出快取屬性)的 ChildAction、Location (6.)

(T16-6)討論 OutputCacheAttribute(輸出快取屬性)的 ChildAction、Duration、VaryByParam、ClearOutputCache (7. to 8.)

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=====

0. Summary

=====

In this tutorial, we will discuss

* Please ensure you fully understand T013 Grid View before you continue.

* Action filters

Reference:

<https://docs.microsoft.com/en-us/aspnet/mvc/overview/older-versions-1/controllers-and-routing/understanding-action-filters-cs>

An action filter is an attribute that you can apply to a controller action -- or an entire controller -- that modifies the way in which the action is executed.

* Authorize

* ChildActionOnly

* HandleError

* **OutputCache**

* RequireHttps

* ValidateInput

* ValidateAntiForgeryToken

* CustomizeCacheAttribute

* ClearOutputCache

* Fragment Cache in Child action

動作過濾器 Action Filter 2 - Cache 完全攻略。歐買尬。內建的 Cache 屬性 GG 了!?!別怕。有密技。手寫自定 Cache 屬性。

* Cache 可以讓你的 Web Application 擁有更好的效率和效能。

* Cache 一直是許多工程師心中的痛啊，如果對 Cache 一知半解，Web Application 很容易就死給你看。

* 內建的 Cache 屬性肯定不夠用，有些場合就 GG。

* 不過別怕，本章節會帶你手寫自定客製化的 Cache 屬性。

* 完美攻略 **Duration** 屬性，**VaryByName** 屬性，**ClearOutputCache** 屬性，**ChildAction** 屬性。

=====

1.

VaryByParam

1.1.

Vary by ""

//[OutputCache(Duration = 60, VaryByParam = "")]

It means for cache for every parameters,
it is dangerous because of the view might have too many parameters.

1.2.

Vary by "None"

```
//[OutputCache(Duration = 5, VaryByParam = "none")]
```

It means always cache the same contents.

1.3.

Vary by "Name"

```
//[OutputCache(Duration = 60, VaryByParam = "pageNumber")]
```

```
//[OutputCache(Duration = 60, VaryByParam = "searchBy;searchText;pageNumber;sortBy")]
```

It means for cache for every value of name parameters.

2.

Location

```
//[OutputCache(Duration = 10, VaryByParam = "None", Location = OutputCacheLocation.ServerAndClient)]
```

There are 3 locations option can store the cached response, Server, Client, and Proxy server.

2.1.

```
//OutputCacheLocation.Any
```

By default, cached response is at any available locations.

2.2.

```
//OutputCacheLocation.Client
```

2.3.

```
OutputCacheLocation.Downstream
```

Any HTTP 1.1 devices which includes proxy servers.

2.4.

```
//OutputCacheLocation.None
```

Do not store cache.

2.5.

```
//OutputCacheLocation.Server
```

2.6.

```
//OutputCacheLocation.ServerAndClient
```

3.

VaryByHeader

It will cache on an HTTP header. E.g. Accept-Language.

4.

VaryByCustom

It need the implementation of custom method in global.asax.

5.

SqlDependency

It will cache everything until the data in a Sql server table changes.

=====

Reference:

- <http://www.c-sharpcorner.com/code/1994/how-to-clear-output-cache-in-asp-net-mvc.aspx>
- <https://docs.microsoft.com/en-us/aspnet/mvc/overview/older-versions-1/controllers-and-routing/improving-performance-with-output-caching-cs>
- <https://forums.asp.net/t/2077235.aspx?How+to+clear+OutPutCache+Asp+net+Mvc>
- <http://taswar.zeitynsoft.com/disable-browser-cache-in-asp-mvc/>
- <https://stackoverflow.com/questions/13463939/net-mvc-controller-force-cache-refresh-depending-on-situation>
- [https://msdn.microsoft.com/zh-cn/library/bb516932\(v=vs.110\).aspx](https://msdn.microsoft.com/zh-cn/library/bb516932(v=vs.110).aspx)

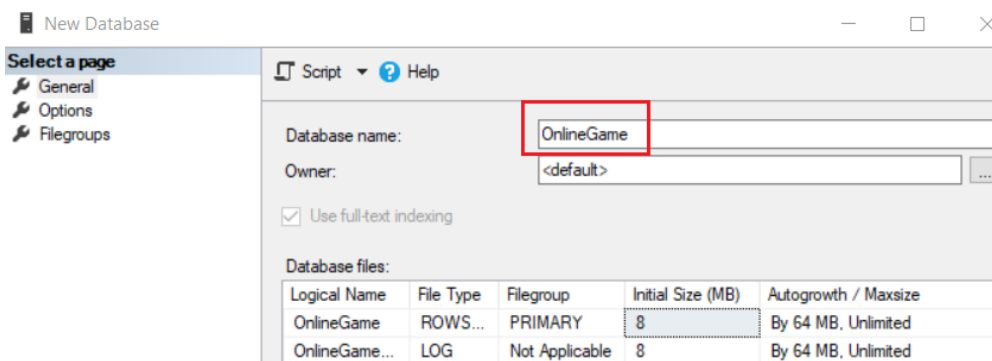
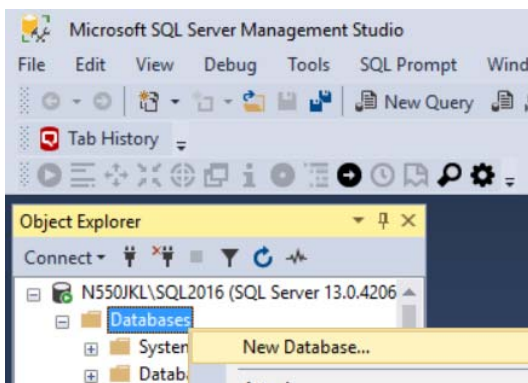
- <https://stackoverflow.com/questions/28061486/mvcdontcaching-how-to-remove-child-action-cache-mvc-donut-caching>
- https://books.google.com.au/books?id=mQgnBAAQBAJ&pg=SA6-PA189&lpg=SA6-PA189&dq=OutputCacheLocation+%E6%98%AF&source=bl&ots=fFg4FuxG5g&sig=dKrOtR8j5EAs7mnJYAV5TyV9_IU&hl=en&sa=X&ved=0ahUKEwik3vj4gblZAhVDqJQKHV7GAekQ6AEIKTAA#v=onepage&q=OutputCacheLocation%20%E6%98%AF&f=false
- <https://stackoverflow.com/questions/12612545/how-to-remove-output-cache-for-child-action-mvc3>

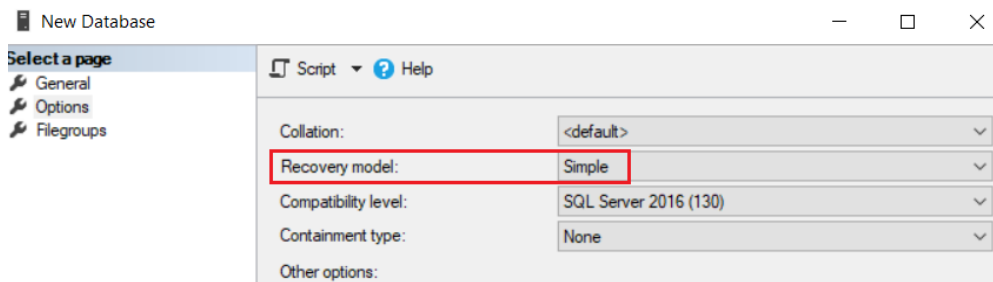
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1. OnlineGame DB

1.1. 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
--2. Create Table
CREATE TABLE Gamer
(
    Id INT PRIMARY KEY
        IDENTITY(1, 1)
        NOT NULL ,
    [Name] NVARCHAR(100) NOT NULL ,
    Gender NVARCHAR(10) NOT NULL,
    EmailAddress nvarchar(100) NOT NULL,
)
--3. Insert Data
INSERT  Gamer
VALUES  ( N'Name01 ABB', N'Male', '1@AAA.com' );
INSERT  Gamer
VALUES  ( N'Name02 CDDE', N'Female', '2@BBB.com' );
INSERT  Gamer
VALUES  ( N'Name03 FIJK', N'Female', '3@CCCC.com' );
INSERT  Gamer
VALUES  ( N'Name04 LMOPPQ', N'Male', '4@DD.com' );
INSERT  Gamer
VALUES  ( N'Name05 QRSTT', N'Male', '5@EEE.com' );
INSERT  Gamer
VALUES  ( N'Name06 TUVVX', N'Female', '6@FF.com' );
INSERT  Gamer
VALUES  ( N'Name07 XYZZX', N'Female', '7@GGGG.com' );
INSERT  Gamer
VALUES  ( N'Name08 ABBCDE', N'Male', '8@HH.com' );
INSERT  Gamer
VALUES  ( N'Name09 QRSTTUVXX', N'Male', '9@IIII.com' );
INSERT  Gamer
VALUES  ( N'Name10 GGAAEE', N'Male', '10@XXWFFS.com' );
INSERT  Gamer
VALUES  ( N'Name11 HFSASER', N'Male', '11@AAA.com' );
INSERT  Gamer
VALUES  ( N'Name12 ESVSADC', N'Female', '12@BBB.com' );
INSERT  Gamer
VALUES  ( N'Name13 REDSVF', N'Female', '13@CCCC.com' );
```

