(T15)討論 ActionFilter 的 Authorize、ChildActionOnly、HandleError
CourseGUID: 8503b39c-5887-4634-8291-facfb3117924
==========
(T15)討論 ActionFilter 的 Authorize、ChildActionOnly、HandleError
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(T15-2)討論 ActionFilter 的 ChildActionOnly (3.)
(T15-3)討論 ActionFilter 的 HandleError、CustomErrorView(自訂錯誤頁) (4. to 5.)
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4.7.4. Test it
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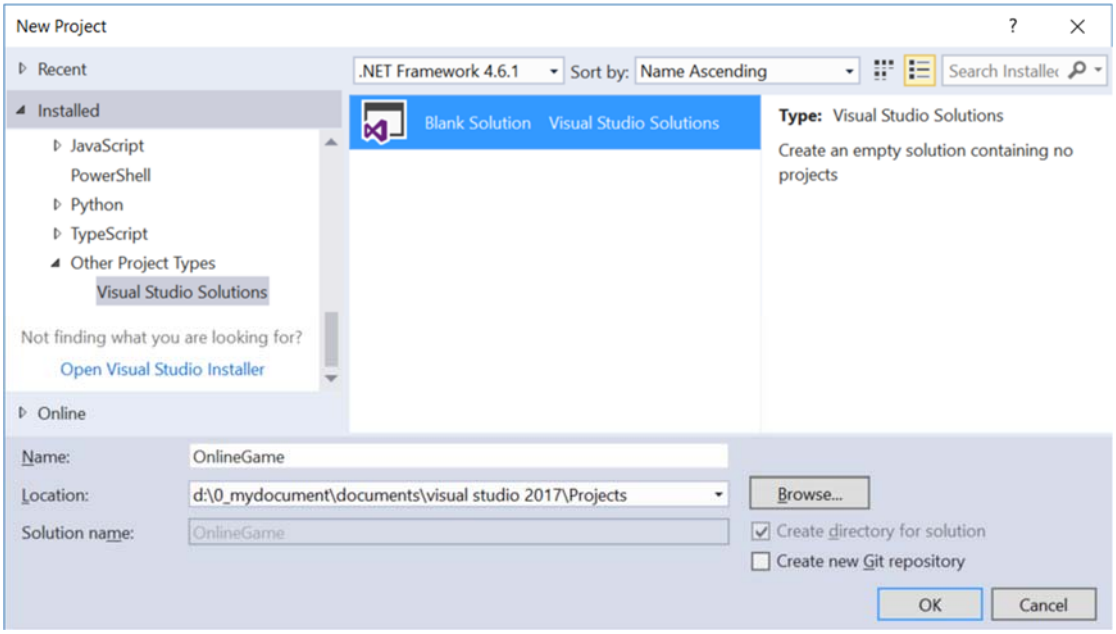
==========

0. Introduction

==========
In this tutorial, we will discuss
* 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
動作過濾器 Action Filter 1 - 常見的 Authorize，ChildActionOnly，HandleError
常見的 動作過濾器 Action Filter，關於 Authorize，ChildActionOnly，HandleError。

1. New Project - OnlineGame

File --> New --> Project... -->
Other Project Types --> Visual Studio Solutions --> Blank Solution
-->
Name: **OnlineGame**

