

(T21)總複習 Cdn、Ajax、JqueryUi、AutoComplete

(T21-1)總複習 CDN Part1 (1. to 2.8.2.)

(T21-2)總複習 CDN Part2 (2.8.3. to 3.)

(T21-3)討論 Ajax (4.)

(T21-4)討論 JqueryUi、AutoComplete (5.)

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=====

0. Summary

In this tutorial, we will discuss

- * Ajax
- * JQueryUi
- * AutoComplete

* CDN

總複習，完全攻略 CDN，Ajax，Jquery UI AutoComplete。

* 整套課程的總複習。

* CDN 是啥？

* 完美攻略 AJAX 還有 Jquery UI AutoComplete。

0.

Regular expression

<https://regexr.com/>

1.

Asynchronous JavaScript And XML (AJAX) can do partial page updates without reloading the entire page.

1.1.

Good at AJAX

1.1.1.

Ajax application has no blocking.

AJAX applications will allow users to interact with the rest of page while the server is still processing the partial page.

1.1.2.

No screen flicker.

AJAX **reduced network traffic** and get **better performance**,

because AJAX can do partial page updates without reloading the entire page and screen flickers.

Therefore, AJAX application is **no screen flicker application**.

1.2.

Bad at AJAX

1.2.1.

AJAX relies on JavaScript. If users disable JavaScript, then AJAX will not work.

1.2.2.

AJAX update the part of page, so the URL will not change,

so it can not be bookmarked easily and hard to debug.

In addition, Search Engine like Google can not index AJAX pages.

1.3.

Features which is usually implemented by AJAX

1.3.1.

AutoComplete feature

E.g. Google, bing

1.3.2.

AutoSave feature

E.g. Gmail

1.3.3.

Remote validation feature

E.g. When you register as a new user of Gmail, Gmail validate if the username is already in use.

1.3.4.

Auto Load feature

E.g. When you keep scrolling down on Facebook, it will keep loading data without change the URL.

2.

JavaScript minification

2.1.

"jquery-1.12.4.min.js" is the minified version of "jquery-1.12.4.js",

the functionality of the minified version will be the same as the non-minified version.
Minified version remove comments, extra white spaces new line characters and use shorter variable names, so minified version has smaller size and is faster during network transaction.
If you want to minify your javascript file, you may google "minify js" keyword.
You may find a lot of minifying tools.

<https://jscompress.com/>
<https://javascript-minifier.com/>
<https://www.minifier.org/>
<https://www.danstools.com/javascript-minify/>

2.2.

Minified version is hard to debug.

During developing, developer use **non-minified version**.

When publishing the website, we use minified version.

3.

JavaScript cdn version

Content Delivery Network (CDN) is a network of computers that exist all over the world.

E.g.

This is the way to import jquery ui

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

This is the jquery ui cdn version.

<https://code.jquery.com/ui/1.12.1/jquery-ui.min.js>

Thus, you may import the jquery ui as following.

```
<script src="https://code.jquery.com/ui/1.12.1/jquery-ui.min.js"></script>
```

There is no different between import jquery ui cdn version of local version.

In most companies, they ask developer use non-cdn version,

because the cdn version might be down someday.

=====

1. OnlineGame DB

1.0. Some points

Regular expression

<https://regexr.com/>

1.1. TSQL

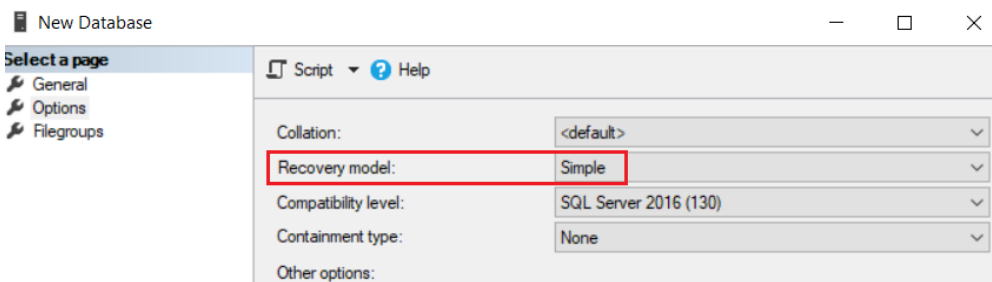
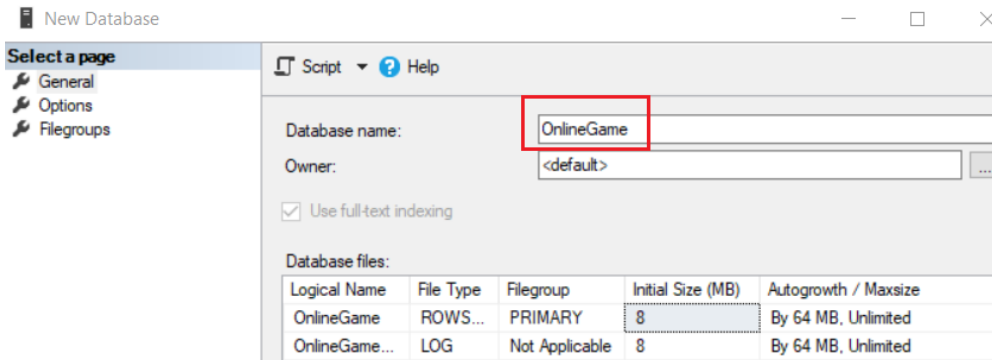
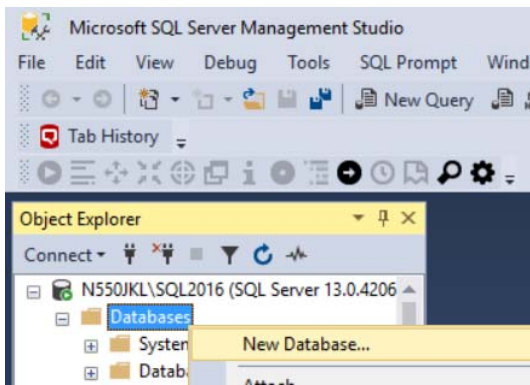
In SQL server Management Studio (SSMS)

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 Tables
CREATE TABLE Gamer
(
    Id INT PRIMARY KEY
        IDENTITY(1, 1)
        NOT NULL ,
    [Name] NVARCHAR(100) NOT NULL ,
    Gender NVARCHAR(10) NOT NULL ,
    Score INT NOT NULL ,
```

```

GameMoney INT NOT NULL,
);
GO -- Run the previous command and begins new batch
--3. Insert Data
INSERT Gamer
VALUES ( N'NameOne ABB', N'Male', 3500, 1000 );
INSERT Gamer
VALUES ( N'NameTwo CDDE', N'Female', 1500, 3500 );
INSERT Gamer
VALUES ( N'NameThree FIJK', N'Female', 4000, 2500 );
INSERT Gamer
VALUES ( N'NameFour LMOPPQ', N'Male', 2500, 2500 );
INSERT Gamer
VALUES ( N'NameFive QRSTT', N'Male', 3500, 2500 );
INSERT Gamer
VALUES ( N'NameSix TUVVX', N'Female', 2500, 3500 );
INSERT Gamer
VALUES ( N'NameSeven XYZZX', N'Female', 4550, 4000 );
INSERT Gamer
VALUES ( N'NameEight ABBCDE', N'Male', 3550, 2500 );
INSERT Gamer
VALUES ( N'NameNine QRSTTUVXX', N'Male', 2510, 3500 );
INSERT Gamer
VALUES ( N'NameTen AASSVV', N'Male', 3560, 2600 );
INSERT Gamer
VALUES ( N'NameEleven TTBBDD', N'Female', 2650, 1500 );
INSERT Gamer
VALUES ( N'NameTwelve GHSDSWE', N'Male', 4580, 1234 );
INSERT Gamer
VALUES ( N'NameThirteen FSWC', N'Male', 5800, 3500 );
INSERT Gamer
VALUES ( N'NameFourteen QWDEC', N'Male', 1200, 6500 );
INSERT Gamer
VALUES ( N'NameFifteen SSDBV', N'Male', 2300, 4200 );
INSERT Gamer
VALUES ( N'NameSixteen TTNSD', N'Male', 44500, 3500 );
INSERT Gamer
VALUES ( N'NameEighteen MGFD', N'Female', 2100, 1200 );
INSERT Gamer
VALUES ( N'NameNineteen DBTC', N'Female', 2600, 3500 );
INSERT Gamer
VALUES ( N'NameTwenty YUKFD', N'Male', 3600, 2600 );
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

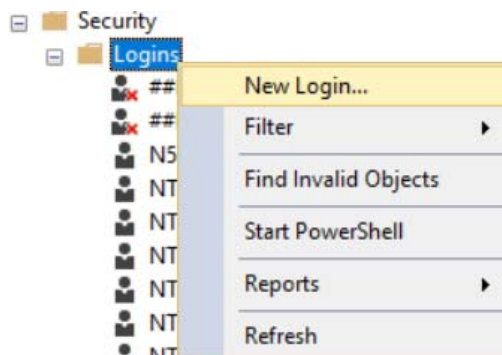
sysadmin

-->

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

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

Connection

Server:
N550JKL\SQL2016

Connection:
N550JKL\pmp1

View connection properties

Progress

Ready

OK

Cancel

Login Properties - Tester

Select a page

General

Server Roles

User Mapping

Securables

Status

Script

Help

Users mapped to this login:

Map	Database	User	Default Schema
<input type="checkbox"/>	Movie3		
<input type="checkbox"/>	NORTHWND		
<input type="checkbox"/>	Northwind		
<input type="checkbox"/>	Report.Server\$SQL2016		
<input type="checkbox"/>	Report.Server\$SQL20...		
<input checked="" type="checkbox"/>	Sample	Tester	dbo
<input type="checkbox"/>	master		
<input type="checkbox"/>	model		
<input type="checkbox"/>	msdb		
<input type="checkbox"/>	tempdb		