```

INSERT  Gamer
VALUES  ( N'Name14 BGVDD', N'Male', '14@DD.com' );
INSERT  Gamer
VALUES  ( N'Name15 WwVFSSQ', N'Male', '15@EEE.com' );
INSERT  Gamer
VALUES  ( N'Name16 TTVSS', N'Female', '16@FF.com' );
INSERT  Gamer
VALUES  ( N'Name17 AAQERR', N'Female', '17@GGGG.com' );
INSERT  Gamer
VALUES  ( N'Name18 BBFSAQ', N'Male', '18@HH.com' );
INSERT  Gamer
VALUES  ( N'Name19 QRSTTUVXX', N'Male', '19@IIII.com' );
INSERT  Gamer
VALUES  ( N'Name20 HHFWSWQ', N'Male', '20@XXWFFS.com' );
GO -- Run the previous command and begins new batch

```

1.2. 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

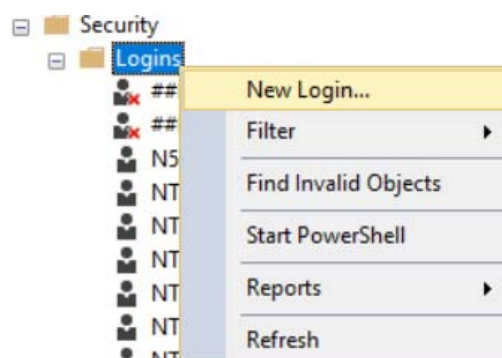
sysadmin

-->

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

Login Properties - Tester

Select a page

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

Connection

Server: N550JKL\SQL2016

Connection: N550JKL\pmp1

[View connection properties](#)

Progress

Ready

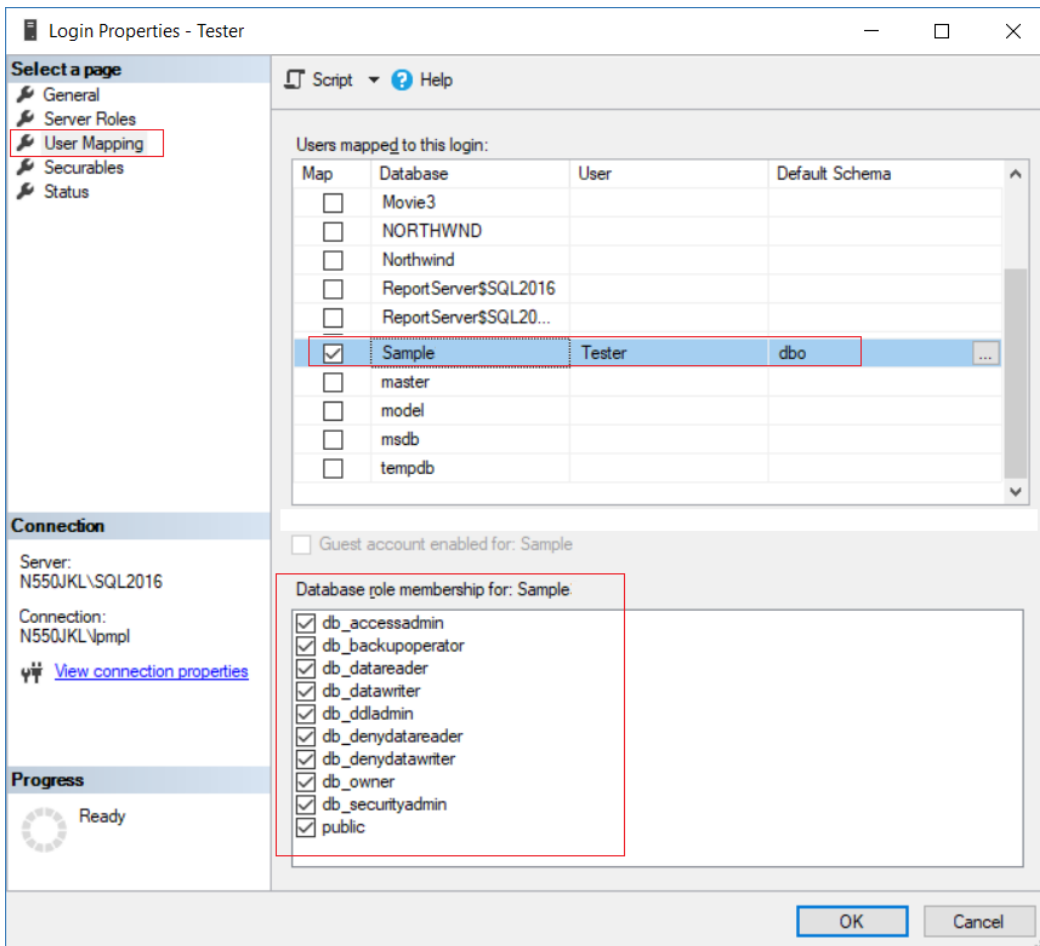
Script Help

Server role is used to grant server-wide security privileges to a user.

Server roles:

- ☐ bulkadmin
- ☐ dbcreator
- ☐ diskadmin
- ☐ processadmin
- ☒ public
- ☐ securityadmin
- ☐ serveradmin
- ☐ setupadmin
- ☒ sysadmin

OK Cancel



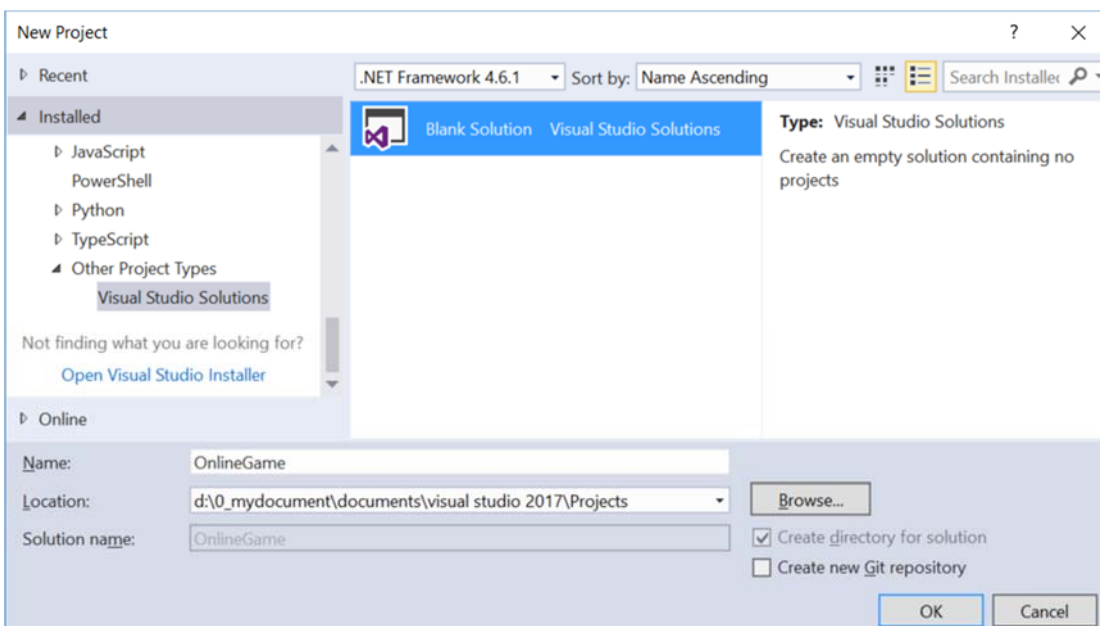
2. New Project - OnlineGame

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

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

-->

Name: **OnlineGame**



2.1. New Project - OnlineGame.Web

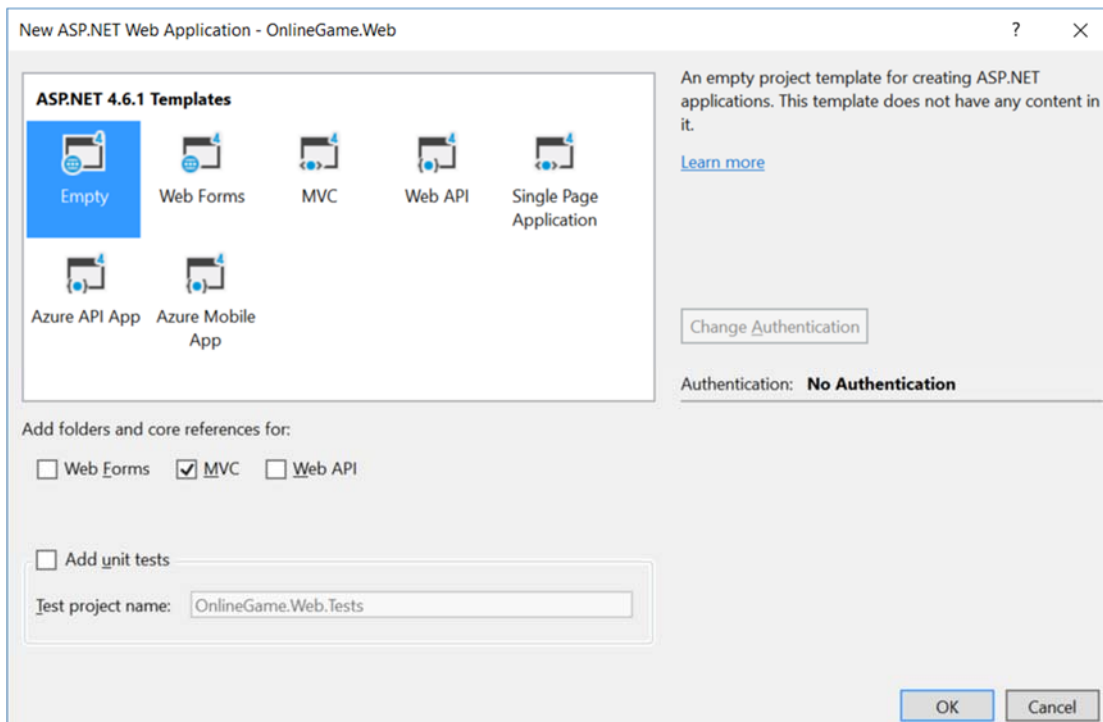
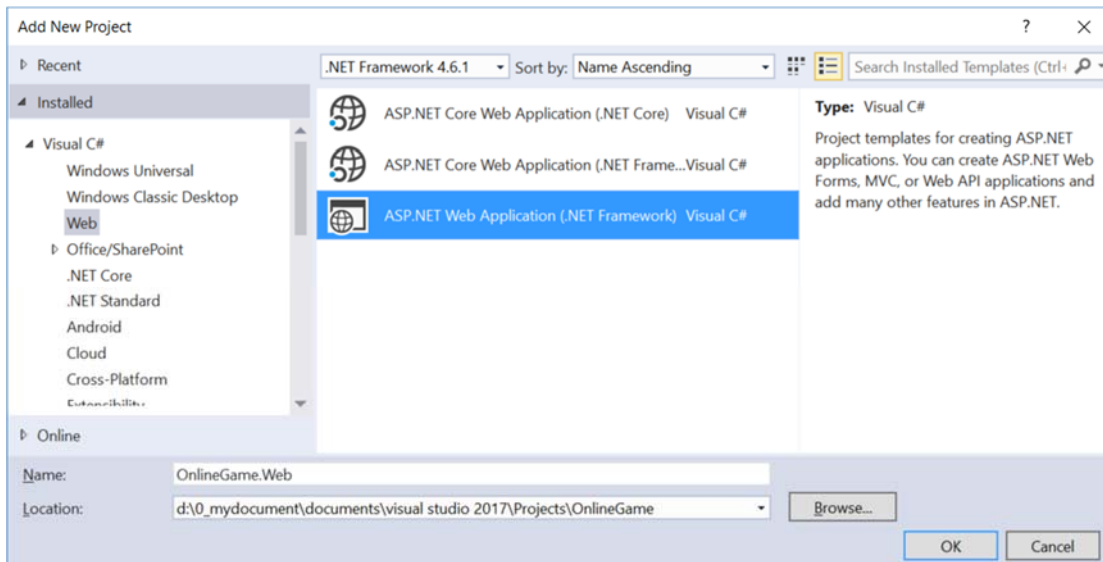
Solutions Name --> Add --> New Project -->

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

-->

Name: **OnlineGame.Web**

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



2.1.1. App_Start/FilterConfig.cs

```

using System.Web;
using System.Web.Mvc;
namespace WebApplication1
{
    public class FilterConfig
    {
        public static void RegisterGlobalFilters(GlobalFilterCollection filters)
        {
            filters.Add(new HandleErrorAttribute());
        }
    }
}
/*
1.
Register Customized Error View
1.1.
Register HandleErrorAttribute to global filter
In Global.asax,
//FilterConfig.RegisterGlobalFilters(GlobalFilters.Filters);
We pass the GlobalFilters.Filters to
//public static void RegisterGlobalFilters(GlobalFilterCollection filters)
Here, we register "HandleErrorAttribute" to global filter.
1.2.
In Web.Config, add the customErrors mode="On"
//<system.web>
//    <customErrors mode="On">
//    </customErrors>
1.3.
Create error view, Views/Shared/Error.cshtml
*/

```

2.1.2. 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-ignoreroresources-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.

```
*/
```

2.1.3. Global.asax.cs

```
using System.Web.Mvc;
```

```
using System.Web.Routing;
```

```
using WebApplication1;
```

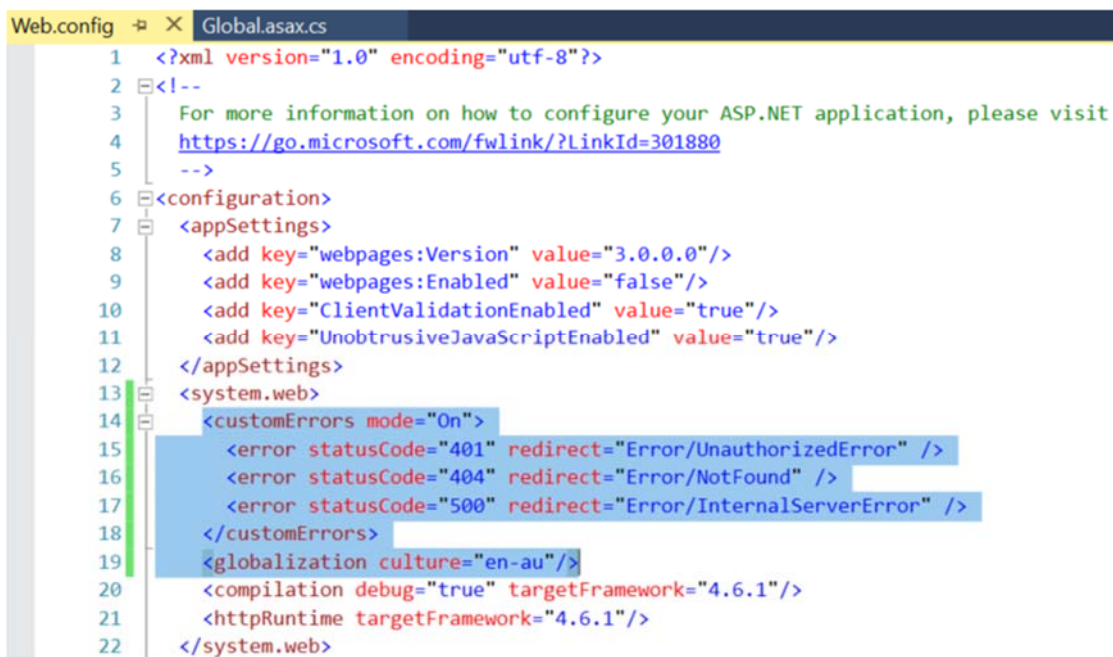
```
namespace OnlineGame.Web
```