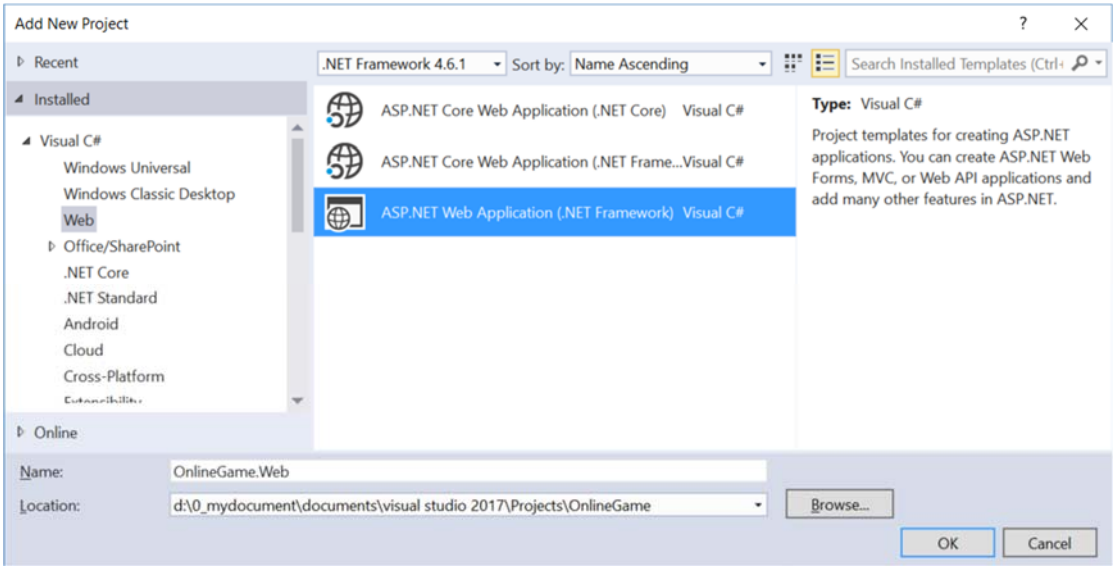


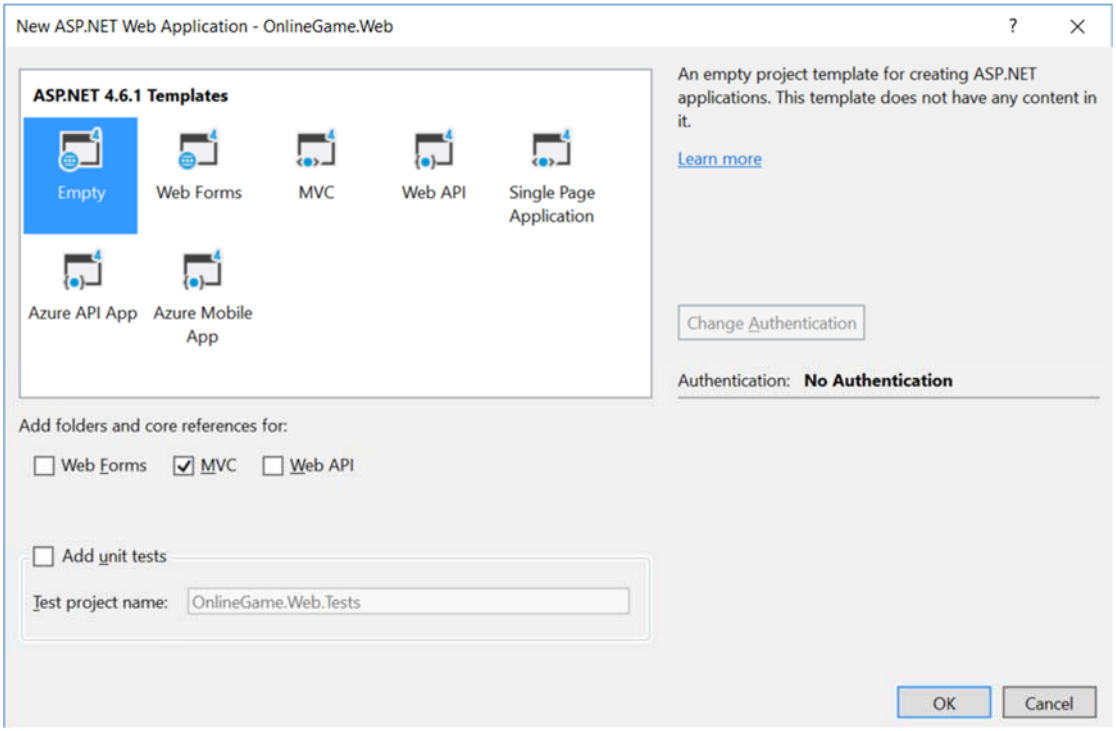
1.1. New Project - OnlineGame.Web

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

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

Name: **OnlineGame.Web**
Empty --> Select "MVC" --> OK





1.1.1. Global.asax.cs

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

1.1.2. 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 = "Home", 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-ignorerouteresource-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.
*/
```

1.1.3. Web.config

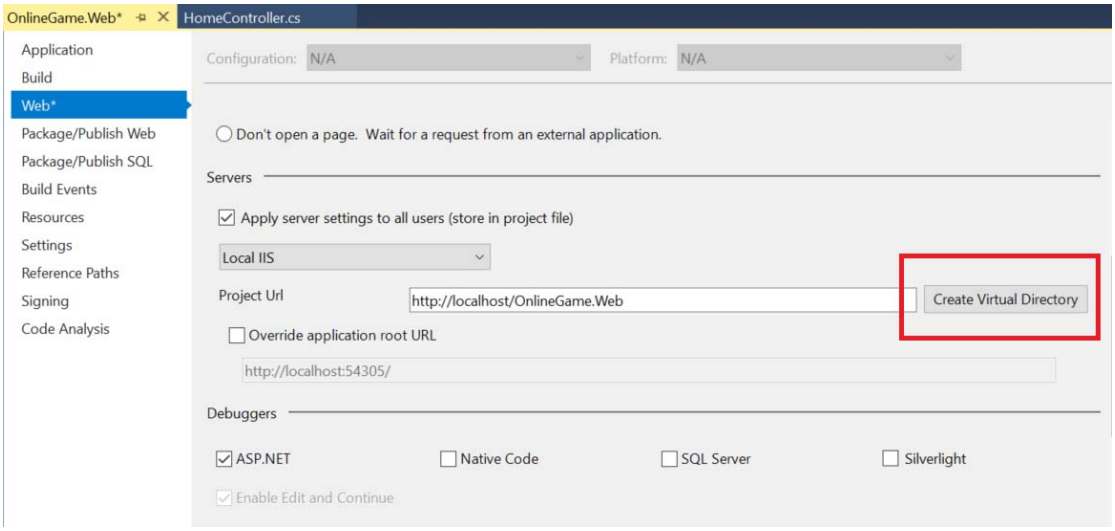
Web.config | Gamer.cs

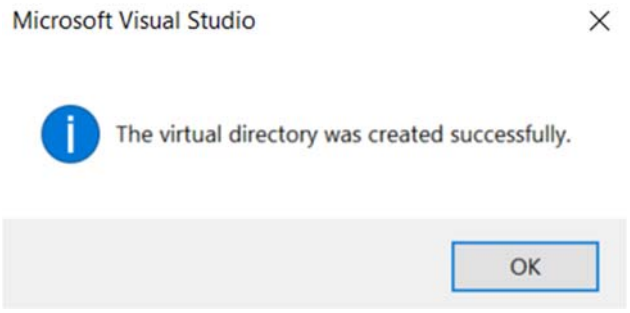
```
4   https://go.microsoft.com/fwlink/?LinkId=301880
5   -->
6   <configuration>
7     <configSections>
8       <!-- For more information on Entity Framework configuration, visit http://go.microsoft.com/
          fwlink/?LinkID=237468 -->
9       <section name="entityFramework"
          type="System.Data.Entity.Internal.ConfigFile.EntityFrameworkSection,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