Guest account enabled for: Sample

Database role membership for: Sample

☒ db_accessadmin

☒ db_backupoperator

☒ db_datareader

☒ db_datawriter

☒ db_ddladmin

☒ db_denydatareader

☒ db_denydatawriter

☒ db_owner

☒ db_securityadmin

☒ public

Connection

Server:
N550JKL\SQL2016

Connection:
N550JKL\pmp1

View connection properties

Progress

Ready

OK

Cancel

2. OnlineGame Solution

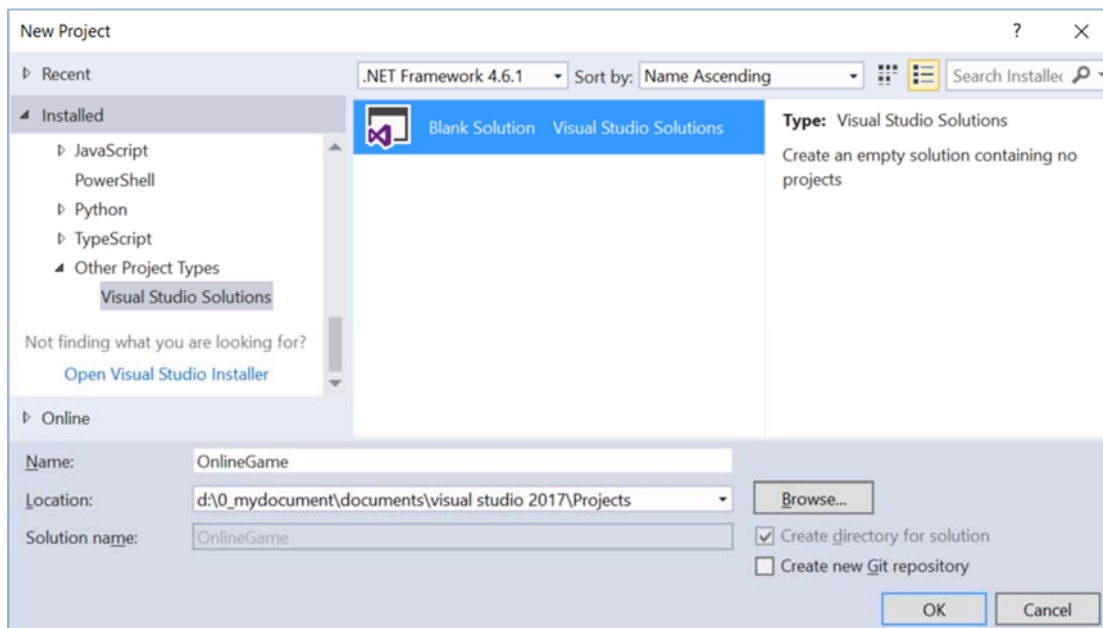
2.1. OnlineGame Solution

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

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

-->

Name: **OnlineGame**



2.2. OnlineGame.Web

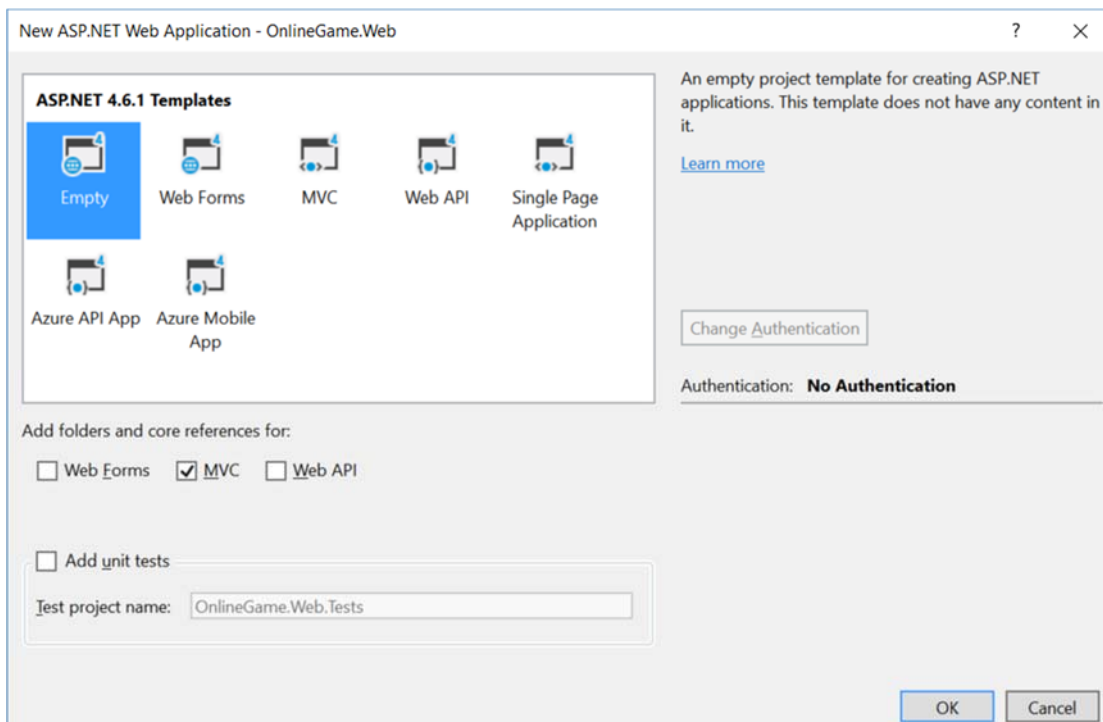
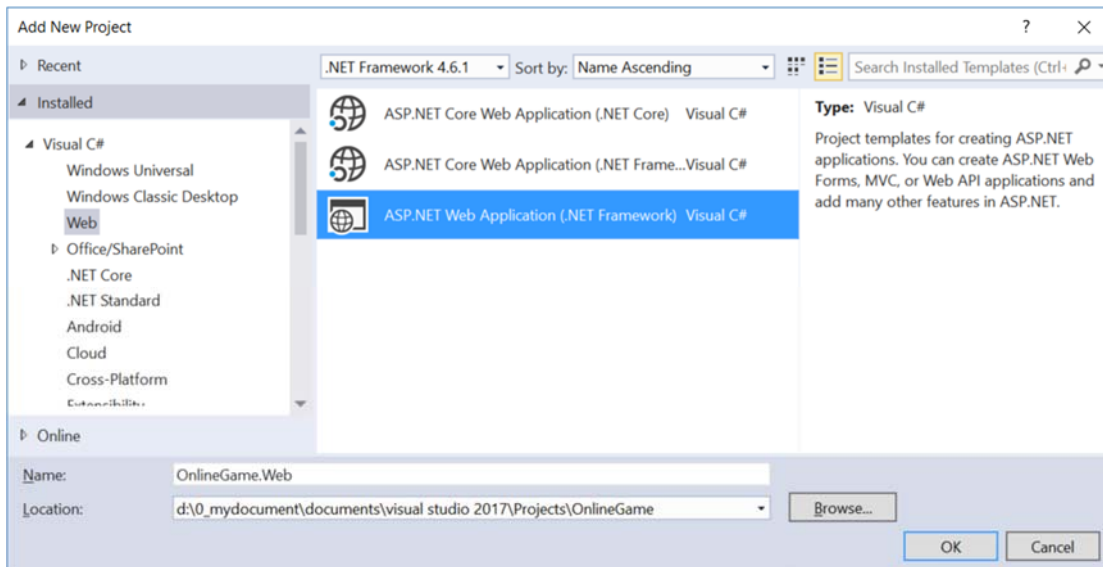
Solutions Name --> Add --> New Project -->

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

-->

Name: **OnlineGame.Web**

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



2.3. Web.config

2.3.1. Web.config

```
Web.config  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   <add key="ApplicationName" value="Online Game Web" />
17 </appSettings>
18 <system.web>
19   <compilation debug="true" targetFramework="4.6.1" />
20   <httpRuntime targetFramework="4.6.1" />
21   <globalization culture="en-au" uiCulture="en-AU" />
22   <customErrors mode="On">
23     <error statusCode="401" redirect="Error/UnauthorizedError" />
24     <error statusCode="404" redirect="Error/NotFound" />
25     <error statusCode="500" redirect="Error/InternalServerError" />
26   </customErrors>
27   <outputCache>
28     <outputCacheSettings>
29       <outputCacheProfiles>
30         <clear />
31         <add name="outputCacheProfile1" duration="60" varyByParam="none" />
32       </outputCacheProfiles>
33     </outputCacheSettings>
34   </outputCache>
35 </system.web>
36 </>
```

```
<appSettings>
  <add key="webpages:Version" value="3.0.0.0" />
  <add key="webpages:Enabled" value="false" />
  <add key="ClientValidationEnabled" value="true" />
  <add key="UnobtrusiveJavaScriptEnabled" value="true" />
  <add key="ApplicationName" value="Online Game Web" />
</appSettings>
<system.web>
  <compilation debug="true" targetFramework="4.6.1" />
  <httpRuntime targetFramework="4.6.1" />
  <globalization culture="en-au" uiCulture="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>
```

2.3.2. The way to use key of Web.config in a class

```
private static string _applicationName
= System.Configuration.ConfigurationManager.AppSettings["ApplicationName"];
```

2.3.3. The way to use key of in view

```
@Html.ActionLink(System.Configuration.ConfigurationManager.AppSettings["ApplicationName"], "Index", "Gamer", new { area = "" }, new { @class = "navbar-brand" })
```

2.4. WebShare/WebShareConst.cs

```
namespace OnlineGame.Web.WebShare
{
    public class WebShareConst
    {
        public const string DateFormat = "dd/MM/yyyy";
        public const string DateFormatJavascriptString = "dd/mm/yy";
        public const string DateStringFormat = "{0:dd/MM/yyyy}";

        //RegularExpression
        //https://regexr.com/
        public const string FirstNameLastNameRegularExpression = @"^(([A-Za-z]+\s){1}[A-Za-z]+)|([A-Za-z]+))$";
        public const string EmailRegularExpression = @"^\w-\.\_+%]+@(\?:[\w-]+\.)+[\w]{2,6}$";

        //Validation String
        public const string EmailNotValid = "Email is not valid";
        public const string FirstNameLastNameNotValid = "Please enter first name or first name and last name.";
        public const string EmailHasBeenTaken = "The email has already been taken.";
        public const string ValidationSummaryTitleString = "Please check the following fields.";
    }
}
```

2.5. Global.asax.cs

```
using System.Web.Mvc;
using System.Web.Routing;
using OnlineGame.Web;
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);

////Enable Unobtrusive validation
//HtmlHelper.UnobtrusiveJavaScriptEnabled = true;
//HtmlHelper.ClientValidationEnabled = true;
}
}
}

```

2.6. 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-ignoreroresource-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.

```
*/
```

2.7. Error Handling

2.7.1. Web.config

Check the following code in Web.config

```
<customErrors mode="On">
  <error statusCode="401" redirect="Error/UnauthorizedError" />
  <error statusCode="404" redirect="Error/NotFound" />
  <error statusCode="500" redirect="Error/InternalServerError" />
</customErrors>
```

2.7.2. App_Start/FilterConfig.cs

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

```

namespace OnlineGame.Web
{
    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
*/

```

2.7.3. Global.asax.cs

Check the following code in Global.asax.cs

```

//Register HandleErrorAttribute to global filter
FilterConfig.RegisterGlobalFilters(GlobalFilters.Filters);

```

2.7.4. 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"
    }
}

```

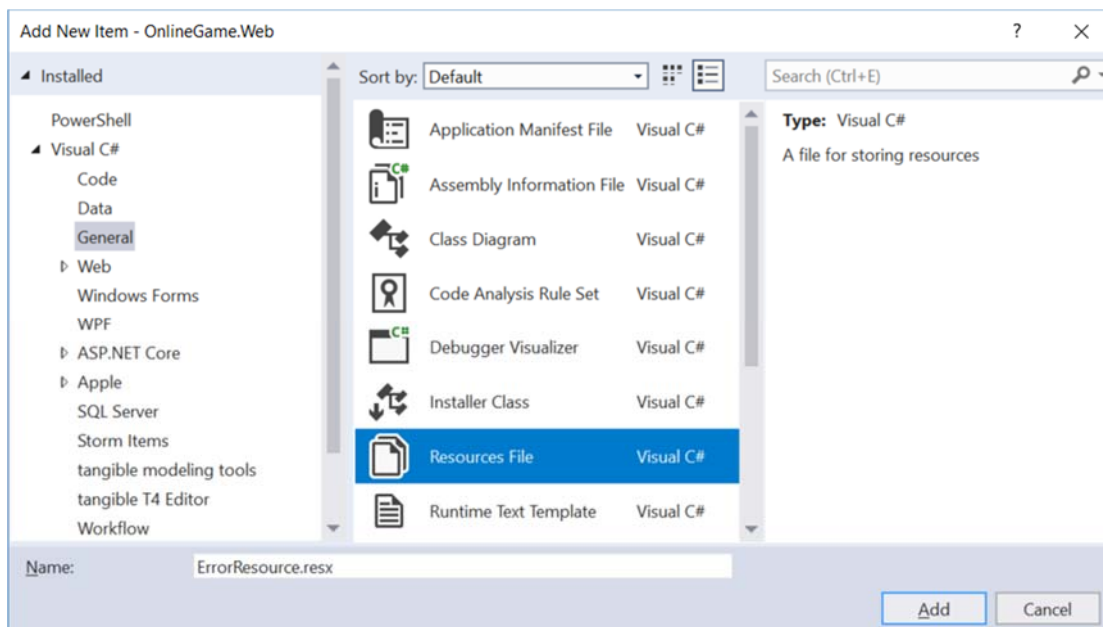
```