```

{
    public class MvcApplication : System.Web.HttpApplication
    {
        //Application_Start() is the magic start point of this application
        protected void Application_Start()
        {
            AreaRegistration.RegisterAllAreas();
            //Register HandleErrorAttribute to global filter
            FilterConfig.RegisterGlobalFilters(GlobalFilters.Filters);
            //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);
        }
    }
}

```

2.1.4. Web.config



```

1  <?xml version="1.0" encoding="utf-8"?>
2  <!--
3      For more information on how to configure your ASP.NET application, please visit
4      https://go.microsoft.com/fwlink/?LinkId=301880
5      -->
6  <configuration>
7      <appSettings>
8          <add key="webpages:Version" value="3.0.0.0"/>
9          <add key="webpages:Enabled" value="false"/>
10         <add key="ClientValidationEnabled" value="true"/>
11         <add key="UnobtrusiveJavaScriptEnabled" value="true"/>
12     </appSettings>
13     <system.web>
14         <customErrors mode="On">
15             <error statusCode="401" redirect="Error/UnauthorizedError" />
16             <error statusCode="404" redirect="Error/NotFound" />
17             <error statusCode="500" redirect="Error/InternalServerError" />
18         </customErrors>
19         <globalization culture="en-au"/>
20         <compilation debug="true" targetFramework="4.6.1"/>
21         <httpRuntime targetFramework="4.6.1"/>
22     </system.web>

```

```

<system.web>
    <customErrors mode="On">
        <error statusCode="401" redirect="Error/UnauthorizedError" />
        <error statusCode="404" redirect="Error/NotFound" />
        <error statusCode="500" redirect="Error/InternalServerError" />
    </customErrors>
    <globalization culture="en-au"/>
    <compilation debug="true" targetFramework="4.6.1"/>

```

```
<httpRuntime targetFramework="4.6.1"/>
</system.web>
```

2.1.5. Add Customized Error View and Error Controller

2.1.5.1. Controllers/ErrorController.cs

```
using System.Web.Mvc;
namespace OnlineGame.Web.Controllers
{
    public class ErrorController : Controller
    {
        //error statusCode="401"
        [HttpGet]
        public ActionResult UnauthorizedError()
        {
            return View();
        }
        //error statusCode="404"
        [HttpGet]
        public ActionResult NotFound()
        {
            return View();
        }
        //error statusCode="500"
        [HttpGet]
        public ActionResult InternalServerError()
        {
            return View();
        }
    }
}
/*
1.
In the Web.config
//<customErrors mode="On" defaultRedirect="Error/DefaultError">
//    <error statusCode="401" redirect="Error/UnauthorizedError" />
//    <error statusCode="404" redirect="Error/NotFound" />
//    <error statusCode="500" redirect="Error/InternalServerError" />
//</customErrors>
We notice that it will still show the Views/Shared/Error.cshtml
when exception occurs.
Thus, we can delete Views/Shared/DefaultError.cshtml.
We also can delete DefaultError() in ErrorController.cs
In the Web.config, we can set as the following.
//<customErrors mode="On">
//    <error statusCode="401" redirect="Error/UnauthorizedError" />
//    <error statusCode="404" redirect="Error/NotFound" />
//    <error statusCode="500" redirect="Error/InternalServerError" />
//</customErrors>
*/
```

2.1.5.2. Views/Shared/Error.cshtml

Add View

View name:

Template:

Model class:

Options:

☐ Create as a partial view

☐ Reference script libraries

☒ Use a layout page:

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

Add Cancel

```
@{
    ViewBag.Title = "Error";
}
<h2>Something occurs, please contact support.</h2>
```

2.1.5.3. Views/Shared/UnauthorizedError.cshtml

```
@{
    ViewBag.Title = "UnauthorizedError";
}
<h2>Error UnauthorizedError statusCode=401</h2>
You are trying to access something which you are not allowed to access.
```

<http://localhost/onlinegame.web/Error/UnauthorizedError>

Error UnauthorizedError statusCode=401

You are trying to access something which you are not allowed to access.

2.1.5.4. Views/Shared/NotFound.cshtml

```
@{
    ViewBag.Title = "NotFound";
}
<h2>Error NotFound statusCode=404</h2>
The request can not be found.
```

<http://localhost/onlinegame.web/Error/NotFound>

Error NotFound statusCode=404

The request can not be found.

2.1.5.5. Views/Shared/InternalServerError.cshtml