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

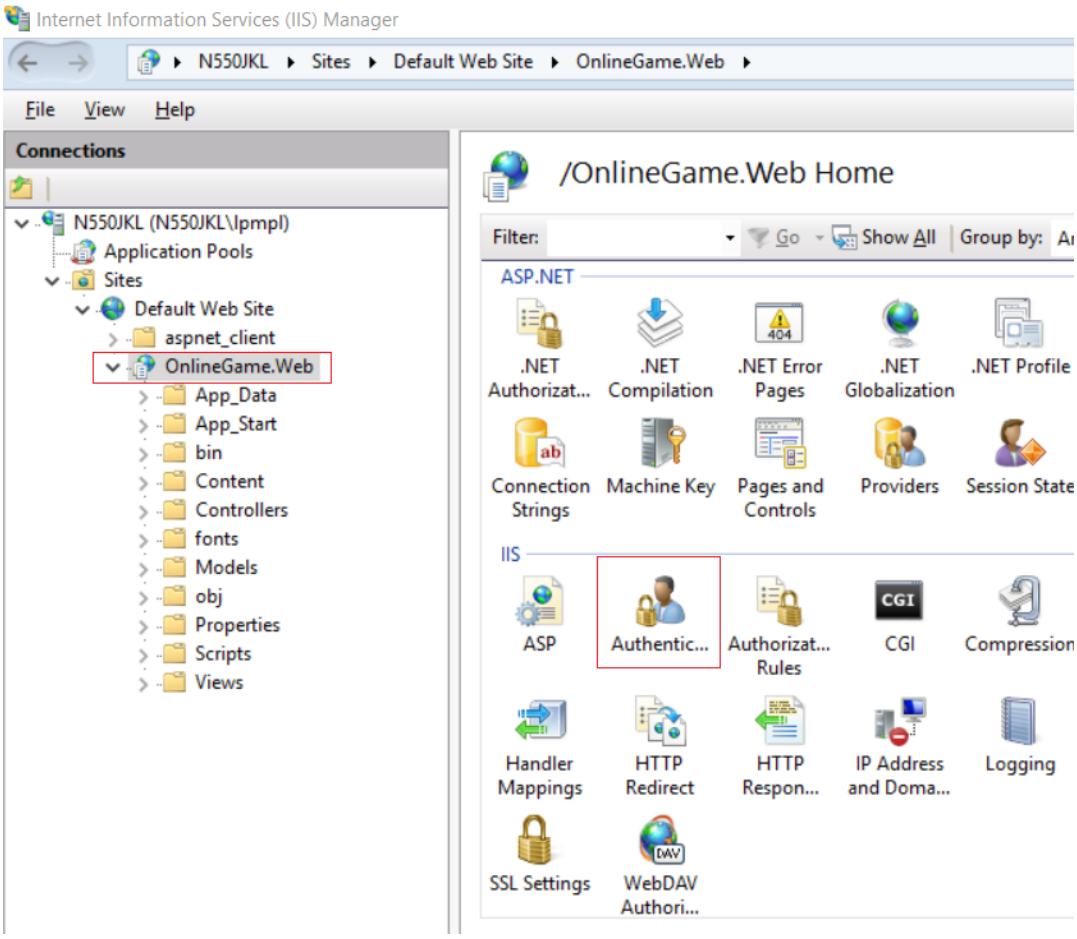
2. OnlineGame.Web - [Authorize]

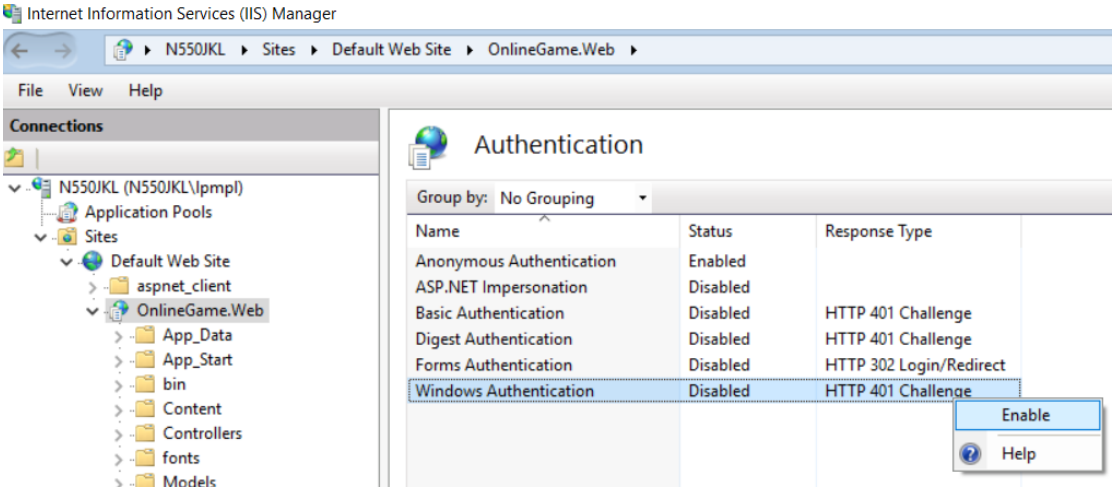
2.1. Run with IIS

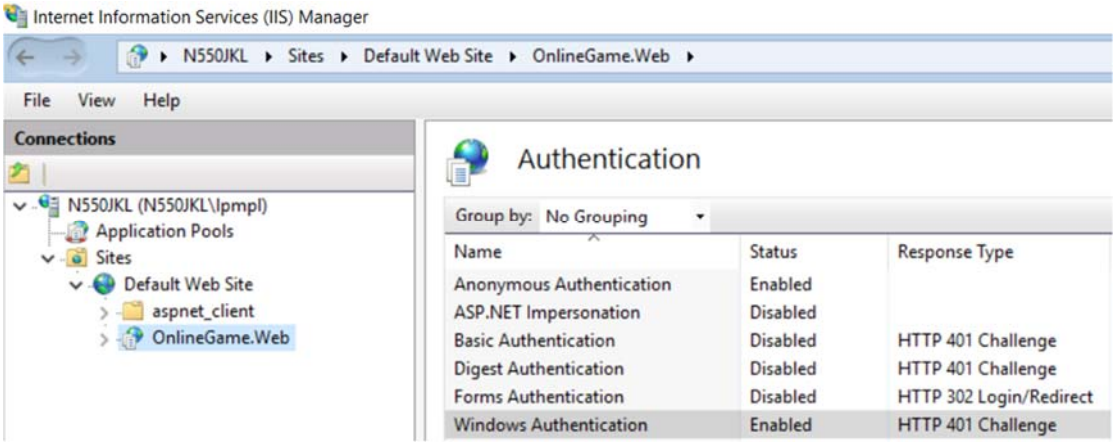




2.2. IIS Authentication


Internet Information Services (IIS) Manager
N550JKL ▸ Sites ▸ Default Web Site ▸ OnlineGame.Web ▸
File View Help
Connections
N550JKL (N550JKL\lpmpl)
Application Pools
Sites
Default Web Site
aspnet_client
OnlineGame.Web
App_Data
App_Start
bin
Content
Controllers
fonts
Models
obj
Properties
Scripts
Views
/OnlineGame.Web Home
Filter:
Go
Show All
Group by:
ASP.NET
.NET Authorizat...
.NET Compilation
.NET Error Pages
.NET Globalization
.NET Profile
Connection Strings
Machine Key
Pages and Controls
Providers
Session State
IIS
ASP
Authentic...
Authorizat... Rules
CGI
Compression
Handler Mappings
HTTP Redirect
HTTP Respon...
IP Address and Doma...
Logging
SSL Settings
WebDAV Authori...