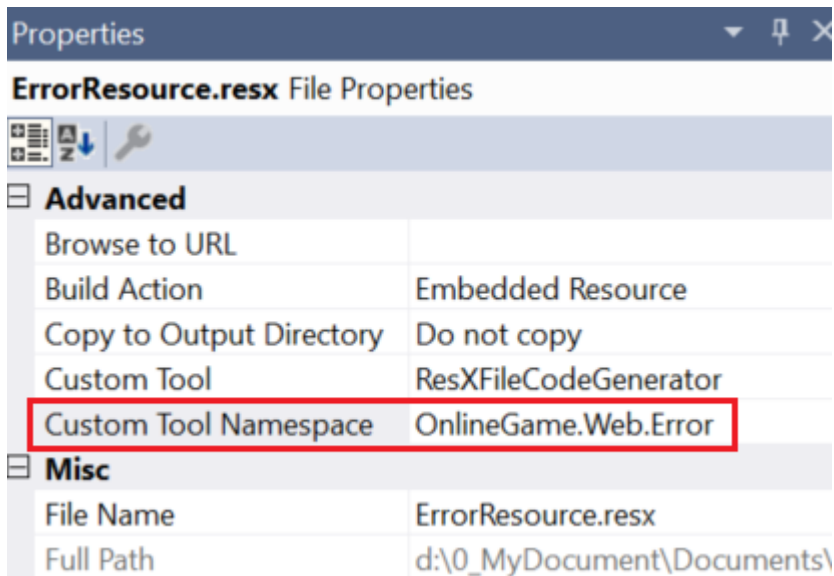
[HttpGet]
public ActionResult InternalServerError()
{
    return View();
}
}
}
/*
1.
In the Web.config
//<customErrors mode="On" defaultRedirect="Error/DefaultError">
//    <error statusCode="401" redirect="Error/UnauthorizedError" />
//    <error statusCode="404" redirect="Error/NotFound" />
//    <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>
*/

```

2.7.5. Error View

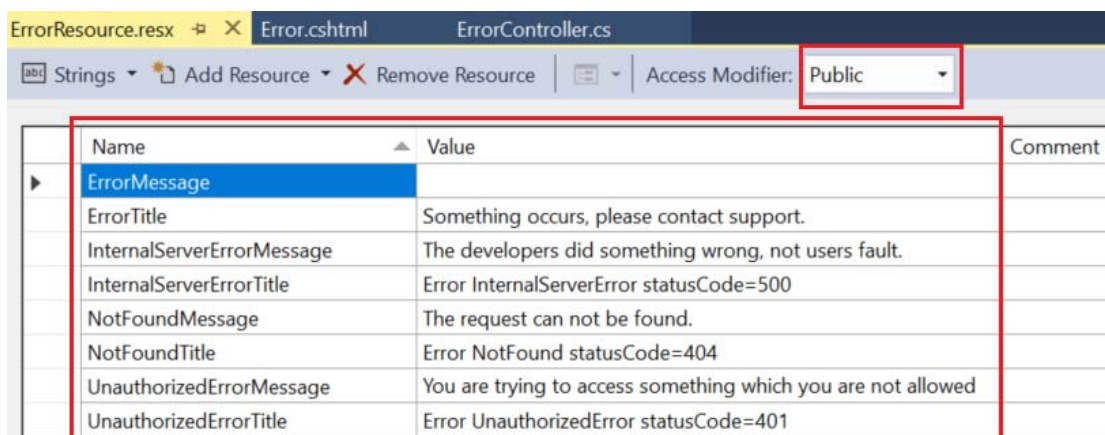
2.7.5.1. Views/Shared/Resource/ErrorResource.resx (NameSpace: OnlineGame.Web.Error)





Namespace

OnlineGame.Web.Error



ErrorMessage	
ErrorTitle	Something occurs, please contact support.
InternalServerErrorMessage	The developers did something wrong, not users fault.
InternalServerErrorTitle	Error InternalServerError statusCode=500
NotFoundMessage	The request can not be found.
NotFoundTitle	Error NotFound statusCode=404
UnauthorizedErrorMessage	You are trying to access something which you are not allowed to access.
UnauthorizedErrorTitle	Error UnauthorizedError statusCode=401

ErrorMessage

ErrorTitle

Something occurs, please contact support.

InternalServerErrorMessage

The developers did something wrong, not users fault.

InternalServerErrorTitle

Error InternalServerError statusCode=500

NotFoundMessage

The request can not be found.

NotFoundTitle

Error NotFound statusCode=404

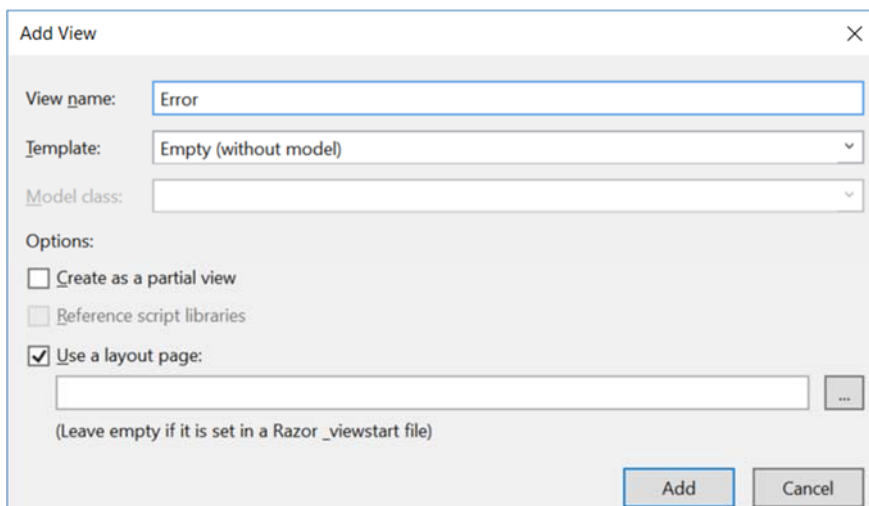
UnauthorizedErrorMessage

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

UnauthorizedErrorTitle

Error UnauthorizedError statusCode=401

2.7.5.2. Views/Shared/Error.cshtml



```
@using OnlineGame.Web.Error
@{
    ViewBag.Title = "Error";
}
<h2>@ErrorResource.ErrorTitle</h2>
<div>
    @ErrorResource.ErrorMessage
</div>
```

2.7.5.3. Views/Shared/UnauthorizedError.cshtml

```
@using OnlineGame.Web.Error
@{
    ViewBag.Title = "UnauthorizedError";
}
<h2>@ErrorResource.UnauthorizedErrorTitle</h2>
<div>
```

```
@ErrorResource.UnauthorizedErrorMessage
</div>
```

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

Error UnauthorizedError statusCode=401

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

2.7.5.4. Views/Shared/NotFound.cshtml

```
@using OnlineGame.Web.Error
@{
    ViewBag.Title = "NotFound";
}
<h2>@ErrorResource.NotFoundTitle</h2>
<div>
    @ErrorResource.NotFoundMessage
</div>
```

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

Error NotFound statusCode=404

The request can not be found.

2.7.5.5. Views/Shared/InternalServerError.cshtml

```
@using OnlineGame.Web.Error
@{
    ViewBag.Title = "InternalServerError";
}
<h2>@ErrorResource.InternalServerErrorTitle</h2>
<div>
    @ErrorResource.InternalServerErrorMessage
</div>
```

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

Error InternalServerError statusCode=500

The developers did something wrong, not users fault.

2.8. WebShare/Attribute

2.8.1. CustomizeCacheAttribute

2.8.1.1. WebShare/Attribute/CustomizeCacheAttribute.cs

```
using System.Web.Mvc;
using System.Web.Configuration;
namespace OnlineGame.Web.WebShare.Attribute
{
    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>
//    </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>
*/
```

2.8.1.2. The way to use WebShare/Attribute/CustomizeCacheAttribute.cs

The following the controller action method to show you how to use CustomizeCacheAttribute

```
[HttpGet]
//[OutputCache(Duration = 60)]
[OutputCache(CacheProfile = "outputCacheProfile1")]
public async Task<ActionResult> Index4()
{
    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()
{
    return $"Gamer Count = {db.Gamers.Count()} At {DateTime.Now}";
}

```

2.8.2. DateRangeAttribute, BetweenMinimumDateAndTodayAttribute, BeforeTodayAttribute

2.8.2.1. WebShare/Attribute/DateRangeAttribute.cs

```

using System;
using System.ComponentModel.DataAnnotations;
using System.Globalization;
namespace OnlineGame.Web.WebShare.Attribute
{
    public class DateRangeAttribute : ValidationAttribute
    {
        //private const string DateFormat = "dd/MM/yyyy";
        //private static string DateFormat =
        System.Configuration.ConfigurationManager.AppSettings["DateDormat"];
        internal const string DateFormat = WebShareConst.DateFormat;
        internal const string DefaultErrorMessage = "{0}, '{1}' must be a date between {2:d} and {3:d}.";
        public DateTime MinDate { get; set; }
        public DateTime MaxDate { get; set; }
        public DateRangeAttribute(string minDate, string maxDate)
            : base(DefaultErrorMessage)
        {
            MinDate = ParseDate(minDate);
            MaxDate = ParseDate(maxDate);
        }
        public DateRangeAttribute(DateTime minDate, DateTime maxDate)
            : base(DefaultErrorMessage)
        {
            MinDate = minDate;
            MaxDate = maxDate;
        }
        public override bool IsValid(object value)
        {
            if (!(value is DateTime))
            {
                return false;
            }
            DateTime dateValue = (DateTime)value;
            return MinDate <= dateValue && dateValue <= MaxDate;
        }
        public override string FormatErrorMessage(string name)
        {
            return String.Format(CultureInfo.CurrentCulture,
                ErrorMessageString, name, DateFormat, MinDate, MaxDate);
        }
        internal static DateTime ParseDate(string dateValue)
        {
            return DateTime.ParseExact(dateValue, DateFormat,
                CultureInfo.InvariantCulture);
        }
    }
}

```

```

    }
}

```

2.8.2.2. WebShare/Attribute/BetweenMinimumDateAndTodayAttribute.cs

```

using System;
namespace OnlineGame.Web.WebShare.Attribute
{
    public class BetweenMinimumDateAndTodayAttribute : DateRangeAttribute
    {
        public BetweenMinimumDateAndTodayAttribute(string minDate)
            : base(ParseDate(minDate), DateTime.Now)
        {
        }
    }
}

```

2.8.2.3. WebShare/Attribute/BeforeTodayAttribute.cs

```

using System;
namespace OnlineGame.Web.WebShare.Attribute
{
    public class BeforeTodayAttribute : DateRangeAttribute
    {
        public BeforeTodayAttribute()
            : base(DateTime.MinValue, DateTime.Now)
        {
        }
    }
}

```

2.8.2.4. The way to use DateRangeAttribute, BetweenMinimumDateAndTodayAttribute, BeforeTodayAttribute

The following the controller action method to show you how to use this attributes

```

//[Range(typeof(DateTime), "1/1/1970", "1/1/2001", ErrorMessage = "Date is out of Range")] //Error -
Client Side validation will never pass
//[Range(typeof(DateTime), "1/1/1970", "1/1/2001")] //Error - Client Side validation will never pass
//[DateRange("01/01/1970", "01/01/2001")]
//[DateRange("01/01/1970", DateTime.Now.ToShortDateString())] //Error : An attribute argument must be a
constant expression
//[BetweenMinimumDateAndToday("01/01/1970")]
[BeforeToday]
//[DisplayFormat(DataFormatString = "{0:dd/MM/yyyy}", ApplyFormatInEditMode = true)]
[DisplayFormat(DataFormatString = WebShareConst.DateStringFormat, ApplyFormatInEditMode = true)]
[Required]
public DateTime DateOfBirth { get; set; }

```

2.8.3. RemoteClientServerAttribute.cs

2.8.3.1. WebShare/Attribute/RemoteClientServerAttribute.cs

```

using System;
using System.Linq;
using System.Web.Mvc;
using System.ComponentModel.DataAnnotations;
using System.Reflection;
namespace OnlineGame.Web.WebShare.Attribute
{
    public class RemoteClientServerAttribute : RemoteAttribute
    {
        //Implement IsValid() will get the server side validation.
        protected override ValidationResult IsValid(object value, ValidationContext validationContext)
        {
            //1.
            //Using reflection to get the controller that is used by this attribute.
            //In all types of the Executing Assembly, I want the type
            //which the type name is equals to the controller name in route data.
            Type controller = Assembly.GetExecutingAssembly().GetTypes()
                .FirstOrDefault(type =>
                    String.Equals(type.Name,
                        $"{RouteData["controller"].ToString()}Controller",
                        StringComparison.CurrentCultureIgnoreCase));
            if (controller != null)
            {
                //2.
                // Get the action method that is used by this attribute and has validation logic.
                MethodInfo action = controller.GetMethods()
                    .FirstOrDefault(method =>
                        String.Equals(method.Name,
                            RouteData["action"].ToString(),
                            StringComparison.CurrentCultureIgnoreCase));
                if (action != null)
                {
                    // Create an instance of the controller class
                    object instance = Activator.CreateInstance(controller);
                    // Invoke the action method that is used by this attribute and has validation logic.
                    // action.Invoke(object obj, object[] parameters)
                    //In our case, it will invoke "IsEmailAvailable" action of "GamerController".
                    object response = action.Invoke(instance, new[] { value });
                    //if (response is JsonResult), then get data.
                    //if (response is JsonResult)
                    //object jsonData = ((JsonResult)response).Data;
                    var result = response as JsonResult;
                    object jsonData = result?.Data;
                    //If the data is true, it means pass the validation.
                    //Otherwise return new ValidationResult(ErrorMessage);
                    if (jsonData is bool)
                    {
                        return (bool)jsonData ?
                            ValidationResult.Success :
                            new ValidationResult(ErrorMessage);
                    }
                }
            }
            //3.
            //3.1.
            //// return ValidationResult.Success;
            //If we don't find the controller which passed from the attribute,

```