```
@{  
    ViewBag.Title = "InternalServerError";  
}  
<h2>Error InternalServerError statusCode=500</h2>  
The developers did something wrong, not users fault.
```

<http://localhost/onlinegame.web/Error/InternalServerError>

Error InternalServerError statusCode=500

The developers did something wrong, not users fault.

3. OnlineGame.Web

3.1. 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

-->

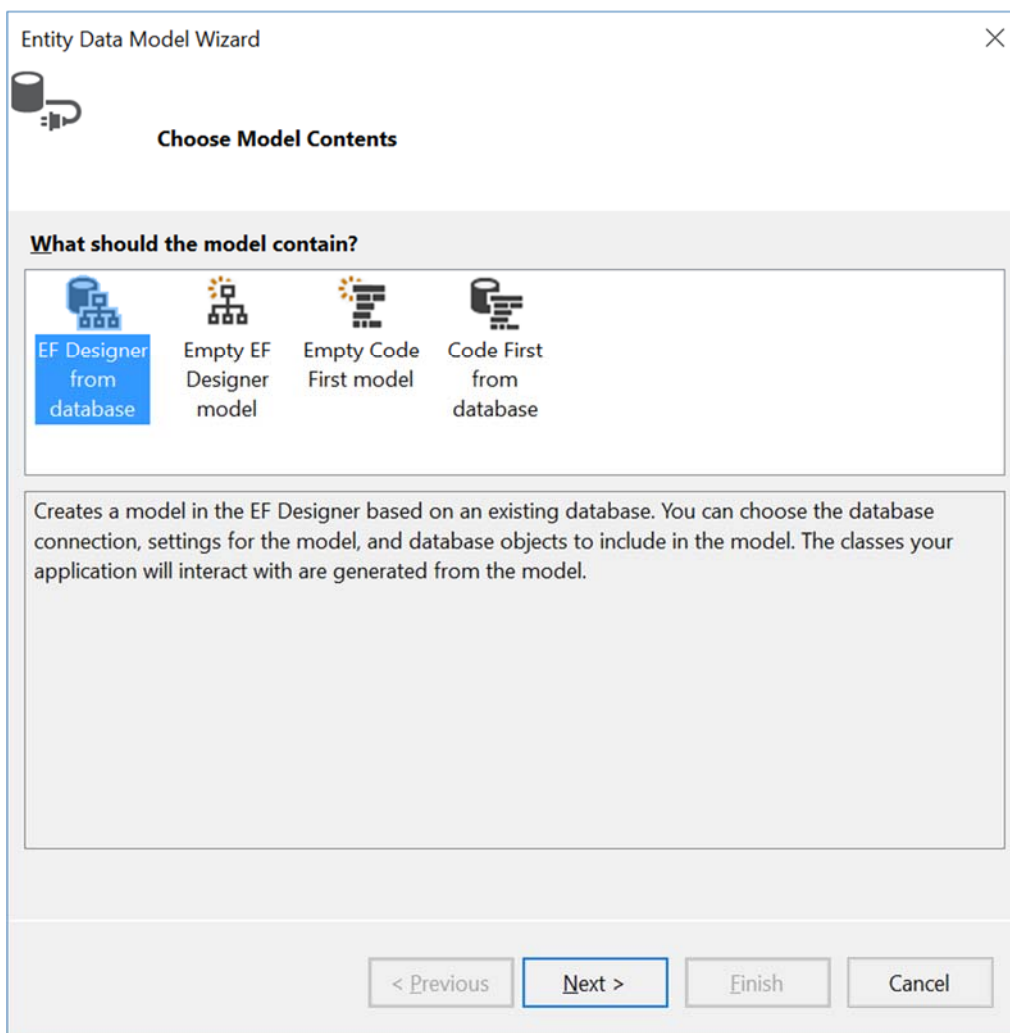
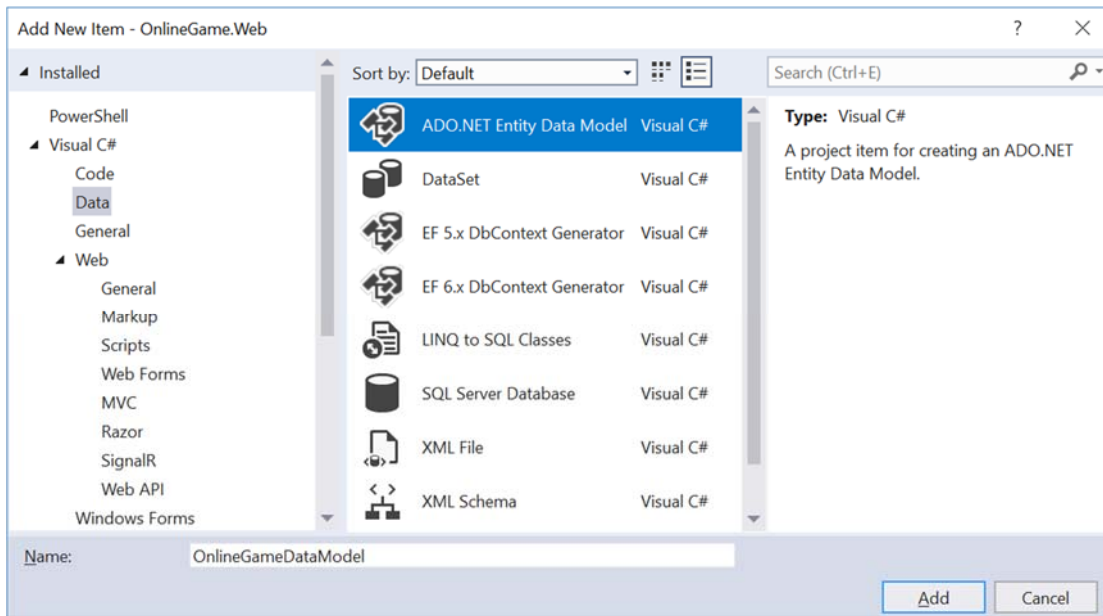
EF Designer from database

....

-->

Save Connection settings in Web.Config as:

OnlineGameContext



**Choose 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

☐  sysdiagrams

☐  Views

☐  Stored Procedures and Functions

☒ 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

?

×

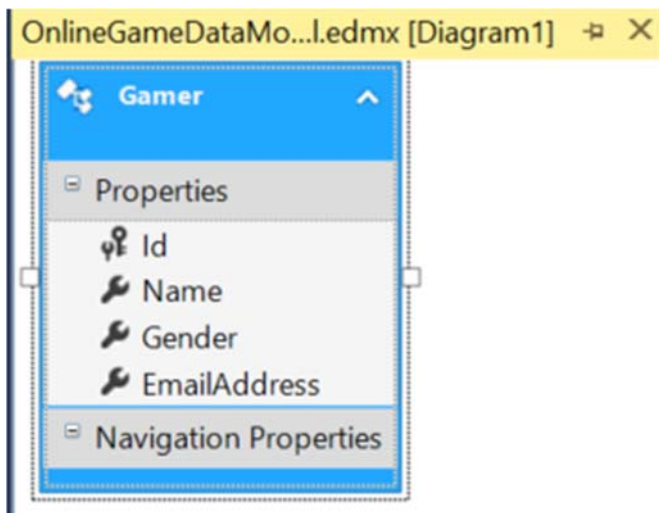
Running this text template can potentially harm your computer. Do not run it if you obtained it from an untrusted source.

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

☐ Do not show this message again

OK

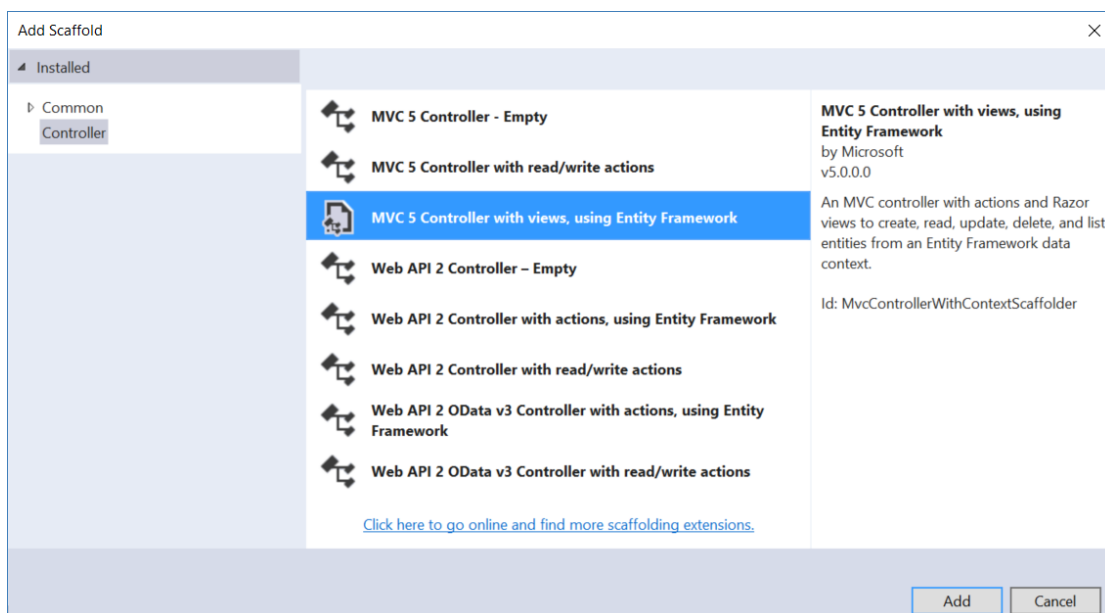
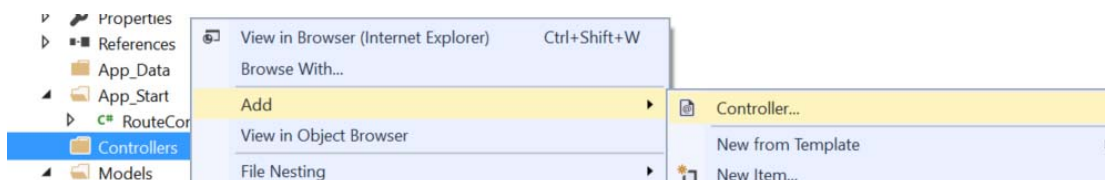
Cancel

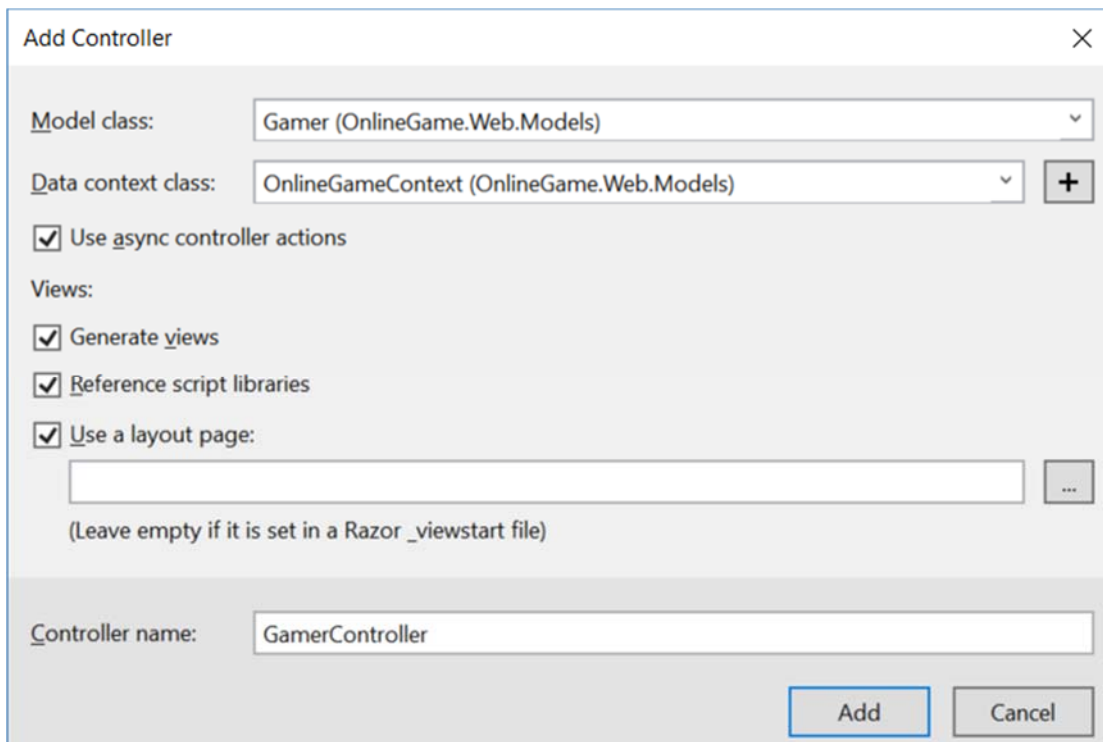


3.2. Controllers/GamersController.cs

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

MVC 5 Controller with views, using Entity Framework

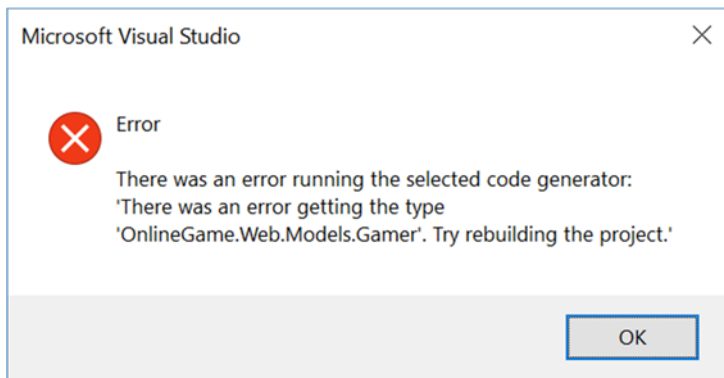




The 'Add Controller' dialog box in Visual Studio. It contains the following fields and options:

- Model class:** A dropdown menu with 'Gamer (OnlineGame.Web.Models)' selected.
- Data context class:** A dropdown menu with 'OnlineGameContext (OnlineGame.Web.Models)' selected, followed by a '+' button.
- ☒ **Use async controller actions**
- Views:**
 - ☒ **Generate views**
 - ☒ **Reference script libraries**
 - ☒ **Use a layout page:** A text box with an empty field and a '...' button.
- (Leave empty if it is set in a Razor _viewstart file)
- Controller name:** A text box containing 'GamerController'.
- Buttons:** 'Add' and 'Cancel' buttons at the bottom right.

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.

Index

[Create New](#)

Name	Gender	EmailAddress	
Name01 ABB	Male	1@AAA.com	Edit Details Delete
Name02 CDDE	Female	2@BBB.com	Edit Details Delete
Name03 FIJK	Female	3@CCCC.com	Edit Details Delete
Name04 LMOPPQ	Male	4@DD.com	Edit Details Delete
Name05 QRSTT	Male	5@EEE.com	Edit Details Delete
Name06 TUVVX	Female	6@FF.com	Edit Details Delete
Name07 XYZZXX	Female	7@GGGG.com	Edit Details Delete
Name08 ABBCDE	Male	8@HH.com	Edit Details Delete
Name09 QRSTTUVXX	Male	9@IIII.com	Edit Details Delete

4. OnlineGame.Web

4.1. Web.config

```
Web.config  [icon] [x]
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   <compilation debug="true" targetFramework="4.6.1" />
19   <httpRuntime targetFramework="4.6.1" />
20   <globalization culture="en-au" />
21   <customErrors mode="On">
22     <error statusCode="401" redirect="Error/UnauthorizedError" />
23     <error statusCode="404" redirect="Error/NotFound" />
24     <error statusCode="500" redirect="Error/InternalServerError" />
25   </customErrors>
26   <outputCache>
27     <outputCacheSettings>
28       <outputCacheProfiles>
29         <clear />
30         <add name="outputCacheProfile1" duration="60" varyByParam="none" />
31       </outputCacheProfiles>
32     </outputCacheSettings>
33   </outputCache>
34 </system.web>
```

```
<system.web>
  <compilation debug="true" targetFramework="4.6.1" />
  <httpRuntime targetFramework="4.6.1" />
  <globalization culture="en-au" />
  <customErrors mode="On">
    <error statusCode="401" redirect="Error/UnauthorizedError" />
    <error statusCode="404" redirect="Error/NotFound" />
    <error statusCode="500" redirect="Error/InternalServerError" />
  </customErrors>
  <outputCache>
    <outputCacheSettings>
      <outputCacheProfiles>
        <clear />
        <add name="outputCacheProfile1" duration="60" varyByParam="none" />
      </outputCacheProfiles>
    </outputCacheSettings>
  </outputCache>
</system.web>
```



```

    </outputCacheProfiles>
  </outputCacheSettings>
</caching>
<customErrors mode="On">
  <error statusCode="401" redirect="Error/UnauthorizedError" />
  <error statusCode="404" redirect="Error/NotFound" />
  <error statusCode="500" redirect="Error/InternalServerError" />
</customErrors>
<globalization culture="en-au" />
<compilation debug="true" targetFramework="4.6.1" />
<httpRuntime targetFramework="4.6.1" />
</system.web>

```

4.2. WebShared/CustomizeCacheAttribute.cs

```

using System.Web.Mvc;
using System.Web.Configuration;
namespace OnlineGame.Web.WebShared
{
    public class CustomizeCacheAttribute : OutputCacheAttribute
    {
        public CustomizeCacheAttribute(string cacheProfileName)
        {
            OutputCacheSettingsSection cacheSettings =
                (OutputCacheSettingsSection)WebConfigurationManager
                    .GetSection("system.web/caching/outputCacheSettings");
            OutputCacheProfile cacheProfile = cacheSettings.OutputCacheProfiles[cacheProfileName];
            Duration = cacheProfile.Duration;
            VaryByParam = cacheProfile.VaryByParam;
            VaryByCustom = cacheProfile.VaryByCustom;
        }
    }
}
/*
In Web.config
//<system.web>
//    <caching>
//        <outputCacheSettings>
//        <outputCacheProfiles>
//            <clear/>
//            <add name="outputCacheProfile1" duration="60" varyByParam="none"/>
//        </outputCacheProfiles>
//    </outputCacheSettings>
// </caching>
// <customErrors mode="On">
//     <error statusCode="401" redirect="Error/UnauthorizedError" />
//     <error statusCode="404" redirect="Error/NotFound" />
//     <error statusCode="500" redirect="Error/InternalServerError" />
// </customErrors>
// <globalization culture="en-au" />
// <compilation debug="true" targetFramework="4.6.1" />
// <httpRuntime targetFramework="4.6.1" />
//</system.web>
*/

```

4.3. Controllers/GamerController.cs

```

using System;
using System.Collections.Generic;
using System.Data.Entity;
using System.Globalization;
using System.Linq;
using System.Threading.Tasks;
using System.Net;
using System.Web.Mvc;
using System.Web.UI;
using OnlineGame.Web.Models;
using OnlineGame.Web.WebShared;
using PagedList;
namespace OnlineGame.Web.Controllers
{
    public class GamerController : Controller
    {
        private OnlineGameContext db = new OnlineGameContext();
        // GET: Gamer
        [HttpGet]
        public async Task<ActionResult> Index()
        {
            return View(await db.Gamers.ToListAsync());
        }
        // GET: Gamer
        [HttpGet]
        [OutputCache(Duration = 10)]
        // [OutputCache(Duration = 10, VaryByParam = "None", Location =
OutputCacheLocation.ServerAndClient)]
        // [OutputCache(Duration = 10, VaryByParam = "None", Location = OutputCacheLocation.Client)]
        public async Task<ActionResult> Index2()
        {
            System.Threading.Thread.Sleep(3000);
            ViewBag.ServerTime = DateTime.Now.ToString(CultureInfo.InvariantCulture);
            return View(await db.Gamers.ToListAsync());
        }
        // GET: Gamer
        [HttpGet]
        public async Task<ActionResult> Index3()
        {
            ViewBag.ServerTime = DateTime.Now.ToString(CultureInfo.InvariantCulture);
            return View(await db.Gamers.ToListAsync());
        }
        // GET: Gamer
        [HttpGet]
        public async Task<ActionResult> Index3V2()
        {
            ViewBag.ServerTime = DateTime.Now.ToString(CultureInfo.InvariantCulture);
            return View(await db.Gamers.ToListAsync());
        }