Internet Information Services (IIS) Manager
N550JKL ▸ Sites ▸ Default Web Site ▸ OnlineGame.Web ▸
File View Help
Connections
N550JKL (N550JKL\lpmpl)
Application Pools
Sites
Default Web Site
aspnet_client
OnlineGame.Web
App_Data
App_Start
bin
Content
Controllers
fonts
Models
Authentication
Group by: No Grouping
Name
Status
Response Type
Anonymous Authentication Enabled
ASP.NET Impersonation Disabled
Basic Authentication Disabled HTTP 401 Challenge
Digest Authentication Disabled HTTP 401 Challenge
Forms Authentication Disabled HTTP 302 Login/Redirect
Windows Authentication Disabled HTTP 401 Challenge
Enable
Help


Internet Information Services (IIS) Manager
N550JKL ▸ Sites ▸ Default Web Site ▸ OnlineGame.Web ▸
File View Help
Connections
N550JKL (N550JKL\lpmpl)
Application Pools
Sites
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aspnet_client
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Authentication
Group by: No Grouping
Name
Status
Response Type
Anonymous Authentication Enabled
ASP.NET Impersonation Disabled
Basic Authentication Disabled HTTP 401 Challenge
Digest Authentication Disabled HTTP 401 Challenge
Forms Authentication Disabled HTTP 302 Login/Redirect
Windows Authentication Enabled HTTP 401 Challenge

2.3. Controllers/HomeController.cs

```
using System.Web.Mvc;
namespace OnlineGame.Web.Controllers
{
    ////[Authorize]
    //1.
    //[Authorize] Need authentication to access
    //2.
    //[Authorize] can apply to controller level.
    [Authorize]
    public class HomeController : Controller
    {
        //1.
        ////[AllowAnonymous]
        //If [Authorize] apply to controller level,
        //then you need [AllowAnonymous] to apply to NonSecureIndex()
        [HttpGet]   //Home/NonSecureIndex
        [AllowAnonymous]
        public ActionResult NonSecureIndex()
        {
            return View();
        }
        //[Authorize] //Need authentication to access
        [HttpGet]   //Home/SecureIndex
        public ActionResult SecureIndex()
        {
            return View();
        }
    }
}
```

2.4. Views/Home/NonSecureIndex.cshtml

```
@{
    ViewBag.Title = "NonSecureIndex";
}
<h2>Home NonSecureIndex</h2>
```

2.5. Views/Home/SecureIndex.cshtml

```
@{
    ViewBag.Title = "SecureIndex";
}
<h2>Home SecureIndex</h2>
```

3. OnlineGame.Web - [childactiononly]

3.1. Controllers/Home2Controller.cs

```
using System;
using System.Collections.Generic;
using System.Web.Mvc;
namespace OnlineGame.Web.Controllers
{
    public class Home2Controller : Controller
    {
        // GET: Home2
        [HttpGet]   //Home2/Index
        public ActionResult Index()
        {
            return View();
        }
        [ChildActionOnly]
        [HttpGet]   //Home2/GamersName
        public ActionResult GamersName(List<String> gamersName)
        {
            return View(gamersName);
        }
        [HttpGet]   //Home2/GamersName2
        public ActionResult GamersName2(List<String> gamersName)
        {
            return View(gamersName);
        }
    }
}
/*
1.
//[ChildActionOnly]
1.1.
Background:
In the Views/Home2/Index.cshtml
//@Html.Action("GamersName", new { gamersName = new List<string> { "Name2", "Name1", "Name3" } })
//@{ Html.RenderAction("GamersName", new { gamersName = new List<string> { "Name2", "Name1",
"Name3" } }); }
//@Html.Action("GamersName2", new { gamersName = new List<string> { "Name2", "Name1", "Name3" } })
//@{Html.RenderAction("GamersName2", new { gamersName = new List<string> { "Name2", "Name1",
"Name3" } });}
We call "GamersName" and "GamersName2" action in the index view.
By default of MVC convention,
users can use URL "Home2/GamersName" and "Home2/GamersName2"
to access the GamersName and GamersName2 actions.
We want to prevent the users to access directly to GamersName and GamersName2 actions.
[NoAction] attribute can do so.
But if the [NoAction] attribute applies to GamersName and GamersName2 actions,
then the Views/Home2/Index.cshtml view can not access these actions either.
Thus, we need [ChildActionOnly] attribute.
1.2.
[ChildActionOnly] make GamersName action to be accessible only by a child request.
so no one can make a direct URL request to this action
That means Index.cshtml view can still access this action,
but the users can not use url "Home2/GamersName" to directly access the GamersName action.
[ChildActionOnly] is usually associated with partial views.
*/
```

3.2. Views/Home2/GamersName.cshtml

```
@model List<string>
@{
    ViewBag.Title = "GamersName";
}
<h2>Home2 GamersName</h2>
@foreach (string gamerName in Model)
{
    @gamerName<br />
}
```

Home2/GamersName

Server Error in '/OnlineGame.Web' Application.

The action 'GamersName' is accessible only by a child request.

Description: An unhandled exception occurred during the execution of the current web request. Please review the stack trace for more information about the error and where it originated in the code.

Exception Details: System.InvalidOperationException: The action 'GamersName' is accessible only by a child request.

3.3. Views/Home2/GamersName2.cshtml

```
@model List<string>
@{
    ViewBag.Title = "GamersName";
}
<h2>Home2 GamersName2</h2>
@foreach (string gamerName in Model)
{
    @gamerName<br />
}
```

Home2/GamersName2

Server Error in '/OnlineGame.Web' Application.