```

        //or if we don't find the action that used by the attribute and has validation logic.
        //Then we return validation pass.
        //That means we ignore this validation attribute.
        //3.2.
        // If you want the validation to fail
        ////return new ValidationResult(base.ErrorMessageString);
        return ValidationResult.Success;
    }
    public RemoteClientServerAttribute(string routeName)
        : base(routeName)
    {
    }
    public RemoteClientServerAttribute(string action, string controller)
        : base(action, controller)
    {
    }
    public RemoteClientServerAttribute(string action, string controller,
        string areaName) : base(action, controller, areaName)
    {
    }
}
}
/*
1.
//Type controller = Assembly.GetExecutingAssembly().GetTypes()
//    .FirstOrDefault(type =>
//    String.Equals(type.Name,
//    $"{RouteData["controller"].ToString()}Controller",
//    StringComparison.CurrentCultureIgnoreCase));
Using reflection to get the controller that is used by this attribute.
In all types of the Executing Assembly, I want the type
which the type name is equals to the controller name in route data.
1.1.
//Assembly.GetExecutingAssembly().GetTypes().FirstOrDefault
In all types of the Executing Assembly
1.2.
//($"{RouteData["controller"].ToString()}Controller"
{RouteData["controller"].ToString()} is the controller name in route data.
//($"{RouteData["controller"].ToString()}Controller"
{NameOfController}+"Controller".
2.
//MethodInfo action = controller.GetMethods()
//    .FirstOrDefault(method =>
//    String.Equals(method.Name,
//    RouteData["action"].ToString(),
//    StringComparison.CurrentCultureIgnoreCase));
2.1.
Get the action method that is used by this attribute and has validation logic.
2.2.
//RouteData["action"].ToString()
RouteData["action"].ToString() is the action name in route data.
The action method uses this attribute and has validation logic.
*/

```

2.8.3.2. The way to use RemoteClientServerAttribute

Please check the Models/Gamer/GamerMetaData.cs

```

//[Remote("IsEmailAvailable", "Gamer", ErrorMessage = "The email has already been taken.")]

```



```

//[Remote("IsEmailAvailable", "Gamer", ErrorMessage = WebShareConst.EmailHasBeenTaken)]
//[RemoteClientServer("IsEmailAvailable", "Gamer", ErrorMessage = WebShareConst.EmailHasBeenTaken)]
////Remote attribute can only do the client side validation.
////RemoteClientServer is a customize attribute which can do both client side and server side validation.
////Don't add Remote attribute in shared model, it will affect both Edit and Create mode.
////If you really want to use it, please use two different model classes for Edit and Create mode.
//[RegularExpression(@"^[w-\._+%]+@(?:[w-]+\.)+[w]{2,6}$", ErrorMessage = "Email is not
valid")] //EmailAddress Regular Expression
//[RegularExpression(WebShareConst.EmailRegularExpression, ErrorMessage = "Email is not
valid")] //EmailAddress Regular Expression
[RegularExpression(WebShareConst.EmailRegularExpression, ErrorMessage =
WebShareConst.EmailNotValid)] //EmailAddress Regular Expression
[Required]
public string EmailAddress { get; set; }

```

```

/*
6.
//[Remote("IsEmailAvailable", "Gamer", ErrorMessage = "The email has already been taken.")]
//[Remote("IsEmailAvailable", "Gamer", ErrorMessage = WebShareConst.EmailHasBeenTaken)]
//[RemoteClientServer("IsEmailAvailable", "Gamer", ErrorMessage = WebShareConst.EmailHasBeenTaken)]
//// Don't add Remote attribute in shared model, it will affect both Edit and Create mode.
//// You may use two different model class for create and edit mode.
//public string EmailAddress { get; set; }
6.1.
Remote attribute can only do the client side validation.
RemoteClientServer is a customize attribute which can do both client side and server side validation.
Don't add Remote attribute in shared model, it will affect both Edit and Create mode.
If you really want to use it, please use two different model classes for Edit and Create mode.
6.2.
RemoteAttribute uses AJAX to make an asynchronous call to the server-side method.
If the user disables javascript function of the browser, then it will not work.
Thus, we should also have server-side validation.
6.3.
server-side validation.
In the Create HttpPost Method.
It is hard to read that validation logic is in the controller.
Using validation attributes is always the preferred method.
You may use two different model class for create and edit mode.
//[HttpPost]
//[ValidateAntiForgeryToken]
//public async Task<ActionResult> Create([Bind(Include =
"Id,Name,Gender,City,DateOfBirth,EmailAddress,ConfirmEmailAddress,Score,ProfileUrl,GameMoney,RolePhoto,RolePhotoAltText,TeamId")] Gamer gamer)
//{
//    //If the Email already exists, then add Model validation error
//    if (db.Gamers.Any(g => g.EmailAddress == gamer.EmailAddress))
//    {
//        //AddModelError(Key, ErrorMessage)
//        ModelState.AddModelError("EmailAddress", WebShareConst.EmailHasBeenTaken);
//    }
//    //It is hard to read that validation logic is in controller.
//    //Using validation attributes is always preferred method.
//    if (!ModelState.IsValid)
//    {
//        ViewBag.TeamId = new SelectList(db.Teams, "Id", "Name", gamer.TeamId);
//        return View(gamer);
//    }
//    db.Gamers.Add(gamer);
//    await db.SaveChangesAsync();
//    return RedirectToAction("Index");
//}
6.4.
Another way to has both server side and client side validation,

```

you have to create your own RemoteClientServerAttribute which extend RemoteAttribute.
*/

2.9. Fix the Date format dd/mm/yyyy issue - JQuery Validation in Chrome and Safari won't validate with dd/mm/yyyy

Fixed

<https://stackoverflow.com/questions/6906725/unobtrusive-validation-in-chrome-wont-validate-with-dd-mm-yyyy>

Reference:

<https://www.nuget.org/packages/jquery-globalize/1.3.0>

<https://github.com/globalizejs/globalize>

http://devdens.blogspot.com.au/2011/11/jquery-validation-fix-for-date-format_29.html

<https://stackoverflow.com/questions/6906725/unobtrusive-validation-in-chrome-wont-validate-with-dd-mm-yyyy>

<https://stackoverflow.com/questions/14020117/dd-mm-yyyy-date-validation-error-with-google-chrome>

2.9.1. JQuery UI Datepicker

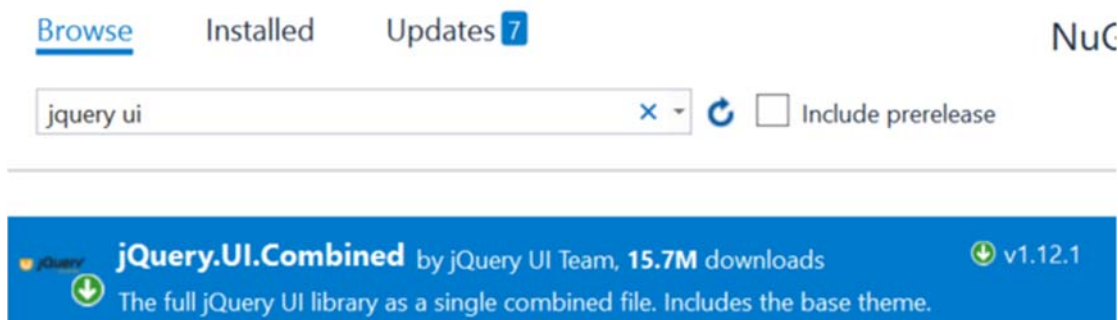
Reference:

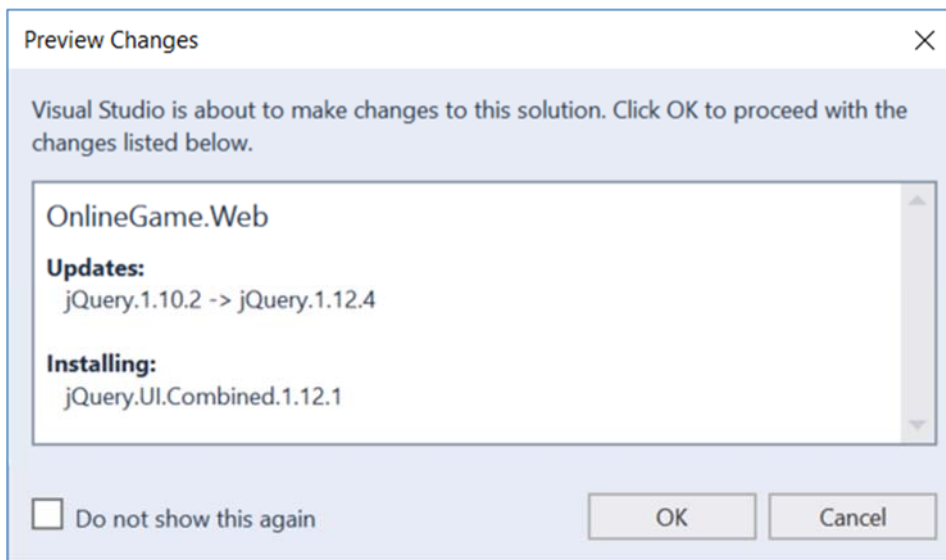
ASP.NET MVC 3: Integrating with the jQuery UI date picker and adding a jQuery validate date range validator

<https://blogs.msdn.microsoft.com/stuartleeks/2011/01/25/asp-net-mvc-3-integrating-with-the-jquery-ui-date-picker-and-adding-a-jquery-validate-date-range-validator/>

2.9.1.1. Install JQuery UI

Install JQuery UI from NuGet Package





2.9.1.2. Views/Shared/_Layout.cshtml

```
@using OnlineGame.Web.WebShare
<!DOCTYPE html>
<html>
<head>
    <meta charset="utf-8" />
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title>@ViewBag.Title - My ASP.NET Application</title>
    <link href="~/Content/bootstrap.min.css" rel="stylesheet" type="text/css" />
    <link href="~/Content/themes/base/jquery-ui.min.css" rel="stylesheet" />
    <link href="~/Content/Site.css" rel="stylesheet" type="text/css" />
    @*<script src="~/Scripts/jquery-1.10.2.min.js"></script>*@
    <script src="~/Scripts/jquery-1.12.4.min.js"></script>
    <script src="~/Scripts/modernizr-2.6.2.js"></script>
    <script src="~/Scripts/bootstrap.min.js"></script>
    <script src="~/Scripts/jquery-ui-1.12.1.min.js"></script>
    @*<script src="https://code.jquery.com/ui/1.12.1/jquery-ui.min.js"></script>*@
    <script src="~/Scripts/jquery.validate.min.js"></script>
    <script src="~/Scripts/jquery.validate.unobtrusive.min.js"></script>
    <script src="~/Scripts/jquery.unobtrusive-ajax.min.js" type="text/javascript"></script>
    <script src="~/Scripts/operation.js"></script>
</head>
<body>
    <div class="navbar navbar-inverse navbar-fixed-top">
        <div class="container">
            <div class="navbar-header">
                <button type="button" class="navbar-toggle" data-toggle="collapse" data-target=".navbar-collapse">

                    <span class="icon-bar"></span>
                    <span class="icon-bar"></span>
                    <span class="icon-bar"></span>

                </button>
                @Html.ActionLink(System.Configuration.ConfigurationManager.AppSettings["ApplicationName"],
"Index", "Gamer", new { area = "" }, new { @class = "navbar-brand" })
            </div>
            <div class="navbar-collapse collapse">
```