        // [ChildActionOnly] make the action to be accessible only by a child request,
        // so no one can make a direct URL request to this action.
        [ChildActionOnly]
        [HttpGet]
        [OutputCache(Duration = 10)]
        public string GetGamerCount()
        {

```

```

        System.Threading.Thread.Sleep(3000);
        return $"Gamer Count = {db.Gamers.Count()} At {DateTime.Now}";
    }

    [HttpGet]
    //[OutputCache(Duration = 60)]
    [OutputCache(CacheProfile = "outputCacheProfile1")]
    public async Task<ActionResult> Index4()
    {
        ViewBag.ServerTime = DateTime.Now.ToString(CultureInfo.InvariantCulture);
        return View(await db.Gamers.ToListAsync());
    }

    //[ChildActionOnly] make the action to be accessible only by a child request,
    //so no one can make a direct URL request to this action.
    [ChildActionOnly]
    [HttpGet]
    //[OutputCache(Duration = 60)]
    //[OutputCache(CacheProfile = "outputCacheProfile1")] //This will throw exception
    [CustomizeCache("outputCacheProfile1")]
    public string GetGamerCount2()
    {
        System.Threading.Thread.Sleep(3000);
        return $"Gamer Count = {db.Gamers.Count()} At {DateTime.Now}";
    }

    //[OutputCache(Duration = 5, VaryByParam = "none")]
    [OutputCache(Duration = 60, VaryByParam = "gamerName")]
    public ActionResult Index5(string gamerName)
    {
        ViewBag.GamerName = gamerName ?? string.Empty;
        ViewBag.ServerTime = DateTime.Now.ToString(CultureInfo.InvariantCulture);
        return View();
    }

    //From T013
    // GET: Gamer
    [HttpGet]
    ///1.
    //[OutputCache(Duration = 5, VaryByParam = "none")]
    ///It means always cache the same contents.
    ///2.
    //[OutputCache(Duration = 60, VaryByParam = "*")]
    ///It means for cache for every parameters,
    ///this is dangerous because of the view might have too many parameters.
    ///3.
    [OutputCache(Duration = 60, VaryByParam = "searchBy;searchText;pageNumber;sortBy")]
    public async Task<ActionResult> Index6(string searchBy, string searchText, int?
pageNumber, string sortBy)
    {
        ViewBag.NameSort = String.IsNullOrEmpty(sortBy) ? "Name desc" : "";
        ViewBag.GenderSort = sortBy == "Gender" ? "Gender desc" : "Gender";
        List<Gamer> gamers = await db.Gamers.ToListAsync();
        if (searchBy == "Gender")
        {
            gamers = await db.Gamers
                .Where(x => x.Gender == searchText || searchText == null)
                .ToListAsync();
        }
        if (searchBy == "Name")

```

```

{
    gamers = await db.Gamers
        .Where(x => x.Name.Contains(searchText) || searchText == null)
        .ToListAsync();
}
IOrderedEnumerable<Gamer> gamersOrderedEnumerable;
switch (sortBy)
{
    case "Name desc":
        gamersOrderedEnumerable = gamers.OrderByDescending(x => x.Name);
        break;
    case "Gender desc":
        gamersOrderedEnumerable = gamers.OrderByDescending(x => x.Gender);
        break;
    case "Gender":
        gamersOrderedEnumerable = gamers.OrderBy(x => x.Gender);
        break;
    default:
        gamersOrderedEnumerable = gamers.OrderBy(x => x.Name);
        break;
}
//1.
//The first parameter is pageNumber
//pageNumber ?? 1 means if the pageNumber==null, then pageNumber==1
//2.
//The 2nd parameter is page size.
//We set page size is 5.
//IPagedList<Gamer> gamerPagedList = gamers.ToPagedList(pageNumber ?? 1, 5);
IPagedList<Gamer> gamerPagedList = gamersOrderedEnumerable.ToPagedList(pageNumber ?? 1, 5);
ViewBag.ServerTime = DateTime.Now.ToString(CultureInfo.InvariantCulture);
return View(gamerPagedList);
}
//From T013
[HttpPost]
public async Task<ActionResult> DeleteMultiple(IEnumerable<int>
GamerIdsToDelete, string searchBy, string searchText, int? pageNumber, string sortBy)
{
    //Delete a list of gamers
    List<Gamer> gamers = await db.Gamers.Where(g =>
GamerIdsToDelete.Contains(g.Id)).ToListAsync();
    gamers.ForEach(g => db.Gamers.Remove(g));
    await db.SaveChangesAsync();
    //Remove OutputCache
    //Reference:
    //http://www.c-sharpcorner.com/code/1994/how-to-clear-output-cache-in-asp-net-mvc.aspx
    //https://forums.asp.net/t/2077235.aspx?How+to+clear+OutPutCache+Asp+net+Mvc
    //1. Get the url for the action method:
    string staleItem = Url.Action("Index6", "Gamer");
    //2. Remove the item from cache
    if (staleItem != null) Response.RemoveOutputCacheItem(staleItem);
    return RedirectToAction("Index6", new { searchBy, searchText, pageNumber, sortBy });
}
[HttpGet]
//[OutputCache(Duration = 10, VaryByParam = "None", Location = OutputCacheLocation.None)]
//[OutputCache(Duration = 10, VaryByParam = "None", Location= OutputCacheLocation.Server)]
[OutputCache(Duration = 10, VaryByParam = "None", Location = OutputCacheLocation.ServerAndClient)]
public ActionResult Index7()

```

```

{
    ViewBag.ServerTime = DateTime.Now.ToString(CultureInfo.InvariantCulture);
    return View();
}
// 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/Create
[HttpGet]
public ActionResult Create()
{
    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,EmailAddress")] Gamer gamer)
{
    if (ModelState.IsValid)
    {
        db.Gamers.Add(gamer);
        await db.SaveChangesAsync();
        return RedirectToAction("Index");
    }
    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();
    }
    return View(gamer);
}
// POST: Gamer/Edit/5

```

for // To protect from overposting attacks, please enable the specific properties you want to bind to,

// more details see <https://go.microsoft.com/fwlink/?LinkId=317598>.

[HttpPost]

[ValidateAntiForgeryToken]

public async Task<ActionResult> Edit([Bind(Include = "Id,Name,Gender,EmailAddress")] Gamer gamer)

{

if (ModelState.IsValid)

{

db.Entry(gamer).State = EntityState.Modified;

await db.SaveChangesAsync();

return RedirectToAction("Index");

}

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);

}

}

}

/*

1.

//[HttpGet]

//[OutputCache(Duration = 10)]

//public async Task<ActionResult> Index2()

//{

// System.Threading.Thread.Sleep(3000);

// return View(await db.Gamers.ToListAsync());

//}

1.1.

When we first time navigate to /Gamer/Index2,

It will take 3 seconds to retrieve the list of data.
The view output cache will remain for 10 seconds.
If we refresh the view during that 10 seconds,
we will get the data from cached response.
After that 10 seconds, the cache will be expired.
If you navigate to /Gamer/Index2 again,
The view output cache will remain for another 10 seconds again.

2.
// GET: Gamer
//[HttpGet]
//public async Task<ActionResult> Index3()
//{
// return View(await db.Gamers.ToListAsync());
//}
...
//[HttpGet]
//[ChildActionOnly]
//[OutputCache(Duration = 10)]
//public string GetGamerCount()
//{
// System.Threading.Thread.Sleep(3000);
// return \$"Gamer Count = {db.Gamers.Count()} At {DateTime.Now}";
//}
2.1.

[ChildActionOnly] make the action to be accessible only by a child request,
so no one can make a direct URL request to this action.

2.2.
In the Views/Gamer/Index3.cshtml
//@Html.Action("GetGamerCount")
This action will store the result in the cache for 10 seconds.
If we refresh the view during that 10 seconds,
we will get the data from cached response.
After that 10 seconds, the cache will be expired.
This action will store the result in the cache for another 10 seconds again.

2.3.
In the Views/Gamer/Index3.cshtml
and the In the Views/Gamer/Index3V2.cshtml.
It takes 3 seconds load Gamer/Index3 for the first time.
Now, navigate to Gamer/Index3V2 and notice it loads instantly.
We notice that the server time of the GetGamerCount action in both views is the same.
It proves that both views are sharing the same cached response of the GetGamerCount action.

3.
////[OutputCache(Duration = 5, VaryByParam = "none")]
//[OutputCache(Duration = 60, VaryByParam = "gamerName")]
//public ActionResult Index5(string gamerName)
//{
// ViewBag.GamerName = gamerName ?? string.Empty;
// return View();
//}
3.1.

When the action has no [HttpGet] or [HttpPost],
that means it can be both [HttpGet] and [HttpPost] action.

3.2.
In the Views/Gamer/Index3.cshtml
//@ViewBag.GamerName.
//<input type="text" name="gamerName"/>
the ViewBag.GamerName will display whatever you type in the textbox.

3.3.
//[OutputCache(Duration = 5, VaryByParam = "none")]
When we first time navigate to /Gamer/Index5,
The view output cache will remain for 5 seconds.
In the Views/Gamer/Index3.cshtml
//@ViewBag.GamerName.
//<input type="text" name="gamerName"/>
the ViewBag.GamerName will display whatever you type in the textbox for the first time.

During that 5 seconds, no matter what you input to that text textbox, ViewBag.GamerName will remain the same as you input for the first time. After that 5 seconds, the cache will be expired. the ViewBag.GamerName will display whatever you type in the textbox again. The way to fix this issue is using

```
//[OutputCache(Duration = 60, VaryByParam = "gamerName")]
```

3.4.

```
//[OutputCache(Duration = 60, VaryByParam = "gamerName")]
```

In the Views/Gamer/Index3.cshtml

```
//<b>@ViewBag.GamerName</b>.
```

```
//<input type="text" name="gamerName"/>
```

the ViewBag.GamerName will display whatever you type in the textbox.

Since "VaryByParam" is set to "gamerName",

All different responses will be cached for this Web form

4.

```
//[OutputCache(Duration = 10, VaryByParam = "None", Location = OutputCacheLocation.ServerAndClient)]
```

```
//public ActionResult Index7()
```

4.1.

There are 3 locations option can store the cached response, Server, Client, and Proxy server.

4.1.1.

```
//OutputCacheLocation.Any
```

By default, cached response is at any available locations.

4.1.2.

```
//OutputCacheLocation.Client
```

4.1.3.

```
OutputCacheLocation.Downstream
```

Any HTTP 1.1 devices which includes proxy servers.

4.1.4.

```
//OutputCacheLocation.None
```

Do not store cache.

4.1.5.

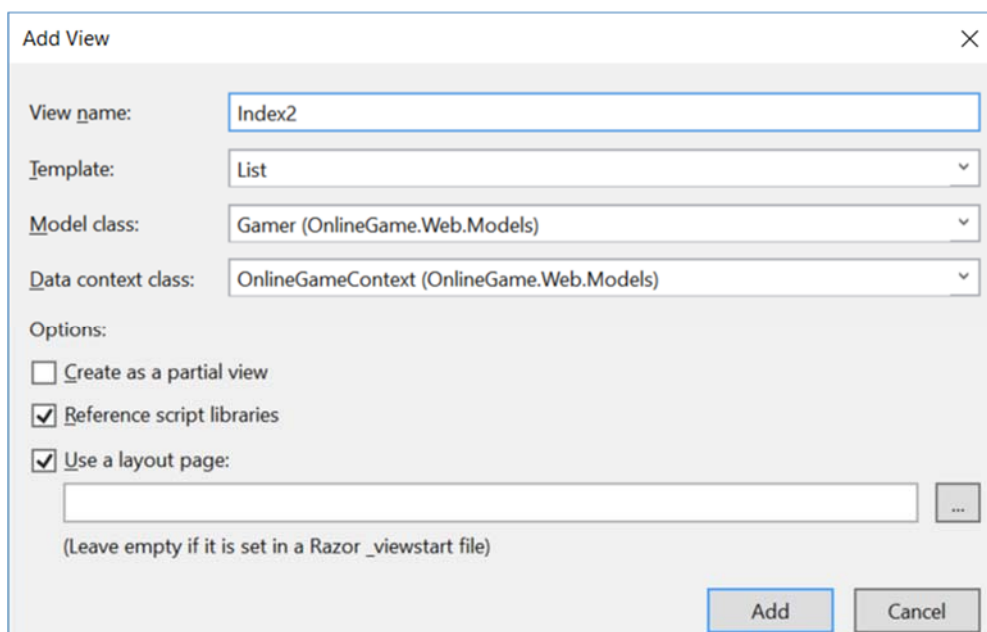
```
//OutputCacheLocation.Server
```

4.1.6.