Object reference not set to an instance of an object.

Description: An unhandled exception occurred during the execution of the current web request. Please review the stack trace for more information about the error and where it originated in the code.

Exception Details: System.NullReferenceException: Object reference not set to an instance of an object.

Source Error:

```
Line 4:  }
Line 5:  <h2>Home2 GamersName2</h2>
Line 6:  @foreach (string gamerName in Model)
Line 7:  {
Line 8:      @gamerName<br />
```

Source File: D:\1_Git\KL01\0_KL\MVC_KL\T015\OnlineGame\OnlineGame.Web\Views\Home2\GamersName2.cshtml **Line:** 6

Stack Trace:

3.4. Views/Home2/Index.cshtml

```
@{
    ViewBag.Title = "Index";
}
<h2>Home2 Index</h2>
@Html.Action("GamersName", new { gamersName = new List<string> { "Name2", "Name1", "Name3" } })
@{Html.RenderAction("GamersName", new { gamersName = new List<string> { "Name2", "Name1", "Name3" } });}
@Html.Action("GamersName2", new { gamersName = new List<string> { "Name2", "Name1", "Name3" } })
@{Html.RenderAction("GamersName2", new { gamersName = new List<string> { "Name2", "Name1", "Name3" } });}
```

Home2/Index

Home2 Index

Home2 GamersName

Name2
Name1
Name3

© 2018 - My ASP.NET Application

Home2 GamersName

Name2
Name1
Name3

© 2018 - My ASP.NET Application

Home2 GamersName2

Name2
Name1
Name3

© 2018 - My ASP.NET Application

Home2 GamersName2

Name2
Name1
Name3

© 2018 - My ASP.NET Application

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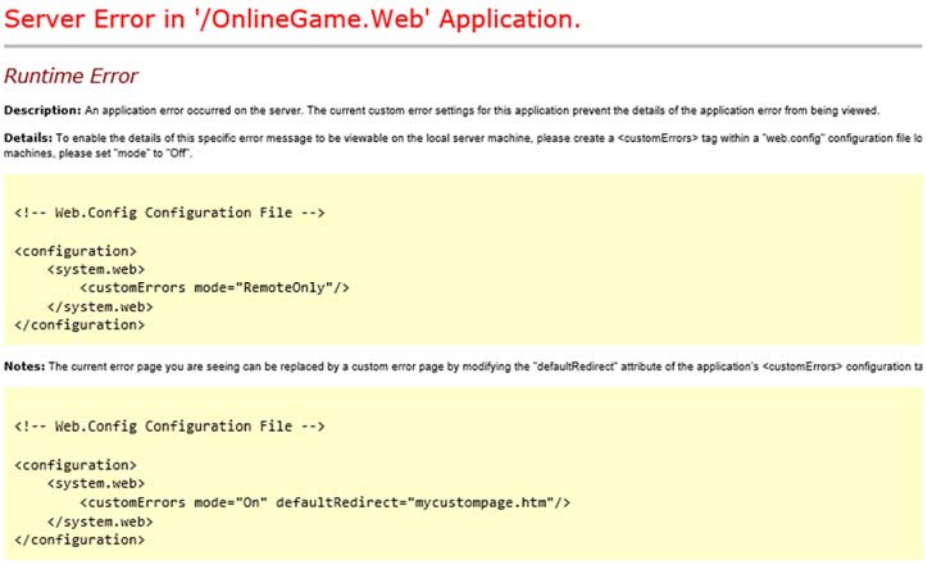
4. OnlineGame.Web - [HandleError]

4.1. Controllers/Home3Controller.cs

```
using System;
using System.Web.Mvc;
namespace OnlineGame.Web.Controllers
{
    public class Home3Controller : Controller
    {
        // GET: Home3
        [HttpGet]   //Home3/Index
```

```
        public ActionResult Index()
        {
            throw new Exception("Exception occurs");
        }
    }
}
```

http://localhost/OnlineGame.Web/home3/index



Server Error in '/OnlineGame.Web' Application.

Runtime Error

Description: An application error occurred on the server. The current custom error settings for this application prevent the details of the application error from being viewed.

Details: To enable the details of this specific error message to be viewable on the local server machine, please create a <customErrors> tag within a "web.config" configuration file lo machines, please set "mode" to "Off".

```
<!-- Web.Config Configuration File -->

<configuration>
    <system.web>
        <customErrors mode="RemoteOnly"/>
    </system.web>
</configuration>
```

Notes: The current error page you are seeing can be replaced by a custom error page by modifying the "defaultRedirect" attribute of the application's <customErrors> configuration ta

```
<!-- Web.Config Configuration File -->

<configuration>
    <system.web>
        <customErrors mode="On" defaultRedirect="mycustompage.htm"/>
    </system.web>
</configuration>
```

4.2. Add Customized Error View

4.2.1. 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
*/
```

4.2.2. 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);
        }
    }
}
```

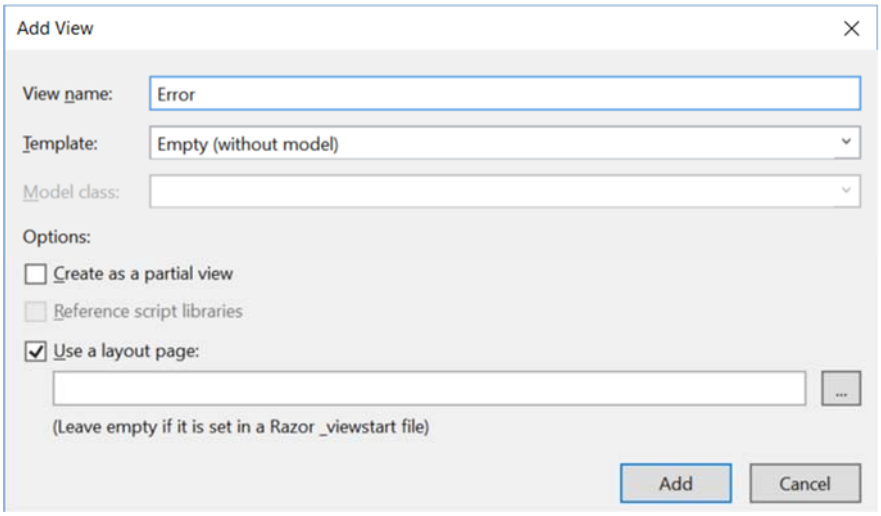
4.2.3. Web.config

Web.config | Home3Controller.cs

```
<?xml version="1.0" encoding="utf-8"?>
<!--
  For more information on how to configure your ASP.NET application, please visit
  https://go.microsoft.com/fwlink/?LinkId=301880
  -->
<configuration>
  <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"/>
  </appSettings>
  <system.web>
    <customErrors mode="On">
    </customErrors>
    <globalization culture="en-au"/>
    <compilation debug="true" targetFramework="4.6.1"/>
    <httpRuntime targetFramework="4.6.1"/>
  </system.web>
```