```

        <ul class="nav navbar-nav"></ul>
    </div>
</div>
<div class="container body-content">
    @RenderBody()
    <hr />
    <footer>
        <p>&copy; @DateTime.Now.Year - My ASP.NET Application</p>
    </footer>
</div>
<script type="text/javascript">
    $(function () {
        $('.datepicker').datepicker(
        {
            //dateFormat: "dd/mm/yy"
            dateFormat: "@WebShareConst.DateFormatJavascriptString"
        });
    });
</script>
</body>
</html>

```

2.9.1.3. WebShare/WebShareConst.cs

```

public const string DateFormat = "dd/MM/yyyy";
public const string DateFormatJavascriptString = "dd/mm/yy";
public const string DateStringFormat = "{0:dd/MM/yyyy}";

```

2.9.1.4. Views/Gamer/Edit.cshtml Or Views/Gamer/Create.cshtml

```

<div>
    <input name="AA" value="" class="datepicker" />
</div>

```

OR

```

<div class="form-group">
    @Html.LabelFor(model => model.DateOfBirth, new { @class = "control-label col-md-2" })
    <div class="col-md-10">
        @Html.EditorFor(model => model.DateOfBirth, new { htmlAttributes = new { @class = "form-control datepicker" } })
        @Html.ValidationMessageFor(model => model.DateOfBirth, "", new { @class = "text-danger" })
    </div>
</div>

```

Create

Gamer

Name	<input type="text"/>
Gender	<input type="text"/>
City	<input type="text"/>
DateOfBirth	<input type="text" value="28/02/2018"/> X
EmailAddress	<input type="text"/>
ConfirmEmailAddress	<input type="text"/>
Score	<input type="text"/>
ProfileUrl	<input type="text"/>

February 2018

Su	Mo	Tu	We	Th	Fr	Sa
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28			

2.9.1.5. Client Side Date Range

Please follow the instruction here.

<https://blogs.msdn.microsoft.com/stuartleeks/2011/01/25/asp-net-mvc-3-integrating-with-the-jquery-ui-date-picker-and-adding-a-jquery-validate-date-range-validator/>

2.9.2. Induction - Date format dd/mm/yyyy issue

2.9.2.1. Web.config

```
<appSettings>
  <add key="webpages:Version" value="3.0.0.0" />
  <add key="webpages:Enabled" value="false" />
  <add key="ClientValidationEnabled" value="true" />
  <add key="UnobtrusiveJavaScriptEnabled" value="true" />
  <add key="ApplicationName" value="Online Game Web" />
</appSettings>
<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>
</system.web>
```

```

</customErrors>
<globalization culture="en-au" uiCulture="en-AU" />
<compilation debug="true" targetFramework="4.6.1" />
<httpRuntime targetFramework="4.6.1" />
</system.web>

```

2.9.2.2. WebShare/WebShareConst.cs

```

public const string DateFormat = "dd/MM/yyyy";
public const string DateTimeFormat = "{0:dd/MM/yyyy}";

```

2.9.2.3. Models/Gamer/Gamer.cs

```

[MetadataType(typeof(GamerMetaData))]
public partial class Gamer

```

2.9.2.4. Models/Gamer/GamerMetaData.cs

```

//[Range(typeof(DateTime), "1/1/1970", "1/1/2001", ErrorMessage = "Date is out of Range")] //Error -
Client Side validation will never pass
//[Range(typeof(DateTime), "1/1/1970", "1/1/2001")] //Error - Client Side validation will never pass
//[DateRange("01/01/1970", "01/01/2001")]
//[DateRange("01/01/1970", DateTime.Now.ToShortDateString())] //Error : An attribute argument must be a
constant expression
//[BetweenMinimumDateAndToday("01/01/1970")]
[BeforeToday]
//[DisplayFormat(DataFormatString = "{0:dd/MM/yyyy}", ApplyFormatInEditMode = true)]
[DisplayFormat(DataFormatString = WebShareConst.DateTimeFormat, ApplyFormatInEditMode = true)]
[Required]
public DateTime DateOfBirth { get; set; }

/*
3.
//[DisplayFormat(DataFormatString = "{0:dd/MM/yyyy}", ApplyFormatInEditMode = true)]
//public DateTime DateOfBirth { get; set; }
We discuss this at T009 and T010 already.
3.1.
DisplayFormat attribute
3.1.1.
//[DisplayFormat(DataFormatString = "{0:d}")]
Display only the date part. E.g. 29/04/1986
3.1.2.
//[DisplayFormat(DataFormatString = "{0:dd/MM/yyyy HH:mm:ss}")]
Display in 24 hour notation. E.g. 29/04/1986 13:00:00
3.1.3.
//[DisplayFormat(DataFormatString = "{0:dd/MM/yyyy hh:mm:ss tt}")]
Display in 12 hour notation. E.g. 29/04/1986 1:00:00 PM
3.2.
DisplayFormatAttribute attribute
//[DisplayFormatAttribute(DataFormatString="{0:d}")]
Display only the date part. E.g. 29/04/1986
*/

```

2.9.2.5. Views/Gamer/Edit.cshtml Or Views/Gamer/Create.cshtml

```

<div class="form-group">
    @Html.LabelFor(model => model.DateOfBirth, new { @class = "control-label col-md-2" })
    <div class="col-md-10">
        @Html.EditorFor(model => model.DateOfBirth, new { htmlAttributes = new { @class = "form-control datepicker" } })
        @Html.ValidationMessageFor(model => model.DateOfBirth, "", new { @class = "text-danger" })
    </div>
</div>

```

2.9.3. Fix the Date format dd/mm/yyyy issue

If you run the view in IE or FireFox,
then it will work as we expect.

However, if you run the view in Google Chrome or Apple Safari,

Jquery Validation in Chrome and Safari won't validate with dd/mm/yyyy.

You are not alone, if you google "**validation dd/mm/yyyy**" you will find a lot of solutions.

The following is the link which fixes my issue.

Fixed

<https://stackoverflow.com/questions/6906725/unobtrusive-validation-in-chrome-wont-validate-with-dd-mm-yyyy>

The following is the link which also helps me

Reference:

<https://www.nuget.org/packages/jquery-globalize/1.3.0>

<https://github.com/globalizejs/globalize>

http://devdens.blogspot.com.au/2011/11/jquery-validation-fix-for-date-format_29.html

<https://stackoverflow.com/questions/6906725/unobtrusive-validation-in-chrome-wont-validate-with-dd-mm-yyyy>

<https://stackoverflow.com/questions/14020117/dd-mm-yyyy-date-validation-error-with-google-chrome>

2.9.3.1. Scripts/operation.js

```

//DateFormate : dd/mm/yyyy
//Reference:
//https://www.w3schools.com/jsref/jsref_obj_regexp.asp
//https://stackoverflow.com/questions/6906725/unobtrusive-validation-in-chrome-wont-validate-with-dd-mm-yyyy
jQuery.validator.methods.date = function (value, element) {
    var dateRegex = /^(0?[1-9]\V|[12]\d\V|3[01]\V){2}(19|20)\d\d$/;
    return this.optional(element) || dateRegex.test(value);
};
$(function () {
});

```

2.9.3.2. Views/Shared/_Layout.cshtml

```

<link href="~/Content/bootstrap.min.css" rel="stylesheet" type="text/css" />
<link href="~/Content/themes/base/jquery-ui.min.css" rel="stylesheet" />
<link href="~/Content/Site.css" rel="stylesheet" type="text/css" />
@*<script src="~/Scripts/jquery-1.10.2.min.js"></script>*@

```

```

<script src="~/Scripts/jquery-1.12.4.min.js"></script>
<script src="~/Scripts/modernizr-2.6.2.js"></script>
<script src="~/Scripts/bootstrap.min.js"></script>
<script src="~/Scripts/jquery-ui-1.12.1.min.js"></script>
<script src="~/Scripts/jquery.validate.min.js"></script>
<script src="~/Scripts/jquery.validate.unobtrusive.min.js"></script>
<script src="~/Scripts/operation.js"></script>

```

2.10. Enable client side validation

When we use automatically generate code,
it will also generate the code to enable client side validation.
Let's discuss how it works.

2.10.1. Enable Unobtrusive Validation

Use one of the following methods can enable Unobtrusive Validation.
In our case, we just use the "Web.config" to enable Unobtrusive Validation

2.10.1.1. Enable Unobtrusive Validation Method1 - Web.config

```

<appSettings>
  <add key="webpages:Version" value="3.0.0.0" />
  <add key="webpages:Enabled" value="false" />
  <add key="ClientValidationEnabled" value="true" />
  <add key="UnobtrusiveJavaScriptEnabled" value="true" />
  <add key="ApplicationName" value="Online Game Web" />
</appSettings>

```

2.10.1.2. Enable client side validation Method2 - Global.asax.cs

```

using System.Web.Mvc;
using System.Web.Routing;
using OnlineGame.Web;
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);
        ///Enable Unobtrusive validation
        //HtmlHelper.UnobtrusiveJavaScriptEnabled = true;
        //HtmlHelper.ClientValidationEnabled = true;
    }
}
}

```

2.10.1.3. Enable client side validation Method3 - In the View

```

@{
    ViewBag.Title = "Edit";
    ///Enable client side validation
    //Html.EnableClientValidation(true);
    //Html.EnableUnobtrusiveJavaScript(true);
}

```

2.10.2. In the View

In our case, please check the following file

Views/Gamer/Create.cshtml

Views/Gamer/Edit.cshtml

In our case, we already move these 3 lines to Views/Shared/_Layout.cshtml

```

@*<script src="~/Scripts/jquery-1.10.2.min.js"></script>*@
<script src="~/Scripts/jquery-1.12.4.min.js"></script>
<script src="~/Scripts/jquery.validate.min.js"></script>
<script src="~/Scripts/jquery.validate.unobtrusive.min.js"></script>

```

2.10.3. How it works

2.10.3.1. How it works - Models/Gamer/Gamer.cs

```

[MetadataType(typeof(GamerMetaData))]
public partial class Gamer

```

2.10.3.2. How it works - Models/Gamer/GamerMetaData.cs

Look At Name Property.

```

[StringLength(20, MinimumLength = 2)]

```

```
//[RegularExpression(@"^([A-Za-z]+\s{1}[A-Za-z]+)|([A-Za-z]+))$")] //First Name Last Name
//[RegularExpression(WebShareConst.FirstNameLastNameRegularExpression)] //First Name Last Name
//[RegularExpression(WebShareConst.FirstNameLastNameRegularExpression, ErrorMessage = "Please enter first
name or first name and last name.")] //First Name Last Name
[RegularExpression(WebShareConst.FirstNameLastNameRegularExpression, ErrorMessage =
WebShareConst.FirstNameLastNameNotValid)] //First Name Last Name
[Required]
public string Name { get; set; }
```

2.10.3.3. How it works - Edit.cshtml

Run the Edit.cshtml, and inspect the html when it is running.

```
<input class="form-control text-box single-line valid"
data-val="true"
data-val-length="The field Name must be a string with a minimum length of 2 and a maximum length of
20." data-val-length-max="20" data-val-length-min="2"
data-val-regex="Please enter first name or first name and last name." data-val-regex-pattern="^([A-Za-
z]+\s{1}[A-Za-z]+)|([A-Za-z]+))$"
data-val-required="The Name field is required."
id="Name" name="Name" type="text" value="NameOne ABB">
```

A.

```
data-val="true"
```

means the unobtrusive validation of this element is enabled.

B.

```
[StringLength(20, MinimumLength = 2)]
```

```
-->
```

```
data-val-length="The field Name must be a string with a minimum length of 2 and a maximum length of
20." data-val-length-max="20" data-val-length-min="2"
```

C.

```
//[RegularExpression(@"^([A-Za-z]+\s{1}[A-Za-z]+)|([A-Za-z]+))$")] //First Name Last Name
//[RegularExpression(WebShareConst.FirstNameLastNameRegularExpression)] //First Name Last Name
//[RegularExpression(WebShareConst.FirstNameLastNameRegularExpression, ErrorMessage = "Please enter first
name or first name and last name.")] //First Name Last Name
[RegularExpression(WebShareConst.FirstNameLastNameRegularExpression, ErrorMessage =
WebShareConst.FirstNameLastNameNotValid)] //First Name Last Name
```

```
-->
```

```
data-val-regex="Please enter first name or first name and last name." data-val-regex-pattern="^([A-Za-
z]+\s{1}[A-Za-z]+)|([A-Za-z]+))$"
```

D.