```
//OutputCacheLocation.ServerAndClient
```

```
*/
```

4.4. 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 System.Globalization
@model IEnumerable<OnlineGame.Web.Models.Gamer>
@{
    ViewBag.Title = "Gamer Index2";
}
<h2>Gamer Index2</h2>
<p>
    @Html.ActionLink("Create New", "Create")
</p>
<b>Server side Time : @ViewBag.ServerTime</b><br />
<b>
    <script type="text/javascript">
        document.write("Client Side Time : " + Date());
    </script>
</b>
<p>
    Gamers retrieved At @DateTime.Now.ToString(CultureInfo.InvariantCulture)
</p>
<table class="table">
    <tr>
        <th>
            @Html.DisplayNameFor(model => model.Name)
        </th>
        <th>
            @Html.DisplayNameFor(model => model.Gender)
        </th>
        <th>
            @Html.DisplayNameFor(model => model.EmailAddress)
        </th>
        <th></th>
    </tr>
    @foreach (var item in Model)
    {
        <tr>
            <td>
                @Html.DisplayFor(modelItem => item.Name)
            </td>
            <td>
                @Html.DisplayFor(modelItem => item.Gender)
            </td>
            <td>
                @Html.DisplayFor(modelItem => item.EmailAddress)
            </td>
            <td>
                @Html.ActionLink("Edit", "Edit", new { id = item.Id }) |
                @Html.ActionLink("Details", "Details", new { id = item.Id }) |
                @Html.ActionLink("Delete", "Delete", new { id = item.Id })
            </td>
        </tr>
    }
</table>

```

Home Index2

[Create New](#)

Server side Time : 02/19/2018 23:26:29

Client Side Time : Mon Feb 19 2018 23:26:29 GMT+1000 (E. Australia Standard Time)

Gamers retrieved At 02/19/2018 23:26:29

Name	Gender	EmailAddress	
Name01 ABB	Male	1@AAA.com	Edit Details Delete
Name02 CDDE	Female	2@BBB.com	Edit Details Delete
Name03 FIJK	Female	3@CCCC.com	Edit Details Delete

<http://localhost:60116/Gamer/Index2>

Keep Refreshing, and look at the time stamp.

1.

```
//[HttpGet]
//[OutputCache(Duration = 10)]
//public async Task<ActionResult> Index2()
//{
//    System.Threading.Thread.Sleep(3000);
//    return View(await db.Gamers.ToListAsync());
//}
```

1.1.

When we first time navigate to /Gamer/Index2,
It will take 3 seconds to retrieve the list of data.
The view output cache will remain for 10 seconds.
If we refresh the view during that 10 seconds,
we will get the data from cached response.
After that 10 seconds, the cache will be expired.
If you navigate to /Gamer/Index2 again,
The view output cache will remain for another 10 seconds again.

4.5. Views/Gamer/Index3.cshtml - The Child Action Cache is shared.

4.5.1. Views/Gamer/Index3.cshtml

Add View

View name: Index3

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 System.Globalization
@model IEnumerable<OnlineGame.Web.Models.Gamer>
@{
    ViewBag.Title = "Gamer Index3";
}
<h2>Gamer Index3</h2>
<p>
    @Html.ActionLink("Create New", "Create")
</p>
<b>Server side Time : @ViewBag.ServerTime</b><br />
<b>
    <script type="text/javascript">
        document.write("Client Side Time : " + Date());
    </script>
</b>
<p>
    Gamers retrieved At @DateTime.Now.ToString(CultureInfo.InvariantCulture)
</p>
<p>
    @Html.Action("GetGamerCount")
</p>
<table class="table">
    <tr>
        <th>
            @Html.DisplayNameFor(model => model.Name)
        </th>
        <th>
            @Html.DisplayNameFor(model => model.Gender)
        </th>
        <th>
            @Html.DisplayNameFor(model => model.EmailAddress)
        </th>
        <th></th>
    </tr>
    @foreach (var item in Model)
    {

```

```

<tr>
    <td>
        @Html.DisplayFor(modelItem => item.Name)
    </td>
    <td>
        @Html.DisplayFor(modelItem => item.Gender)
    </td>
    <td>
        @Html.DisplayFor(modelItem => item.EmailAddress)
    </td>
    <td>
        @Html.ActionLink("Edit", "Edit", new { id = item.Id }) |
        @Html.ActionLink("Details", "Details", new { id = item.Id }) |
        @Html.ActionLink("Delete", "Delete", new { id = item.Id })
    </td>
</tr>
}
</table>

```

Home Index3

[Create New](#)

Server side Time : 02/19/2018 23:27:41
Client Side Time : Mon Feb 19 2018 23:27:42 GMT+1000 (E. Australia Standard Time)
 Gamers retrieved At 02/19/2018 23:27:41
 Gamer Count = 18 At 19/02/2018 11:27:41 PM

Name	Gender	EmailAddress	
Name01 ABB	Male	1@AAA.com	Edit Details Delete
Name02 CDDE	Female	2@BBB.com	Edit Details Delete
Name03 FIJK	Female	3@CCCC.com	Edit Details Delete

<http://localhost:60116/Gamer/Index3>

Keep Refreshing, and look at the time stamp.

```

2.
// GET: Gamer
//[HttpGet]
//public async Task<ActionResult> Index3()
//{
//    return View(await db.Gamers.ToListAsync());
//}
...
//[HttpGet]
//[ChildActionOnly]
//[OutputCache(Duration = 10)]
//public string GetGamerCount()
//{

```

```
// System.Threading.Thread.Sleep(3000);
// return $"Gamer Count = {db.Gamers.Count()} At {DateTime.Now}";
//}
```

2.1.

[ChildActionOnly] make the action to be accessible only by a child request, so no one can make a direct URL request to this action.

2.2.

In the Views/Gamer/Index3.cshtml

```
//@Html.Action("GetGamerCount")
```

This action will store the result in the cache for 10 seconds.

If we refresh the view during that 10 seconds,

we will get the data from cached response.

After that 10 seconds, the cache will be expired.

This action will store the result in the cache for another 10 seconds again.

2.3.

In the Views/Gamer/Index3.cshtml

and the In the Views/Gamer/Index3V2.cshtml.

It takes 3 seconds load Gamer/Index3 for the first time.

Now, navigate to Gamer/Index3V2 and notice it loads instantly.

We notice that the server time of the GetGamerCount action in both views is the same.

It proves that both views are sharing the same cached response of the GetGamerCount action.

4.5.2. Views/Gamer/Index3V2.cshtml

```
@using System.Globalization
```

```
@model IEnumerable<OnlineGame.Web.Models.Gamer>
```

```
@{
```

```
    ViewBag.Title = "Gamer Index3V2";
```

```
}
```

```
<h2>Gamer Index3V2</h2>
```

```
<p>
```

```
    @Html.ActionLink("Create New", "Create")
```

```
</p>
```

```
<b>Server side Time : @ViewBag.ServerTime</b><br />
```

```
<b>
```

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

```
        document.write("Client Side Time : " + Date());
```

```
    </script>
```

```
</b>
```

```
<p>
```

```
    Gamers retrieved At @DateTime.Now.ToString(CultureInfo.InvariantCulture)
```

```
</p>
```

```
<p>
```

```
    @Html.Action("GetGamerCount")
```

```
</p>
```

```
<table class="table">
```

```
    <tr>
```

```
        <th>
```

```
            @Html.DisplayNameFor(model => model.Name)
```

```
        </th>
```

```
        <th>
```

```
            @Html.DisplayNameFor(model => model.Gender)
```

```
        </th>
```

```
        <th>
```

```

        @Html.DisplayNameFor(model => model.EmailAddress)
    </th>
</th></th>
</tr>
@foreach (var item in Model)
{
    <tr>
        <td>
            @Html.DisplayFor(modelItem => item.Name)
        </td>
        <td>
            @Html.DisplayFor(modelItem => item.Gender)
        </td>
        <td>
            @Html.DisplayFor(modelItem => item.EmailAddress)
        </td>
        <td>
            @Html.ActionLink("Edit", "Edit", new { id = item.Id }) |
            @Html.ActionLink("Details", "Details", new { id = item.Id }) |
            @Html.ActionLink("Delete", "Delete", new { id = item.Id })
        </td>
    </tr>
}
</table>

```

4.6. Views/Gamer/Index4.cshtml

Add View

View name:

Template:

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

```

@using System.Globalization
@model IEnumerable<OnlineGame.Web.Models.Gamer>
@{
    ViewBag.Title = "Gamer Index4";
}
<h2>Gamer Index4</h2>

```

```

<p>
    @Html.ActionLink("Create New", "Create")
</p>
<b>Server side Time : @ViewBag.ServerTime</b><br />
<b>
    <script type="text/javascript">
        document.write("Client Side Time : " + Date());
    </script>
</b>
<p>
    Gamers retrieved At @DateTime.Now.ToString(CultureInfo.InvariantCulture)
</p>
<p>
    @Html.Action("GetGamerCount2")
</p>
<table class="table">
    <tr>
        <th>
            @Html.DisplayNameFor(model => model.Name)
        </th>
        <th>
            @Html.DisplayNameFor(model => model.Gender)
        </th>
        <th>
            @Html.DisplayNameFor(model => model.EmailAddress)
        </th>
        <th></th>
    </tr>
    @foreach (var item in Model)
    {
        <tr>
            <td>
                @Html.DisplayFor(modelItem => item.Name)
            </td>
            <td>
                @Html.DisplayFor(modelItem => item.Gender)
            </td>
            <td>
                @Html.DisplayFor(modelItem => item.EmailAddress)
            </td>
            <td>
                @Html.ActionLink("Edit", "Edit", new { id = item.Id }) |
                @Html.ActionLink("Details", "Details", new { id = item.Id }) |
                @Html.ActionLink("Delete", "Delete", new { id = item.Id })
            </td>
        </tr>
    }
</table>

```

Home Index4

[Create New](#)

Server side Time : 02/19/2018 23:28:40
Client Side Time : Mon Feb 19 2018 23:28:40 GMT+1000 (E. Australia Standard Time)
Gamers retrieved At 02/19/2018 23:28:40
Gamer Count = 18 At 19/02/2018 11:28:40 PM

Name	Gender	EmailAddress	
Name01 ABB	Male	1@AAA.com	Edit Details Delete
Name02 CDDE	Female	2@BBB.com	Edit Details Delete
Name03 FIJK	Female	3@CCCC.com	Edit Details Delete

<http://localhost:60116/Gamer/Index3>

Keep Refreshing, and look at the time stamp.

5. OnlineGame.Web - VaryByParam

5.1. Controllers/GamerController.cs

```
//[OutputCache(Duration = 5, VaryByParam = "none")]
[OutputCache(Duration = 60, VaryByParam = "gamerName")]
public ActionResult Index5(string gamerName)
{
    ViewBag.GamerName = gamerName ?? string.Empty;
    ViewBag.ServerTime = DateTime.Now.ToString(CultureInfo.InvariantCulture);
    return View();
}
```