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

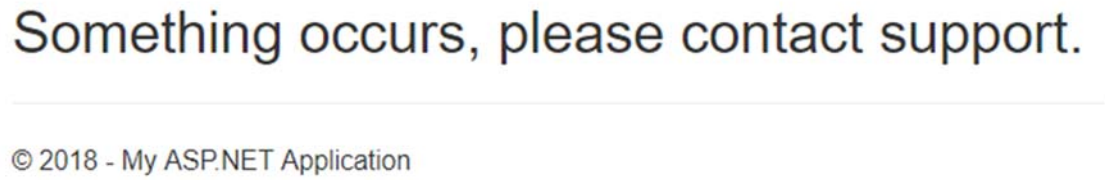
4.2.4. Views/Shared/Error.cshtml




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

4.2.5. Test It

http://localhost/OnlineGame.Web/home3/index



4.3. Add Customized Error View and Error Controller

4.3.1. Controllers/ErrorController.cs

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

```
namespace OnlineGame.Web.Controllers
{
    public class ErrorController : Controller
    {
        //This method can be deleted, because it is not useful.
        [HttpGet]
        public ActionResult DefaultError()
        {
            return View();
        }
        //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>
*/
```

4.3.2. Views/Shared/DefaultError.cshtml

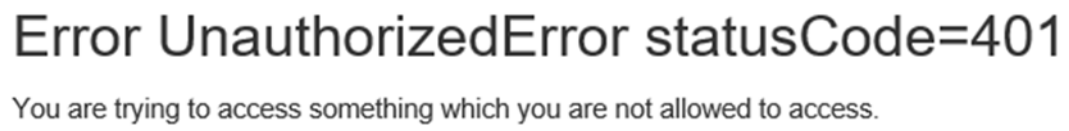
```
@{
    ViewBag.Title = "DefaultError";
}
<h2>Error DefaultError</h2>
```

http://localhost/onlinegame.web/Error/DefaultError

4.3.3. 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.
```

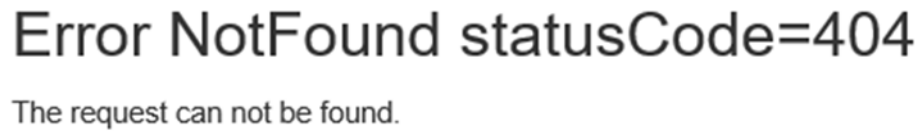
http://localhost/onlinegame.web/Error/UnauthorizedError



4.3.4. Views/Shared/NotFound.cshtml

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

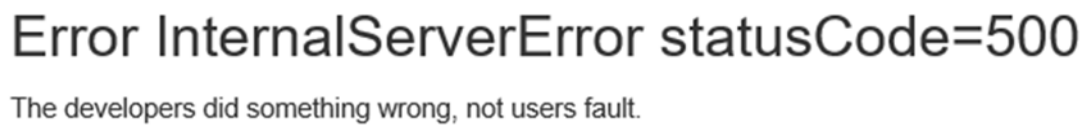
http://localhost/onlinegame.web/Error/NotFound



4.3.5. 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



4.3.6. Web.config

Web.config

```
<?xml version="1.0" encoding="utf-8"?>
<!--
  For more information on how to configure your ASP.NET application, please visit
  https://go.microsoft.com/fwlink/?LinkId=301880
  -->
<configuration>
  <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"/>
  </appSettings>
  <system.web>
    <!--<customErrors mode="On">
    </customErrors>-->
    <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>
    <globalization culture="en-au"/>
    <compilation debug="true" targetFramework="4.6.1"/>
    <httpRuntime targetFramework="4.6.1"/>
  </system.web>
  <runtime>
```

```
<system.web>
    <!--<customErrors mode="On">
    </customErrors>-->
    <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>
    <globalization culture="en-au"/>
    <compilation debug="true" targetFramework="4.6.1"/>
    <httpRuntime targetFramework="4.6.1"/>
  </system.web>
```

4.3.7. Test It

http://localhost/OnlineGame.Web/home3/index

Something occurs, please contact support.

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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>

4.4. Add Customized Error View and Error Controller (Correct Way)

4.4.1. Web.config

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     </customErrors>-->
16     <!--<customErrors mode="On" defaultRedirect="Error/DefaultError">
17       <error statusCode="401" redirect="Error/UnauthorizedError" />
18       <error statusCode="404" redirect="Error/NotFound" />
19       <error statusCode="500" redirect="Error/InternalServerError" />
20     </customErrors>-->
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     <globalization culture="en-au"/>
```

```
<system.web>
    <!--<customErrors mode="On">
    </customErrors>-->
    <!--<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>-->
    <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>
```

4.4.2. Controllers/ErrorController.cs , and delete Views/Shared/DefaultError.cshtml

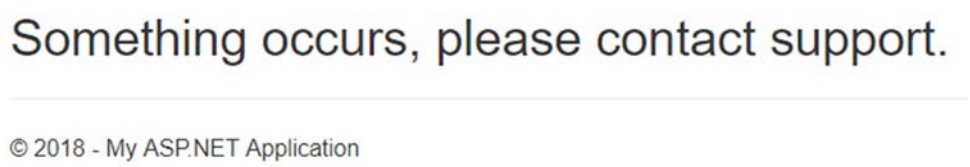
Delete **Views/Shared/DefaultError.cshtml**
Delete **DefaultError()** in **ErrorController.cs**

```
using System.Web.Mvc;
namespace OnlineGame.Web.Controllers
{
    public class ErrorController : Controller
    {
        ////This method can be deleted, because it is not useful.
        //[HttpGet]
        //public ActionResult DefaultError()
        //{
        //    return View();
        //}
        //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>
*/
```