```
[Required]
```

```
-->
```

```
data-val-required="The Name field is required."
```

2.11. Enable client side validation Summary

2.11.1. _Layout.cshtml

A.

"Site.css" must below "bootstrap.min.css",
so "Site.css" will override "bootstrap.min.css".

B.

The "Application Name" action link should set to Gamer controller and Index action.

```
<link href="~/Content/bootstrap.min.css" rel="stylesheet" type="text/css" />
<link href="~/Content/themes/base/jquery-ui.min.css" rel="stylesheet" />
<link href="~/Content/Site.css" rel="stylesheet" type="text/css" />
@*<script src="~/Scripts/jquery-1.10.2.min.js"></script>*@
<script src="~/Scripts/jquery-1.12.4.min.js"></script>
<script src="~/Scripts/modernizr-2.6.2.js"></script>
<script src="~/Scripts/bootstrap.min.js"></script>
<script src="~/Scripts/jquery-ui-1.12.1.min.js"></script>
<script src="~/Scripts/jquery.validate.min.js"></script>
<script src="~/Scripts/jquery.validate.unobtrusive.min.js"></script>
<script src="~/Scripts/operation.js"></script>
```

2.11.2. Content/Site.css

```
body {
    padding-top: 50px;
    padding-bottom: 20px;
}
/* Set padding to keep content from hitting the edges */
.body-content {
    padding-left: 15px;
    padding-right: 15px;
}
/* Set width on the form input elements since they're 100% wide by default */
input,
select,
textarea {
    max-width: 280px;
}
/*Override Bootstrap ----- */
/* .text-danger {
    color: #b94a48;
} */
/*validation summary ----- */
.validation-summary-valid {
    display: none;
}
/*The validation summary span when validation is valid.*/
.validation-summary-errors {
    color: #b94a48;
    font-weight: bold;
}
/*The validation summary span when validation is invalid.*/
/*field validation ----- */
```

```
.field-validation-valid {
    display: none;
}
/*The validation span below input textbox when validation is valid.*/
.field-validation-error {
    color: #b94a48;
}
/*The validation span below input textbox when validation is invalid.*/
.input-validation-error {
    border: 1px solid #b94a48;
}
/*The input textbox when validation is invalid.*/
```

2.11.3. In the View - validation Summary

In our case, please check the following file

Views/Gamer/Create.cshtml

Views/Gamer/Edit.cshtml

```
<div>
    @Html.ValidationSummary(false, WebShareConst.ValidationSummaryTitleString)
    @*@Html.ValidationSummary(false, "Please check the following fields.")*@
</div>
```

```
@*
1.
//@Html.ValidationSummary(false, "Please check the following fields.")
//@Html.ValidationSummary(false, @WebShareConst.ValidationSummaryTitleString)
1st parameter is excludePropertyErrors
true to have the summary display model-level errors only,
or false to have the summary display all errors.
*@
```

2.11.4. In the View - Field validation

You may specify the Error Message of "ValidationMessageFor".

```
@Html.ValidationMessageFor(model => model.ConfirmEmailAddress, "", new { @class = "text-danger" })
```

When Error Message is empty string, it will display default error message.

```
@Html.ValidationMessageFor(model => model.ConfirmEmailAddress, "*", new { @class = "text-danger" })
```

This will Error Message string is not empty string,

it will display what you type in that Error Message string.

```
<div class="form-group">
    @Html.LabelFor(model => model.ConfirmEmailAddress, new { @class = "control-label col-md-2" })
    <div class="col-md-10">
        @Html.EditorFor(model => model.ConfirmEmailAddress, new { htmlAttributes = new { @class = "form-control" } })
        @Html.ValidationMessageFor(model => model.ConfirmEmailAddress, "", new { @class = "text-danger" })
        @*@Html.ValidationMessageFor(model => model.ConfirmEmailAddress, "*", new { @class = "text-danger" })*@
    </div>
</div>
```

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

-->

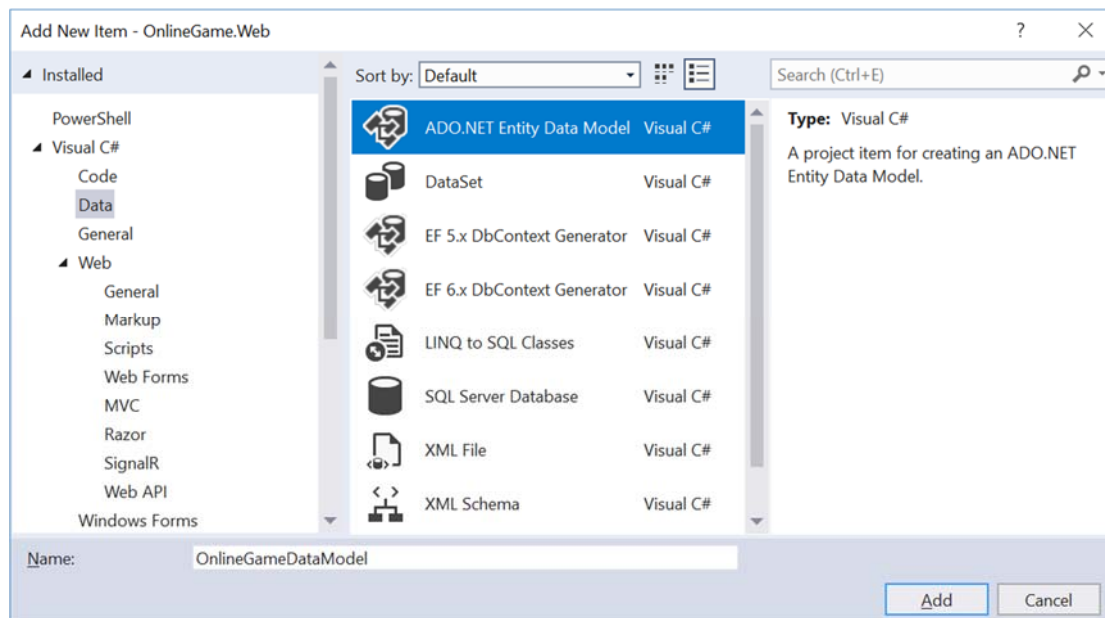
EF Designer from database

....

-->

Save Connection settings in Web.Config as:

OnlineGameContext



**Choose 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
 - ☐ sysdiagrams
 - ☐ Views
- ☒ Stored Procedures and Functions
 - ☐ dbo

☒ 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.

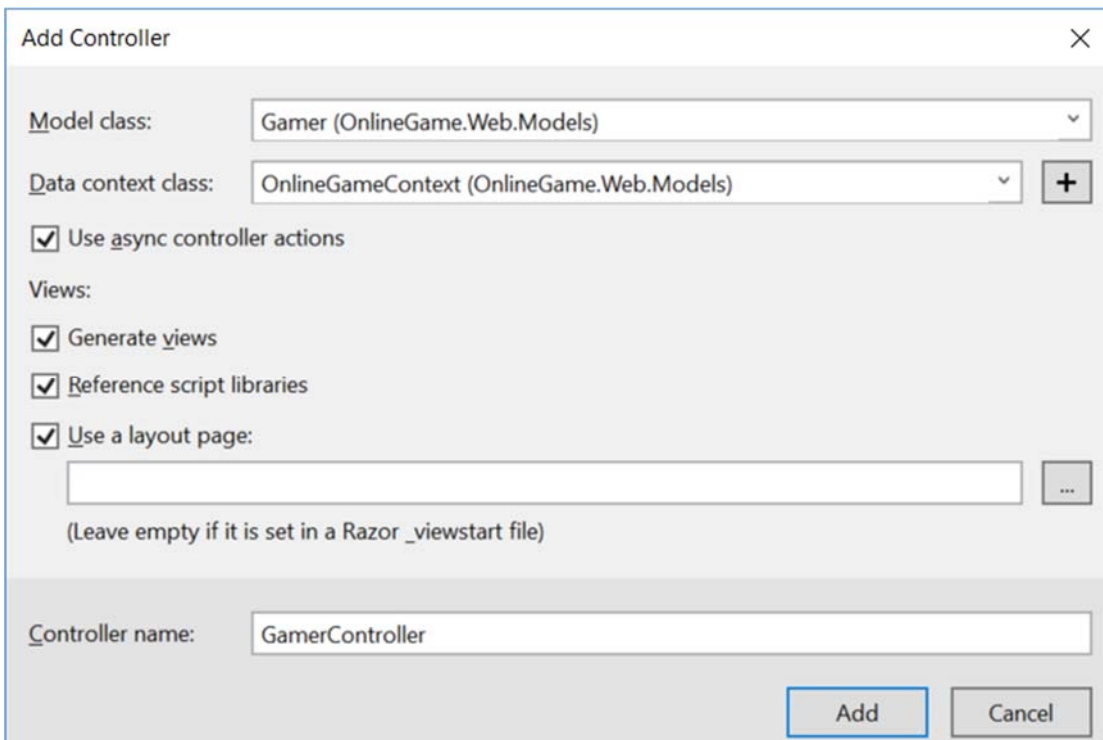
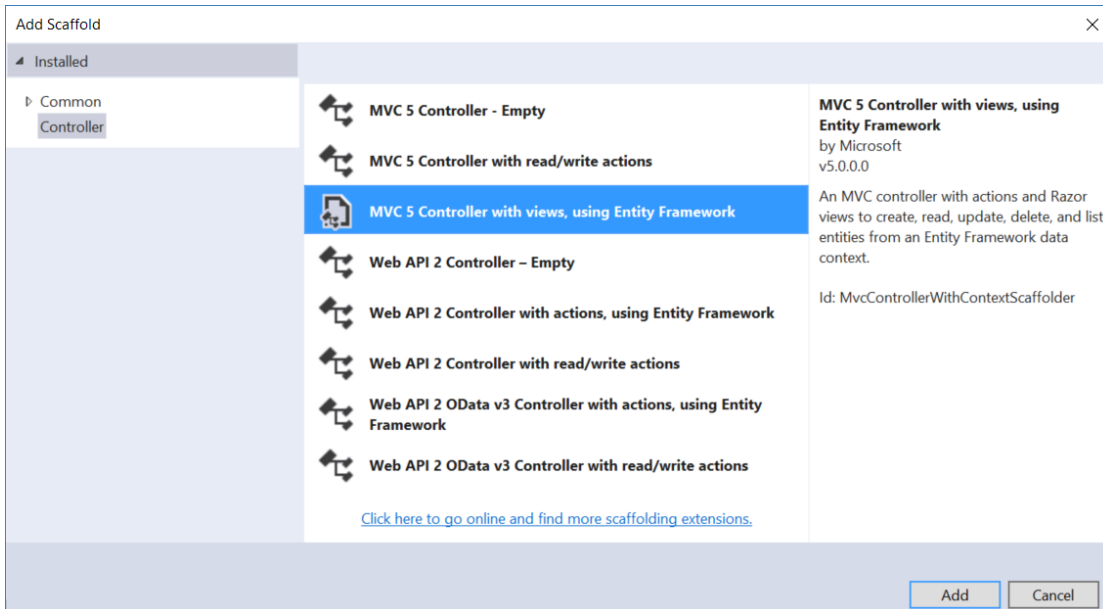
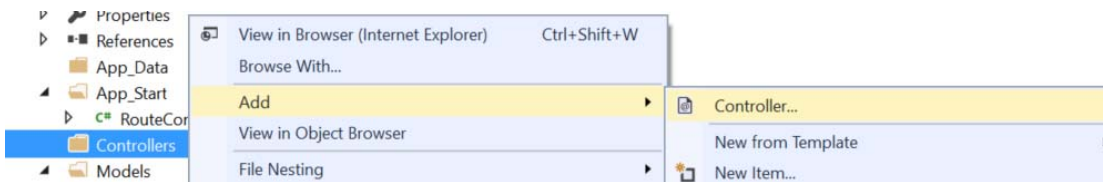
☐ Do not show this message again

OK Cancel

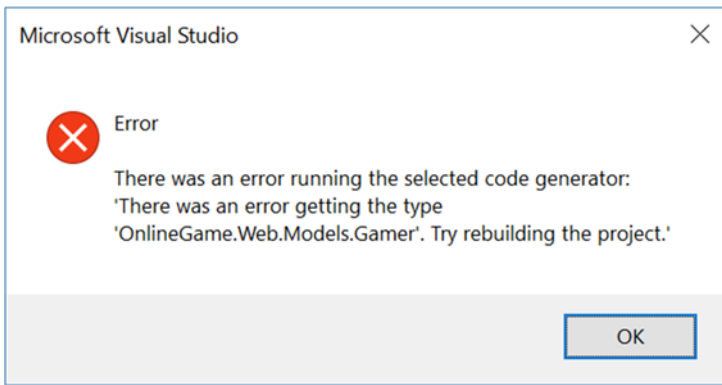
3.2. Controllers/GamerController.cs

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

MVC 5 Controller with views, using Entity Framework



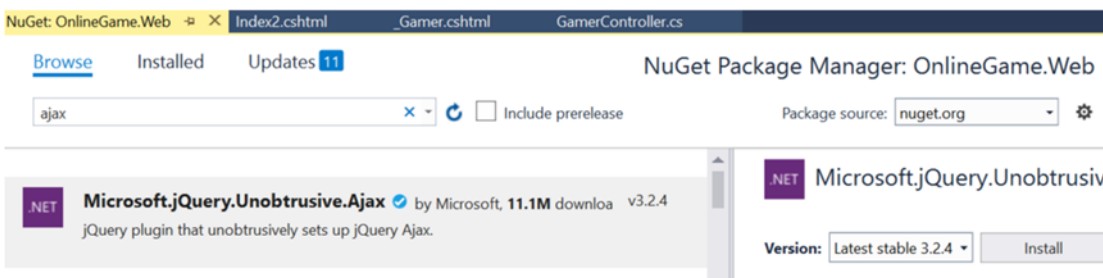
If you see the following error message, then you have to re-build solution before you create the controller.



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

4. OnlineGame.Web - AJAX

4.1. Install Ajax



4.2. Views/Shared/_Layout.cshtml