```
/*
3.
////[OutputCache(Duration = 5, VaryByParam = "none")]
//[OutputCache(Duration = 60, VaryByParam = "gamerName")]
//public ActionResult Index5(string gamerName)
//{
//    ViewBag.GamerName = gamerName ?? string.Empty;
//    return View();
//}
3.1.
When the action has no [HttpGet] or [HttpPost],
that means it can be booth [HttpGet] and [HttpPost] action.
3.2.
In the Views/Gamer/Index3.cshtml
//<b>@ViewBag.GamerName</b>.
//<input type="text" name="gamerName"/>
the ViewBag.GamerName will display whatever you type in the textbox.
3.3.
```



```
//[OutputCache(Duration = 5, VaryByParam = "none")]
When we first time navigate to /Gamer/Index5,
The view output cache will remain for 5 seconds.
In the Views/Gamer/Index3.cshtml
//<b>@ViewBag.GamerName</b>.
//<input type="text" name="gamerName"/>
the ViewBag.GamerName will display whatever you type in the textbox for the first time.
During that 5 seconds, no matter what you input to that text textbox,
ViewBag.GamerName will remain the same as you input for the first time.
After that 5 seconds, the cache will be expired.
the ViewBag.GamerName will display whatever you type in the textbox again.
The way to fix this issue is using
//[OutputCache(Duration = 60, VaryByParam = "gamerName")]
3.4.
//[OutputCache(Duration = 60, VaryByParam = "gamerName")]
In the Views/Gamer/Index3.cshtml
//<b>@ViewBag.GamerName</b>.
//<input type="text" name="gamerName"/>
the ViewBag.GamerName will display whatever you type in the textbox.
Since "VaryByParam" is set to "gamerName",
All different responses will be cached for this Web form
*/
```

5.2. Views/Gamer/Index5.cshtml

```
@using System.Globalization
@{
    ViewBag.Title = "Gamer Index5";
}
<h2>ViewBag.Title</h2>
<p>
    Gamers retrieved At @DateTime.Now.ToString(CultureInfo.InvariantCulture)
</p>
<b>Server side Time : @ViewBag.ServerTime</b><br />
<b>
    <script type="text/javascript">
        document.write("Client Side Time : " + Date());
    </script>
</b>
<b>@ViewBag.GamerName</b>
@using (Html.BeginForm("Index5", "Gamer"))
{
    <input type="text" name="gamerName" />
    <input type="submit" />
}
```

ViewBag.Title

Gamers retrieved At 02/19/2018 23:30:31

Server side Time : 02/19/2018 23:30:31

Client Side Time : Mon Feb 19 2018 23:30:32 GMT+1000 (E. Australia Standard Time)

6. OnlineGame.Web : Location= OutputCacheLocation.Any

6.1. Controllers/GamerController.cs

```
// GET: Gamer
[HttpGet]
[OutputCache(Duration = 10)]
//[OutputCache(Duration = 10, VaryByParam = "None", Location = OutputCacheLocation.ServerAndClient)]
//[OutputCache(Duration = 10, VaryByParam = "None", Location = OutputCacheLocation.Client)]
public async Task<ActionResult> Index2()
{
    System.Threading.Thread.Sleep(3000);
    ViewBag.ServerTime = DateTime.Now.ToString(CultureInfo.InvariantCulture);
    return View(await db.Gamers.ToListAsync());
}
```

```
[HttpGet]
//[OutputCache(Duration = 10, VaryByParam = "None", Location = OutputCacheLocation.None)]
//[OutputCache(Duration = 10, VaryByParam = "None", Location= OutputCacheLocation.Server)]
[OutputCache(Duration = 10, VaryByParam = "None", Location = OutputCacheLocation.ServerAndClient)]
public ActionResult Index7()
{
    ViewBag.ServerTime = DateTime.Now.ToString(CultureInfo.InvariantCulture);
    return View();
}
```

```
/*
4.
//[OutputCache(Duration = 10, VaryByParam = "None", Location = OutputCacheLocation.ServerAndClient)]
//public ActionResult Index7()
4.1.
There are 3 locations option can store the cached response, Server, Client, and Proxy server.
4.1.1.
//OutputCacheLocation.Any
By default, cached response is at any available locations.
4.1.2.
//OutputCacheLocation.Client
4.1.3.
OutputCacheLocation.Downstream
Any HTTP 1.1 devices which includes proxy servers.
4.1.4.
//OutputCacheLocation.None
Do not store cache.
4.1.5.
//OutputCacheLocation.Server
4.1.6.
//OutputCacheLocation.ServerAndClient
*/
```

6.2. Views/Gamer/Index7.cshtml

```
@{
    ViewBag.Title = "Gamer Index7";
}
<h2>Gamer Index7</h2>
<b>Server side Time : @ViewBag.ServerTime</b><br/>
<b>
    <script type="text/javascript">
        document.write("Client Side Time : " + Date());
    </script>
</b>
```

6.3. Views/Gamer/Index2.cshtml

```
@using System.Globalization
@model IEnumerable<OnlineGame.Web.Models.Gamer>
@{
    ViewBag.Title = "Gamer Index2";
}
<h2>Gamer Index2</h2>
<p>
    @Html.ActionLink("Create New", "Create")
</p>
<b>Server side Time : @ViewBag.ServerTime</b><br />
<b>
    <script type="text/javascript">
        document.write("Client Side Time : " + Date());
    </script>
</b>
<p>
    Gamers retrieved At @DateTime.Now.ToString(CultureInfo.InvariantCulture)
</p>
<table class="table">
    <tr>
        <th>
            @Html.DisplayNameFor(model => model.Name)
        </th>
        <th>
            @Html.DisplayNameFor(model => model.Gender)
        </th>
        <th>
            @Html.DisplayNameFor(model => model.EmailAddress)
        </th>
        <th></th>
    </tr>
    @foreach (var item in Model)
    {
        <tr>
            <td>
                @Html.DisplayFor(modelItem => item.Name)
            </td>
            <td>
```

```

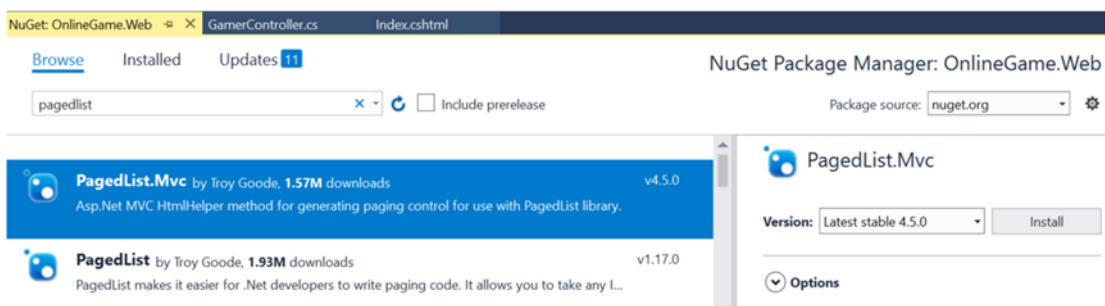
        @Html.DisplayFor(modelItem => item.Gender)
    </td>
    <td>
        @Html.DisplayFor(modelItem => item.EmailAddress)
    </td>
    <td>
        @Html.ActionLink("Edit", "Edit", new { id = item.Id }) |
        @Html.ActionLink("Details", "Details", new { id = item.Id }) |
        @Html.ActionLink("Delete", "Delete", new { id = item.Id })
    </td>
</tr>
}
</table>

```

7. OnlineGame.Web - VaryByParam with GridView

7.1. Install NuGet Package

When we install "**PagedList.Mvc**", it will automatically install "**PagedList**".



7.2. Controllers/GamerController.cs

```

//From T013
// GET: Gamer
[HttpGet]
///1.
//[OutputCache(Duration = 5, VaryByParam = "none")]
///It means always cache the same contents.
///2.
//[OutputCache(Duration = 60, VaryByParam = "*")]
///It means for cache for every parameters,
///this is dangerous because of the view might have too many parameters.
///3.
[OutputCache(Duration = 60, VaryByParam = "searchBy;searchText;pageNumber;sortBy")]

```

```

public async Task<ActionResult> Index6(string searchBy, string searchText, int? pageNumber, string sortBy)
{
    ViewBag.NameSort = String.IsNullOrEmpty(sortBy) ? "Name desc" : "";
    ViewBag.GenderSort = sortBy == "Gender" ? "Gender desc" : "Gender";
    List<Gamer> gamers = await db.Gamers.ToListAsync();
    if (searchBy == "Gender")
    {
        gamers = await db.Gamers
            .Where(x => x.Gender == searchText || searchText == null)
            .ToListAsync();
    }
    if (searchBy == "Name")
    {
        gamers = await db.Gamers
            .Where(x => x.Name.Contains(searchText) || searchText == null)
            .ToListAsync();
    }
    IOrderedEnumerable<Gamer> gamersOrderedEnumerable;
    switch (sortBy)
    {
        case "Name desc":
            gamersOrderedEnumerable = gamers.OrderByDescending(x => x.Name);
            break;
        case "Gender desc":
            gamersOrderedEnumerable = gamers.OrderByDescending(x => x.Gender);
            break;
        case "Gender":
            gamersOrderedEnumerable = gamers.OrderBy(x => x.Gender);
            break;
        default:
            gamersOrderedEnumerable = gamers.OrderBy(x => x.Name);
            break;
    }
    //1.
    //The first parameter is pagenumber
    //pageNumber ?? 1 means if the pageNumber==null, then pageNumber==1
    //2.
    //The 2nd parameter is page size.
    //We set page size is 5.
    //IPagedList<Gamer> gamerPagedList = gamers.ToPagedList(pageNumber ?? 1, 5);
    IPagedList<Gamer> gamerPagedList = gamersOrderedEnumerable.ToPagedList(pageNumber ?? 1, 5);
    ViewBag.ServerTime = DateTime.Now.ToString(CultureInfo.InvariantCulture);
    return View(gamerPagedList);
}
//From T013
[HttpPost]
public async Task<ActionResult> DeleteMultiple(IEnumerable<int>
GamerIdsToDelete, string searchBy, string searchText, int? pageNumber, string sortBy)
{
    //Delete a list of gamers
    List<Gamer> gamers = await db.Gamers.Where(g => GamerIdsToDelete.Contains(g.Id)).ToListAsync();
    gamers.ForEach(g => db.Gamers.Remove(g));
    await db.SaveChangesAsync();
    //Remove OutputCache
    //Reference:
    //http://www.c-sharpcorner.com/code/1994/how-to-clear-output-cache-in-asp-net-mvc.aspx
    //https://forums.asp.net/t/2077235.aspx?How+to+clear+OutPutCache+Asp+net+Mvc

```

```

//1. Get the url for the action method:
string staleItem = Url.Action("Index6", "Gamer");
//2. Remove the item from cache
if (staleItem != null) Response.RemoveOutputCacheItem(staleItem);
return RedirectToAction("Index6", new { searchBy, searchText, pageNumber, sortBy });
}

```

7.3. Views/Gamer/Index6.cshtml

```

@using System.Globalization
@using OnlineGame.Web.Models
@using PagedList
@using PagedList.Mvc
@* @model IEnumerable<Gamer> *@
@model IPagedList<Gamer>
@{
    ViewBag.Title = "Gamer Index6";
}
<script src="~/Scripts/jquery-1.10.2.min.js" type="text/javascript"></script>
<script type="text/javascript" language="javascript">
    $(function () {
        $('#SelectAll').click(function () {
            $("input[name='GamerIdsToDelete']").prop("checked", this.checked);
            //1.
            //this.checked means $("#SelectAll").checked
            //if $("#SelectAll").checked==true, then
            //$("input[name='GamerIdsToDelete']").prop("checked", true);
            //if $("#SelectAll").checked==false, then
            //$("input[name='GamerIdsToDelete']").prop("checked", false);
            //2.
            //$("input[name='GamerIdsToDelete']") will select all the elements which
name==GamerIdsToDelete.
            //$("input['#GamerIdsToDelete']") will select all only one element which Id==GamerIdsToDelete.
            $("input[name='GamerIdsToDelete']").click(function () {
                if ($("input[name='GamerIdsToDelete']").length ===
$("input[name='GamerIdsToDelete']:checked").length) {
                    $("#SelectAll").prop("checked", "checked");
                }
                else {
                    $("#SelectAll").removeProp("checked");
                }
            });
            //1.
            //When any of name==GamerIdsToDelete elements has been ckicked,
            //if all input[name='GamerIdsToDelete'] have been checked,
            //then the $("#SelectAll") must be checked.
            //Otherwise, the $("#SelectAll") is un-checked.
        });
        $("#btnDeleteSelected").click(function () {
            var count = $("input[name='GamerIdsToDelete']:checked").length;
            if (count === 0) {
                alert("Please select items to delete.");
            }
        });
    });
}

```