4.4.3. Test It

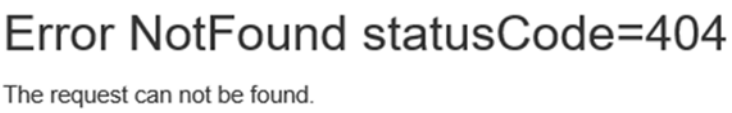
http://localhost/OnlineGame.Web/home3/index



4.5. Test 404 Not Found

http://localhost/OnlineGame.Web/home3/index2

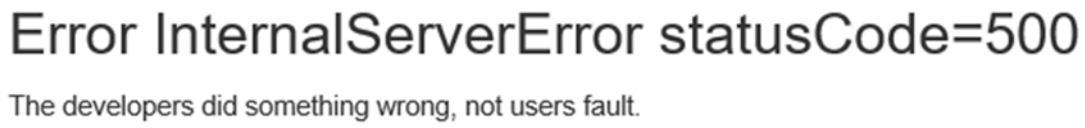
it will redirect to
http://localhost/onlinegame.web/Error/NotFound?aspxerrorpath=/onlinegame.web/home3/index2



4.6. Test 500 Internal Server Error

Delete **Views/Shared/Error.cshtml**

Go to
http://localhost/OnlineGame.Web/home3/index



It supposed to go to **Views/Shared/Error.cshtml**,
but we have just deleted **Views/Shared/Error.cshtml**
Thus, it will return an internal server error.
It means the developers did something wrong.

4.7. [HandleError] attribute

4.7.1. Views/Shared/Error.cshtml

We add the view back.

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

4.7.2. App_Start/FilterConfig.cs

We delete the code which will register the HandleErrorAttribute to global filter.

```
using System.Web;
using System.Web.Mvc;
namespace WebApplication1
{
    public class FilterConfig
    {
        public static void RegisterGlobalFilters(GlobalFilterCollection filters)
        {
            //filters.Add(new HandleErrorAttribute());
        }
    }
}
```

4.7.3. Controllers/Home3Controller.cs

```
using System;
using System.Web.Mvc;
namespace OnlineGame.Web.Controllers
{
    public class Home3Controller : Controller
    {
        // GET: Home3
        [HttpGet]  //Home3/Index
        [HandleError]
        public ActionResult Index()
        {
            throw new Exception("Exception occurs");
        }
        public ActionResult Index3()
        {
            throw new Exception("Exception occurs");
        }
    }
}
```

4.7.4. Test it

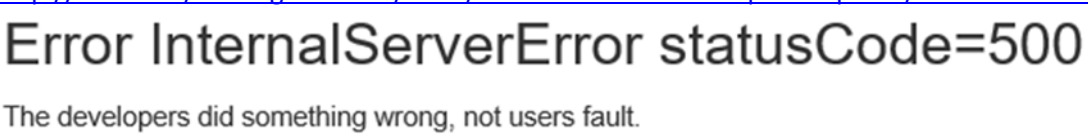
http://localhost/OnlineGame.Web/home3/index

it will redirect to
http://localhost/onlinegame.web/Error/InternalServerError?aspxerrorpath=/OnlineGame.Web/home3/index3

---

http://localhost/OnlineGame.Web/home3/index3

it will redirect to
http://localhost/onlinegame.web/Error/InternalServerError?aspxerrorpath=/OnlineGame.Web/home3/index3



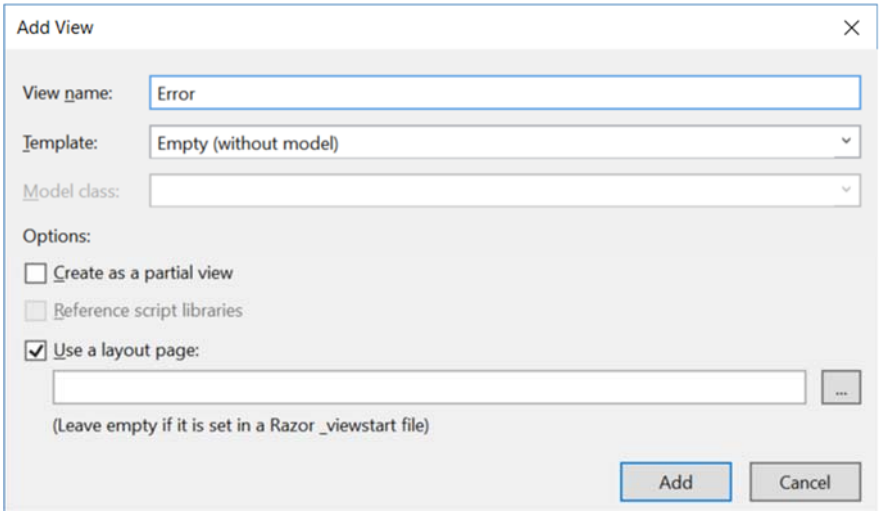
5. Add Customized Error View and Error Controller (Correct Way in Summary)

5.1. Controllers/ErrorController.cs

```
using System.Web.Mvc;
namespace OnlineGame.Web.Controllers
{
    public class ErrorController : Controller
    {
        ////This method can be deleted, because it is not useful.
        //[HttpGet]
        //public ActionResult DefaultError()
        //{
        //    return View();
        //}
        //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>
*/
```

5.2. Views/Shared/Error.cshtml

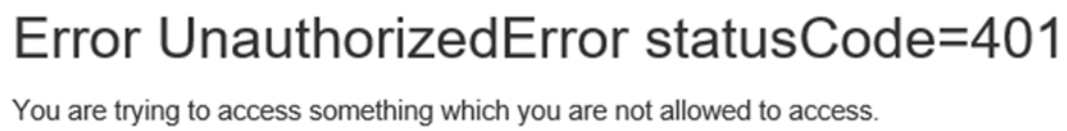



```
@{
    ViewBag.Title = "Error";
}
<h2>Something occurs, please contact support.</h2>
```