```
@using OnlineGame.Web.WebShare
<!DOCTYPE html>
<html>
<head>
    <meta charset="utf-8" />
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title>@ViewBag.Title - My ASP.NET Application</title>
    <link href="~/Content/bootstrap.min.css" rel="stylesheet" type="text/css" />
    <link href="~/Content/themes/base/jquery-ui.min.css" rel="stylesheet" />
    <link href="~/Content/Site.css" rel="stylesheet" type="text/css" />
    @*<script src="~/Scripts/jquery-1.10.2.min.js"></script>*@
    <script src="~/Scripts/jquery-1.12.4.min.js"></script>
    <script src="~/Scripts/modernizr-2.6.2.js"></script>
    <script src="~/Scripts/bootstrap.min.js"></script>
    <script src="~/Scripts/jquery-ui-1.12.1.min.js"></script>
    <script src="~/Scripts/jquery.validate.min.js"></script>
    <script src="~/Scripts/jquery.validate.unobtrusive.min.js"></script>
```

```

<script src="../../Scripts/jquery.unobtrusive-ajax.min.js" type="text/javascript"></script>
<script src="../../Scripts/operation.js"></script>
</head>
<body>
    <div class="navbar navbar-inverse navbar-fixed-top">
        <div class="container">
            <div class="navbar-header">
                <button type="button" class="navbar-toggle" data-toggle="collapse" data-target=".navbar-collapse">

                    <span class="icon-bar"></span>
                    <span class="icon-bar"></span>
                    <span class="icon-bar"></span>

                </button>
                @Html.ActionLink(System.Configuration.ConfigurationManager.AppSettings["ApplicationName"],
"Index", "Gamer", new { area = "" }, new { @class = "navbar-brand" })
            </div>
            <div class="navbar-collapse collapse">
                <ul class="nav navbar-nav"></ul>
            </div>
        </div>
    </div>
    <div class="container body-content">
        @RenderBody()
        <hr />
        <footer>
            <p>&copy; @DateTime.Now.Year - My ASP.NET Application</p>
        </footer>
    </div>
    <script type="text/javascript">
        $(function () {
            $('.datepicker').datepicker(
            {
                //dateFormat: "dd/mm/yy"
                dateFormat: "@WebShareConst.DateFormatJavascriptString"
            });
        });
    </script>
</body>
</html>

```

4.3. spinner.gif

Download the spinner.gif, and copy to
/Images/spinner.gif



AJAX applications will allow users to interact with the rest of page while the partial page is still being processed by the server. However, if it takes too long while the server is still processing the partial page, we need visual feedback, /Images/spinner.gif, to show the users it is still loading.

4.4. Controllers/GamerController.cs

```
using System;
using System.Collections.Generic;
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()
        {
            return View(await _db.Gamers.ToListAsync());
        }
        [HttpGet]
        public ActionResult Index2()
        {
            return View();
        }
        // Return all
        [HttpGet]
        public async Task<PartialViewResult> All()
        {
            List<Gamer> model = await _db.Gamers.ToListAsync();
            return PartialView("_Gamer", model);
        }
        // Return all
        [HttpGet]
        public async Task<PartialViewResult> All_2Seconds()
        {
            System.Threading.Thread.Sleep(2000);
            List<Gamer> model = await _db.Gamers.ToListAsync();
            return PartialView("_Gamer", model);
        }
        // Return all
        [HttpGet]
        public async Task<PartialViewResult> All_ThrowException_2Seconds()
        {
            System.Threading.Thread.Sleep(2000);
            List<Gamer> model = await _db.Gamers.ToListAsync();
            throw new Exception("All_ThrowException_2Seconds, something bad happened.");
            return PartialView("_Gamer", model);
        }
        // Return Score Top Three
        [HttpGet]
        public async Task<PartialViewResult> ScoreTopThree()
        {
            List<Gamer> model = await _db.Gamers
```

```

        .OrderByDescending(g => g.Score)
        .Take(3)
        .ToListAsync();
    }
    return PartialView("_Gamer", model);
}
// Return Score Top Three
[HttpGet]
public async Task<PartialViewResult> ScoreTopThree_2Seconds()
{
    System.Threading.Thread.Sleep(2000);
    List<Gamer> model = await _db.Gamers
        .OrderByDescending(g => g.Score)
        .Take(3)
        .ToListAsync();
    return PartialView("_Gamer", model);
}
// Return Score Bottom Three
[HttpGet]
public async Task<PartialViewResult> ScoreBottomThree()
{
    List<Gamer> model = await _db.Gamers
        .OrderBy(g => g.Score)
        .Take(3)
        .ToListAsync();
    return PartialView("_Gamer", model);
}
// Return Score Bottom Three
[HttpGet]
public async Task<PartialViewResult> ScoreBottomThree_2Seconds()
{
    System.Threading.Thread.Sleep(2000);
    List<Gamer> model = await _db.Gamers
        .OrderBy(g => g.Score)
        .Take(3)
        .ToListAsync();
    return PartialView("_Gamer", model);
}
}
// 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,Score,GameMoney")] Gamer
gamer)
{
    if (!ModelState.IsValid) return View(gamer);
    _db.Gamers.Add(gamer);
    await _db.SaveChangesAsync();
    return RedirectToAction("Index");
}
// 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
// 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,Score,GameMoney")] Gamer
gamer)
{
    if (!ModelState.IsValid) return View(gamer);
    _db.Entry(gamer).State = EntityState.Modified;
    await _db.SaveChangesAsync();
    return RedirectToAction("Index");
}
// 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);
}
}
}

```

4.5. Views/Gamer/_Gamer.cshtml - (Partial View)

```

@model IEnumerable<OnlineGame.Web.Models.Gamer>
@{
    ViewBag.Title = "Gamer Partial View";
}
<h2>@ViewBag.Title</h2>
<table id="tableGamers">
    <tr>
        <th>
            @Html.DisplayNameFor(model => model.Id)
        </th>
        <th>
            @Html.DisplayNameFor(model => model.Name)
        </th>
        <th>
            @Html.DisplayNameFor(model => model.Gender)
        </th>
        <th>
            @Html.DisplayNameFor(model => model.Score)
        </th>
        <th>
            @Html.DisplayNameFor(model => model.GameMoney)
        </th>
    </tr>
    @foreach (var item in Model)
    {
        <tr>
            <td>
                @Html.DisplayFor(modelItem => item.Id)
            </td>
            <td>
                @Html.DisplayFor(modelItem => item.Name)
            </td>

```

```

        <td>
            @Html.DisplayFor(modelItem => item.Gender)
        </td>
        <td>
            @Html.DisplayFor(modelItem => item.Score)
        </td>
        <td>
            @Html.DisplayFor(modelItem => item.GameMoney)
        </td>
    </tr>
}
</table>

```

4.6. Views/Gamer/Index2.cshtml

```

@{
    ViewBag.Title = "Index2";
}
@*<script src="~/Scripts/jquery-1.12.4.min.js"></script>
    <script src="~/Scripts/jquery.unobtrusive-ajax.min.js" type="text/javascript"></script>*@
<script type="text/javascript">
    function OnBeginFunction() {
        alert('OnBeginFunction');
    }
    function OnCompleteFunction() {
        alert('OnCompleteFunction');
    }
    function OnSuccessFunction() {
        alert('OnSuccessFunction');
    }
    function OnFailureFunction() {
        alert('OnFailure');
    }
    //-----
    function ClearReturnData() {
        $("#divGamers").empty();
    }
    function CancelInvoke() {
        if (1 == 2) {
            return true;
        }
        else {
            alert('The action method will not be called.');
```

return false;

```

        }
    }
    function CountRows() {
        alert(($("#tableGamers tr").length - 1) + 'rows retrieved');
```

}

```

</script>
<h2>@ViewBag.Title</h2>
<h3>1.</h3>
@Ajax.ActionLink("All (InsertionMode.Replace)", "All", "Gamer",
new AjaxOptions
{
    HttpMethod = "GET", // GET or POST, HttpMethod to use.

```

```

UpdateTargetId = "divGamers", // Html element ID to update
InsertionMode = InsertionMode.Replace // Replace the existing contents
})
<span style="color:Blue">|</span>
@Ajax.ActionLink("Score Top 3 (InsertionMode.Replace)", "ScoreTopThree", "Gamer",
new AjaxOptions
{
    HttpMethod = "GET", // GET or POST, HttpMethod to use.
UpdateTargetId = "divGamers", // Html element ID to update
InsertionMode = InsertionMode.Replace // Replace the existing contents
})
<span style="color:Blue">|</span>
@Ajax.ActionLink("Score bottom 3 (InsertionMode.Replace)", "ScoreBottomThree", "Gamer",
    new AjaxOptions
    {
        HttpMethod = "GET", // GET or POST, HttpMethod to use.
UpdateTargetId = "divGamers", // Html element ID to update
InsertionMode = InsertionMode.Replace // Replace the existing contents
})
<br />
<h3>2.</h3>
@Ajax.ActionLink("All (InsertionMode.InsertBefore)", "All", "Gamer",
new AjaxOptions
{
    HttpMethod = "GET", // GET or POST, HttpMethod to use.
UpdateTargetId = "divGamers", // Html element ID to update
InsertionMode = InsertionMode.InsertBefore // Insert before the existing contents
})
<span style="color:Blue">|</span>
@Ajax.ActionLink("Score Top 3 (InsertionMode.InsertAfter)", "ScoreTopThree", "Gamer",
new AjaxOptions
{
    HttpMethod = "GET", // GET or POST, HttpMethod to use.
UpdateTargetId = "divGamers", // Html element ID to update
InsertionMode = InsertionMode.InsertAfter // Insert after the existing contents
})
<span style="color:Blue">|</span>
@Ajax.ActionLink("Score bottom 3 (InsertionMode.ReplaceWith)", "ScoreBottomThree", "Gamer", new { },
    //ReplaceWith will replace entire element, so other Ajax.ActionLink will not work.
    new AjaxOptions
    {
        HttpMethod = "GET", // GET or POST, HttpMethod to use.
UpdateTargetId = "divGamers", // Html element ID to update
InsertionMode = InsertionMode.ReplaceWith // Replace entire element, so other Ajax.ActionLink will not
work.
    }, new { @style = "color:Red" })
<br />
<h3>3.</h3>
<h4>
    Test LoadingElementId = "divloading", LoadingElementDuration = 2000
</h4>
@Ajax.ActionLink("All_2Seconds (InsertionMode.Replace)", "All_2Seconds", "Gamer",
new AjaxOptions
{
    HttpMethod = "GET", // GET or POST, HttpMethod to use.
UpdateTargetId = "divGamers", // Html element ID to update

```