```

        return false;
    }
    else {
        return confirm(count + " row(s) will be deleted. Are you sure to continue.");
    }
});
});
</script>

```

```

<h2>@ViewBag.Title</h2>
<p>
    Gamers retrieved At @DateTime.Now.ToString(CultureInfo.InvariantCulture)
</p>
<b>Server side Time : @ViewBag.ServerTime</b><br />
<b>
    <script type="text/javascript">
        document.write("Client Side Time : " + Date());
    </script>
</b>
<p>
    @Html.ActionLink("Create New", "Create")
</p>
<p>
    @using (Html.BeginForm("Index6", "Gamer", FormMethod.Get))
    {
        <b>Search By:</b><br />
        @Html.RadioButton("searchBy", "Name", true) <text>Name</text>
        @Html.RadioButton("searchBy", "Gender") <text>Gender</text><br />
        @Html.TextBox("searchText") <br />
        <input type="submit" value="Go" />
    }
</p>
@using (Html.BeginForm("DeleteMultiple", "Gamer", new
{
    searchBy = Request.QueryString["searchBy"],
    searchText = Request.QueryString["searchText"],
    pageNumber = Request.QueryString["pageNumber"],
    sortBy = Request["sortBy"] //Request from ViewBag
}, FormMethod.Post))
{
    <table class="table">
        <tr>
            <th>
                <input type="checkbox" name="SelectAll" id="SelectAll" />
            </th>
            <th>
                @*@Html.DisplayNameFor(model => model.Name)*@
                @*@Html.DisplayNameFor(model => model.First().Name)*@
                @Html.ActionLink("Name", "Index6", new
                {
                    sortBy = ViewBag.NameSort,
                    searchBy = Request.QueryString["searchBy"],
                    searchText = Request.QueryString["searchText"],
                })
                @*<a href="/?sortBy=Name%20desc">Name</a>*@
            </th>
            <th>
                @*@Html.DisplayNameFor(model => model.Gender)*@

```

```

        @*@Html.DisplayNameFor(model => model.First().Gender)*@
        @Html.ActionLink("Gender", "Index6", new
        {
            sortBy = ViewBag.GenderSort,
            searchBy = Request.QueryString["searchBy"],
            searchText = Request.QueryString["searchText"],
        })
        @*<a href="/?sortBy=Gender">Gender</a>*@
    </th>
    <th>
        @*@Html.DisplayNameFor(model => model.EmailAddress)*@
        @Html.DisplayNameFor(model => model.First().EmailAddress)
    </th>
    <th>
        Action
    </th>
</tr>
@if (!Model.Any())
{
    <tr>
        <td colspan="5">
            No matched records.
        </td>
    </tr>
}
@foreach (Gamer item in Model)
{
    <tr>
        <td>
            <input type="checkbox" name="GamerIdsToDelete" id="GamerIdsToDelete" value="@item.Id" />
        </td>
        <td>
            @Html.DisplayFor(modelItem => item.Name)
        </td>
        <td>
            @Html.DisplayFor(modelItem => item.Gender)
        </td>
        <td>
            @Html.DisplayFor(modelItem => item.EmailAddress)
        </td>
        <td>
            @Html.ActionLink("Edit", "Edit", new { id = item.Id }) |
            @Html.ActionLink("Details", "Details", new { id = item.Id }) |
            @Html.ActionLink("Delete", "Delete", new { id = item.Id })
        </td>
    </tr>
}
<tr>
    <td colspan="5">
        <input type="submit" value="Delete
Selected" id="btnDeleteSelected" name="btnDeleteSelected" />
    </td>
</tr>
</table>
}

```



```

@*@Html.PagedListPager(Model, pageNumber => Url.Action("Index6",
    new
    {
        //pageNumber = pageNumber,
        pageNumber,
        searchBy = Request.QueryString["searchBy"],
        searchText = Request.QueryString["searchText"]
    }))*)
@*@Html.PagedListPager(Model, pageNumber => Url.Action("Index6",
    new
    {
        //pageNumber = pageNumber,
        pageNumber,
        searchBy = Request.QueryString["searchBy"],
        searchText = Request.QueryString["searchText"]
    })),
    new PagedListRenderOptions{ Display = PagedListDisplayMode.IfNeeded })*)
@*@Html.PagedListPager(Model, pageNumber => Url.Action("Index6",
    new
    {
        //pageNumber = pageNumber,
        pageNumber,
        searchBy = Request.QueryString["searchBy"],
        searchText = Request.QueryString["searchText"]
    })),
    new PagedListRenderOptions
    {
        Display = PagedListDisplayMode.IfNeeded,
        DisplayPageCountAndCurrentLocation = true
    })*)
@Html.PagedListPager(Model, pageNumber => Url.Action("Index6",
    new
    {
        //pageNumber = pageNumber,
        pageNumber,
        searchBy = Request.QueryString["searchBy"],
        searchText = Request.QueryString["searchText"],
        sortBy = Request["sortBy"] //Request from ViewBag
    })),
    new PagedListRenderOptions
    {
        Display = PagedListDisplayMode.IfNeeded,
        DisplayPageCountAndCurrentLocation = true,
        DisplayItemSliceAndTotal = true
    })

```

@*

```

1.
//@Html.PagedListPager(Model, pageNumber => Url.Action("Index6",
//    new {
//        //pageNumber = pageNumber,
//        pageNumber,
//        searchBy = Request.QueryString["searchBy"],
//        searchText = Request.QueryString["searchText"] })))

```

1.1.

The PagedListPager() 1st parameter is IPagedList which is the collection of gamers of current page.

1.2.

The PagedListPager() 2nd parameter is Func<int,string> generatePageURL which we use Url.Action() to generate the Func<int,string>.

In this case, Func<int,string> means that the input parameter is int, and the output is a string.

1.2.1.

The input parameter is the pageNumber which comes from the query string.

1.2.2.

The output is a string which is the generatePageURL.

In this case, it is `Url.Action()`.

1.2.2.1.

The `Url.Action()` 1st parameter is action name which is "Index6" action.

1.2.2.2.

The `Url.Action()` 2nd parameter is the route value.

1.2.2.2.1.

`searchBy` parameter should come from the query string, `Request.QueryString["searchBy"]`.

1.2.2.2.2.

`searchText` parameter should come from the query string, `Request.QueryString["searchText"]`.

1.3.

It will display the page number even there is only one page.

2.

```
//@Html.PagedListPager(Model, pageNumber => Url.Action("Index6",
//    new
//    {
//        //pageNumber = pageNumber,
//        pageNumber,
//        searchBy = Request.QueryString["searchBy"],
//        searchText = Request.QueryString["searchText"]
//    }),
//    new PagedListRenderOptions{ Display = PagedListDisplayMode.IfNeeded })
```

2.1.

```
//Display = PagedListDisplayMode.IfNeeded,
It will hide the page number when there is only one page,
because only one page means no need paging.
```

3.

```
//@Html.PagedListPager(Model, pageNumber => Url.Action("Index6",
//    new
//    {
//        //pageNumber = pageNumber,
//        pageNumber,
//        searchBy = Request.QueryString["searchBy"],
//        searchText = Request.QueryString["searchText"]
//    }),
//    new PagedListRenderOptions
//    {
//        Display = PagedListDisplayMode.IfNeeded,
//        DisplayPageCountAndCurrentLocation = true
//    })
```

3.1.

```
//Display = PagedListDisplayMode.IfNeeded,
It will hide the page number when there is only one page,
because only one page means no need paging.
```

3.2.

```
//DisplayPageCountAndCurrentLocation = true
It will display "Page 1 of 3"
```

4.

```
//@Html.PagedListPager(Model, pageNumber => Url.Action("Index6",
//    new
//    {
//        //pageNumber = pageNumber,
//        pageNumber,
//        searchBy = Request.QueryString["searchBy"],
//        searchText = Request.QueryString["searchText"]
//    }),
//    new PagedListRenderOptions
//    {
//        Display = PagedListDisplayMode.IfNeeded,
//        DisplayPageCountAndCurrentLocation = true,
//        DisplayItemSliceAndTotal = true
//    })
```

4.1.

```
//Display = PagedListDisplayMode.IfNeeded,
It will hide the page number when there is only one page,
because only one page means no need paging.
4.2.
//DisplayPageCountAndCurrentLocation = true
It will display "Page 1 of 3"
4.3.
//DisplayItemSliceAndTotal = true
It will display "Showing items 6 through 7 of 7"
-----
5.
//@Html.ActionLink("Name", "Index6", new
//    {
//        sortBy = ViewBag.NameSort,
//        searchBy = Request.QueryString["searchBy"],
//        searchText = Request.QueryString["searchText"],
//    })
...
//@Html.ActionLink("Gender", "Index6", new
//    {
//        sortBy = ViewBag.GenderSort,
//        searchBy = Request.QueryString["searchBy"],
//        searchText = Request.QueryString["searchText"],
//    })
5.1.
When http://localhost:52319/Gamer/Index6
//<a href="/?sortBy=Name%20desc">Name</a>
//<a href="/?sortBy=Gender">Gender</a>
5.2.
http://localhost:52319/?searchBy=Gender&searchText=Male
//<a href="/?sortBy=Name%20desc">Name</a>
//<a href="/?sortBy=Gender">Gender</a>
5.3.
http://localhost:52319/?sortBy=Name%20desc&searchBy=Gender&searchText=Male
//<a href="/?searchBy=Gender&searchText=Male">Name</a>
//<a href="/?sortBy=Gender&searchBy=Gender&searchText=Male">Gender</a>
* @
```

Gamer Index6

Gamers retrieved At 02/20/2018 12:47:02

Server side Time : 02/20/2018 12:47:02

Client Side Time : Tue Feb 20 2018 12:47:03 GMT+1000 (E. Australia Standard Time)

[Create New](#)

Search By:

☒ Name ☐ Gender

<input type="checkbox"/>	Name	Gender	EmailAddress	Action
<input type="checkbox"/>	Name01 ABB	Male	1@AAA.com	Edit Details Delete
<input type="checkbox"/>	Name02 CDDE	Female	2@BBB.com	Edit Details Delete
<input type="checkbox"/>	Name03 FIJK	Female	3@CCCC.com	Edit Details Delete
<input type="checkbox"/>	Name04 LMOPPQ	Male	4@DD.com	Edit Details Delete
<input type="checkbox"/>	Name05 QRSTT	Male	5@EEE.com	Edit Details Delete

Page 1 of 4. Showing items 1 through 5 of 20. [1](#) [2](#) [3](#) [4](#) [»](#)

8. Output Cache Settings

1.

VaryByParam

1.1.

Vary by "*"

```
//[OutputCache(Duration = 60, VaryByParam = "*")]
```

It means for cache for every parameters,
it is dangerous because of the view might have too many parameters.

1.2.

Vary by "None"

```
//[OutputCache(Duration = 5, VaryByParam = "none")]
```

It means always cache the same contents.

1.3.

Vary by "Name"

```
//[OutputCache(Duration = 60, VaryByParam = "pageNumber")]
```

```
//[OutputCache(Duration = 60, VaryByParam = "searchBy;searchText;pageNumber;sortBy")]
```

It means for cache for every value of name parameters.

2.

Location

```
//[OutputCache(Duration = 10, VaryByParam = "None", Location = OutputCacheLocation.ServerAndClient)]
```

There are 3 locations option can store the cached response, Server, Client, and Proxy server.

2.1.

```
//OutputCacheLocation.Any
```

By default, cached response is at any available locations.

2.2.

```
//OutputCacheLocation.Client
```

2.3.

```
OutputCacheLocation.Downstream
```

Any HTTP 1.1 devices which includes proxy servers.

2.4.

```
//OutputCacheLocation.None
```

Do not store cache.

2.5.

```
//OutputCacheLocation.Server
```

2.6.

```
//OutputCacheLocation.ServerAndClient
```

3.

VaryByHeader

It will cache on an HTTP header. E.g. Accept-Language.

4.

VaryByCustom

It need the implementation of custom method in global.asax.

5.

SqlDependency

It will cache everything until the data in a Sql server table changes.