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.
```

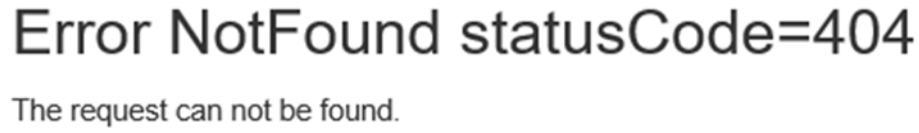
http://localhost/onlinegame.web/Error/UnauthorizedError



5.4. Views/Shared/NotFound.cshtml

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

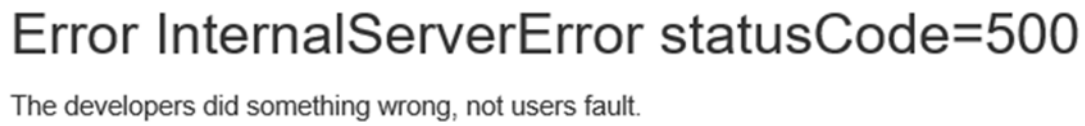
http://localhost/onlinegame.web/Error/NotFound



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



5.6. App_Start/FilterConfig.cs

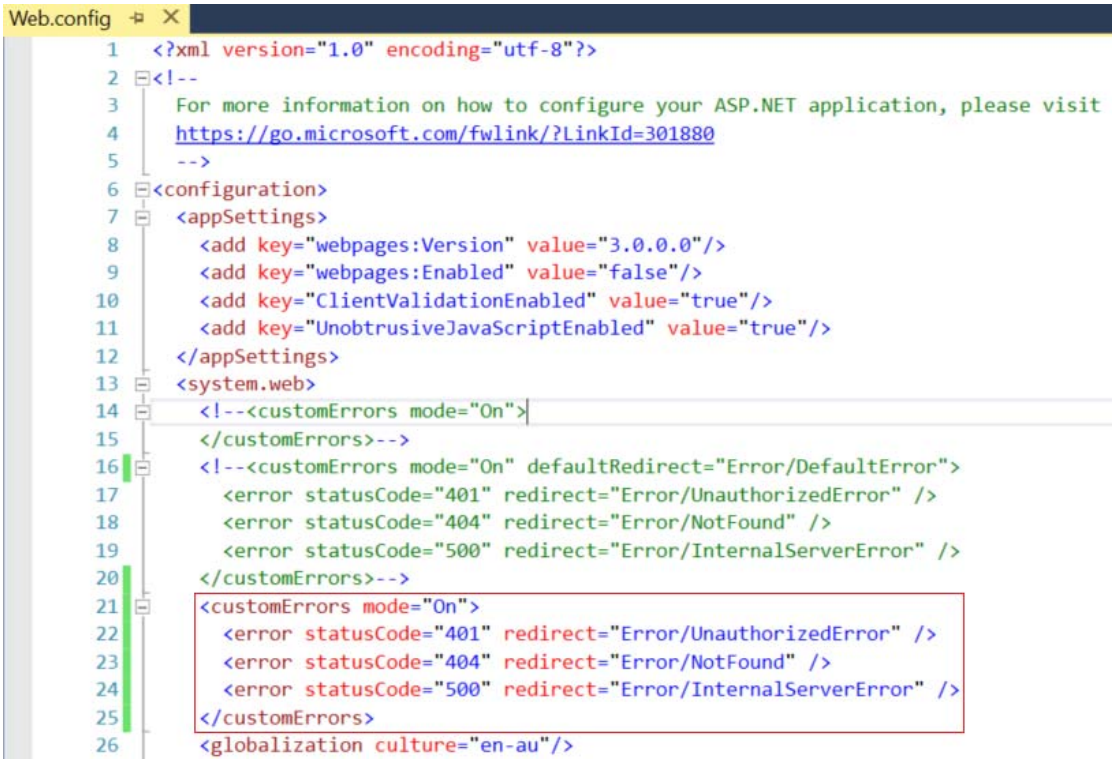
```
using System.Web;
using System.Web.Mvc;
namespace WebApplication1
{
    public class FilterConfig
    {
        public static void RegisterGlobalFilters(GlobalFilterCollection filters)
        {
            filters.Add(new HandleErrorAttribute());
        }
    }
}

/*
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
*/
```

5.7. 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);
        }
    }
}
```

5.8. Web.config




```
<system.web>
    <!--<customErrors mode="On">
    </customErrors>-->
    <!--<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>-->
    <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>
```

5.9. Controllers/Home3Controller.cs (For Test)

You have to delete
`filters.Add(new HandleErrorAttribute());`
in App_Start/FilterConfig.cs
before you test it.

```
using System;
using System.Web.Mvc;
namespace OnlineGame.Web.Controllers
{
    public class Home3Controller : Controller
    {
```

```
        // GET: Home3
        [HttpGet]   //Home3/Index
        [HandleError]
        public ActionResult Index()
        {
            throw new Exception("Exception occurs");
        }
        public ActionResult Index3()
        {
            throw new Exception("Exception occurs");
        }
    }
}
```

5.10. Test It

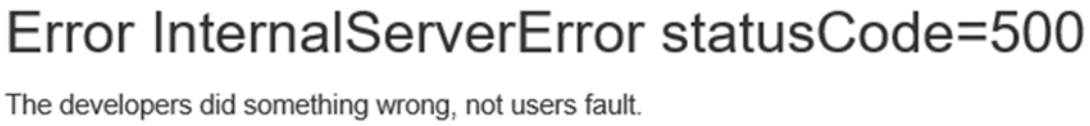
http://localhost/OnlineGame.Web/home3/index

it will redirect to
http://localhost/onlinegame.web/Error/InternalServerError?aspxerrorpath=/OnlineGame.Web/home3/index3

---

http://localhost/OnlineGame.Web/home3/index3

it will redirect to
http://localhost/onlinegame.web/Error/InternalServerError?aspxerrorpath=/OnlineGame.Web/home3/index3



5.11. App_Start/FilterConfig.cs

You have to add
`filters.Add(new HandleErrorAttribute());`
in 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
*/
```