```

InsertionMode = InsertionMode.Replace, // Replace the existing contents
LoadingElementId = "divloading" //Html element ID of visual feedback while loading
})
<span style="color:Blue">|</span>
@Ajax.ActionLink("All_2Seconds
(InsertionMode.Replace,LoadingElementDuration=2000)", "All_2Seconds", "Gamer",
new AjaxOptions
{
    HttpMethod = "GET", // GET or POST, HttpMethod to use.
UpdateTargetId = "divGamers", // Html element ID to update
InsertionMode = InsertionMode.Replace, // Replace the existing contents
LoadingElementId = "divloading", //Html element ID of visual feedback while loading
LoadingElementDuration = 2000 //The animaion duration of LoadingElement. (million seconds)
})
<br />
<h3>4.</h3>
<h4>
    Test OnBegin, OnComplete, OnSuccess, OnFailure
</h4>
@Ajax.ActionLink("All_2Seconds (InsertionMode.Replace,OnBegin=ClearReturnData)", "All_2Seconds", "Gamer",
new AjaxOptions
{
    HttpMethod = "GET", // GET or POST, HttpMethod to use.
UpdateTargetId = "divGamers", // Html element ID to update
InsertionMode = InsertionMode.Replace, // Replace the existing contents
LoadingElementId = "divloading", //Html element ID of visual feedback while loading
OnBegin = "OnBeginFunction", //It will be called before the action method is invoked.
OnComplete = "OnCompleteFunction",
OnSuccess = "OnSuccessFunction",
OnFailure = "OnFailureFunction" //It will be called after the page update fails.
}, new { @style = "color:olive" })
<span style="color:Blue">|</span>
@Ajax.ActionLink("All_ThrowException_2Seconds
(InsertionMode.Replace,OnBegin=ClearReturnData)", "All_ThrowException_2Seconds", "Gamer",
new AjaxOptions
{
    HttpMethod = "GET", // GET or POST, HttpMethod to use.
UpdateTargetId = "divGamers", // Html element ID to update
InsertionMode = InsertionMode.Replace, // Replace the existing contents
LoadingElementId = "divloading", //Html element ID of visual feedback while loading
OnBegin = "OnBeginFunction", //It will be called before the action method is invoked.
OnComplete = "OnCompleteFunction",
OnSuccess = "OnSuccessFunction",
OnFailure = "OnFailureFunction" //It will be called after the page update fails.
}, new { @style = "color:olive" })
<br />
<h3>5.</h3>
<h4>
    Test OnBegin = "ClearReturnData", OnSuccess = "CountRows" | OnBegin = "CancelInvoke"
</h4>
@Ajax.ActionLink("All_2Seconds (InsertionMode.Replace,OnBegin=ClearReturnData)", "All_2Seconds", "Gamer",
new AjaxOptions
{
    HttpMethod = "GET", // GET or POST, HttpMethod to use.
UpdateTargetId = "divGamers", // Html element ID to update
InsertionMode = InsertionMode.Replace, // Replace the existing contents

```

```

LoadingElementId = "divloading", //Html element ID of visual feedback while loading
OnBegin = "ClearReturnData", //It will be called before the action method is invoked.
OnSuccess = "CountRows"
})
<span style="color:Blue">|</span>
@Ajax.ActionLink("Score Top 3_2Seconds
(InsertionMode.InsertBefore,OnBegin=ClearReturnData)", "ScoreTopThree_2Seconds", "Gamer",
new AjaxOptions
{
    HttpMethod = "GET", // GET or POST, HttpMethod to use.
UpdateTargetId = "divGamers", // Html element ID to update
InsertionMode = InsertionMode.InsertBefore, // Replace the existing contents
LoadingElementId = "divloading", //Html element ID of visual feedback while loading
OnBegin = "ClearReturnData", //It will be called before the action method is invoked.
OnSuccess = "CountRows"
})
<span style="color:Blue">|</span>
@Ajax.ActionLink("Score bottom 3_2Seconds
(InsertionMode.InsertAfter,OnBegin=ClearReturnData)", "ScoreBottomThree_2Seconds", "Gamer",
new AjaxOptions
{
    HttpMethod = "GET", // GET or POST, HttpMethod to use.
UpdateTargetId = "divGamers", // Html element ID to update
InsertionMode = InsertionMode.InsertAfter, // Replace the existing contents
LoadingElementId = "divloading", //Html element ID of visual feedback while loading
OnBegin = "ClearReturnData", //It will be called before the action method is invoked.
OnSuccess = "CountRows"
})
<span style="color:Blue">|</span>
@Ajax.ActionLink("All_2Seconds (InsertionMode.Replace,OnBegin=CancelInvoke)", "All_2Seconds", "Gamer",
new AjaxOptions
{
    HttpMethod = "GET", // GET or POST, HttpMethod to use.
UpdateTargetId = "divGamers", // Html element ID to update
InsertionMode = InsertionMode.Replace, // Replace the existing contents
LoadingElementId = "divloading", //Html element ID of visual feedback while loading
OnBegin = "CancelInvoke" //It will be called before the action method is invoked.
}, new { @style = "color:darksalmon" })
<br />
<div id="divloading" style="display:none;">
    
</div>
<div id="divGamers"></div>

```

@*

1.

Option of Ajax request response cycle

1.1.

OnBegin = "JavaScriptFunctionName"

JavaScriptFunctionName() will be called before the action method is invoked.

1.2.

OnSuccess = "JavaScriptFunctionName"

JavaScriptFunctionName() will be called
after the response data has been produced
but before the page is updated.

1.3.

OnComplete = "JavaScriptFunctionName"

JavaScriptFunctionName() will be called after the page is updated.

1.4.

OnFailure = "JavaScriptFunctionName"
JavaScriptFunctionName() will be called after the page update fails.
*@

Index2

- 1.
[All \(InsertionMode.Replace\) | Score Top 3 \(InsertionMode.Replace\) | Score bottom 3 \(InsertionMode.Replace\)](#)
- 2.
[All \(InsertionMode.InsertBefore\) | Score Top 3 \(InsertionMode.InsertAfter\) | Score bottom 3 \(InsertionMode.ReplaceWith\)](#)
- 3.
[All_2Seconds \(InsertionMode.Replace\) | All_2Seconds \(InsertionMode.Replace>LoadingElementDuration=2000\)](#)
- 4.
Test OnBegin, OnComplete, OnSuccess, OnFailure
[All_2Seconds \(InsertionMode.Replace,OnBegin=ClearReturnData\) | All_ThrowException_2Seconds \(InsertionMode.Replace,OnBegin=ClearReturnData\)](#)
- 5.
Test OnBegin = "ClearReturnData", OnSuccess = "CountRows" | OnBegin = "CancelInvoke"
[All_2Seconds \(InsertionMode.Replace,OnBegin=ClearReturnData\) | Score Top 3_2Seconds \(InsertionMode.InsertBefore,OnBegin=ClearReturnData\) | Score bottom 3_2Seconds \(InsertionMode.InsertAfter,OnBegin=ClearReturnData\) | All_2Seconds \(InsertionMode.Replace,OnBegin=CancelInvoke\)](#)



Gamer Partial View

Id Name		Gender	Score	GameMoney
1	NameOne ABB	Male	3500	1000
2	NameTwo CDDE	Female	1500	3500
3	NameThree FIJK	Female	4000	2500
4	NameFour LMOPPQ	Male	2500	2500
5	NameFive QRSTT	Male	3500	2500
6	NameSix TUVVX	Female	2500	3500
7	NameSeven XYZZXX	Female	4550	4000
8	NameEight ABBCDE	Male	3550	2500
9	NameNine QRSTTUVXX	Male	2510	3500
10	NameTen AASSVV	Male	3560	2600
11	NameEleven TTBBDD	Female	2650	1500
12	NameTwelve GHSDSWE	Male	4580	1234
13	NameThirteen FSWC	Male	5800	3500
14	NameFourteen QWDEC	Male	1200	6500
15	NameFifteen SSDBV	Male	2300	4200
16	NameSixteen TTNSD	Male	44500	3500
17	NameSeventeen MGFD	Female	2100	1200
18	NameEighteen MGFD	Female	2100	1200
19	NameNineteen DBTC	Female	2600	3500
20	NameTwenty YUKFD	Male	3600	2600

5. OnlineGame.Web - jQuery UI AutoComplete

5.1. Views/Shared/_Layout.cshtml

```
<meta charset="utf-8" />
<meta name="viewport" content="width=device-width, initial-scale=1.0">
<title>@ViewBag.Title - My ASP.NET Application</title>
<link href="~/Content/bootstrap.min.css" rel="stylesheet" type="text/css" />
<link href="~/Content/themes/base/jquery-ui.min.css" rel="stylesheet" />
<link href="~/Content/Site.css" rel="stylesheet" type="text/css" />
@*<script src="~/Scripts/jquery-1.10.2.min.js"></script>*@
<script src="~/Scripts/jquery-1.12.4.min.js"></script>
<script src="~/Scripts/modernizr-2.6.2.js"></script>
<script src="~/Scripts/bootstrap.min.js"></script>
<script src="~/Scripts/jquery-ui-1.12.1.min.js"></script>
<script src="~/Scripts/jquery.validate.min.js"></script>
<script src="~/Scripts/jquery.validate.unobtrusive.min.js"></script>
<script src="~/Scripts/operation.js"></script>
```

5.2. Controllers/GamerController.cs

```
// ----- Begin of jQuery UI AutoComplete -----
//Please see T013, T016

// GET: Gamer
[HttpGet]
public async Task<ActionResult> Index(string searchText)
{
    List<Gamer> gamers = await _db.Gamers
        .Where(x => x.Name.Contains(searchText) || searchText == null)
        .ToListAsync();
    return View(gamers);
}

public async Task<JsonResult> GetGamersName(string term)
{
    List<string> gamersName = await _db.Gamers.Where(s => s.Name.StartsWith(term))
        .Select(x => x.Name).ToListAsync();
    JsonResult jsonResult = Json(gamersName, JsonRequestBehavior.AllowGet);
    //JSONResult to String
    //Reference: https://stackoverflow.com/questions/4571985/jsonresult-to-string
    string jsonResultString = new JavaScriptSerializer().Serialize(jsonResult.Data);
    return Json(gamersName, JsonRequestBehavior.AllowGet);
}
// ----- End of jQuery UI AutoComplete -----
```

5.3. Views/Gamer/Index6.cshtml

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



```

@{
    ViewBag.Title = "Index";
}
<script type="text/javascript" language="javascript">
    $(function () {
        $("#searchText").autocomplete({
            source: '@Url.Action("GetGamersName")',
            minLength: 1
        });
    });
</script>
<h2>@ViewBag.Title</h2>
<div>
    @using (Html.BeginForm("Index", "Gamer", FormMethod.Get))
    {
        <b>Name :</b><br />
        @Html.TextBox("searchText") <br />
        <input type="submit" value="Go" />
    }
</div>
<p>
    @Html.ActionLink("Create New", "Create")
</p>
<table class="table">
    <tr>
        <th>
            @Html.DisplayNameFor(model => model.Name)
        </th>
        <th>
            @Html.DisplayNameFor(model => model.Gender)
        </th>
        <th>
            @Html.DisplayNameFor(model => model.Score)
        </th>
        <th>
            @Html.DisplayNameFor(model => model.GameMoney)
        </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.Score)
            </td>
            <td>
                @Html.DisplayFor(modelItem => item.GameMoney)
            </td>
            <td>
                @Html.ActionLink("Edit", "Edit", new { id=item.Id }) |
                @Html.ActionLink("Details", "Details", new { id=item.Id }) |
            </td>
        </tr>
    }
}

```

```

        @Html.ActionLink("Delete", "Delete", new { id=item.Id })
    </td>
</tr>
}
</table>

```

Index

Name :

NameT

x

NameTwo CDDE

NameThree FIJK

NameTen AASSVV

NameTwelve GHSDSWE

NameThirteen FSWC

NameTwenty YUKFD

	Gender	Score	GameMoney	
	Male	3500	1000	Edit Details Delete
	Female	1500	3500	Edit Details Delete
NameThree FIJK	Female	4000	2500	Edit Details Delete