Scaffolding

Introduction: so far manually created the controller and views. This requires a lot of time and manual coding. To overcome this problem using Scaffolding.

*) scaffolding allows you to create auto generated controllers and corresponding views.

*) scaffolding uses predefined convention for naming controller and views.

Def.:

Scaffolding is a technique used by many MVC frameworks like ASP.NET MVC, Ruby on Rails, Cake PHP and Node.JS etc., to generate code for basic CRUD (create, read, update, and delete) operations against your database effectively. Further you can edit or customize this auto generated code according to your need.

Scaffolding provides various templates for creating Controllers and associative views.

1) **Empty MVC controller – derived from Controller class –**
   only one action method index-no code.
2) **MVC controller with empty read/write actions: action method**
   (Index,Details,create,Edit,Delete) – return some code inside them
   Controller Action Method: User own code.
3) **API Controller with empty read/write action: derived from APIController**
   (to build web API application)
4) **MVC controller with read/write actions and views using Entity Framework:**

   (Entity Framework - Database)

   action method (Index,Details,create,Edit,Delete)

   It also generates all the required views and the code to retrieve information from a database.

In Addtion, Scaffolding provides the following templates for creating views:

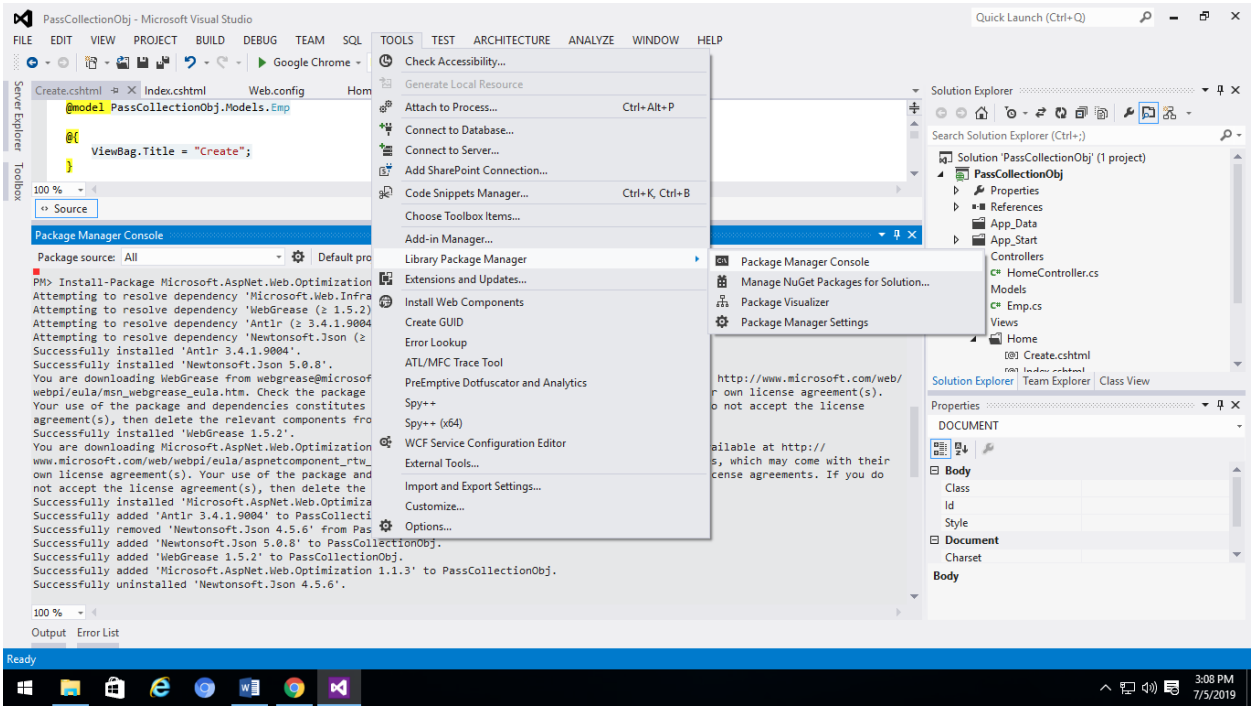
List: This template generates the markup to display the list of model objects

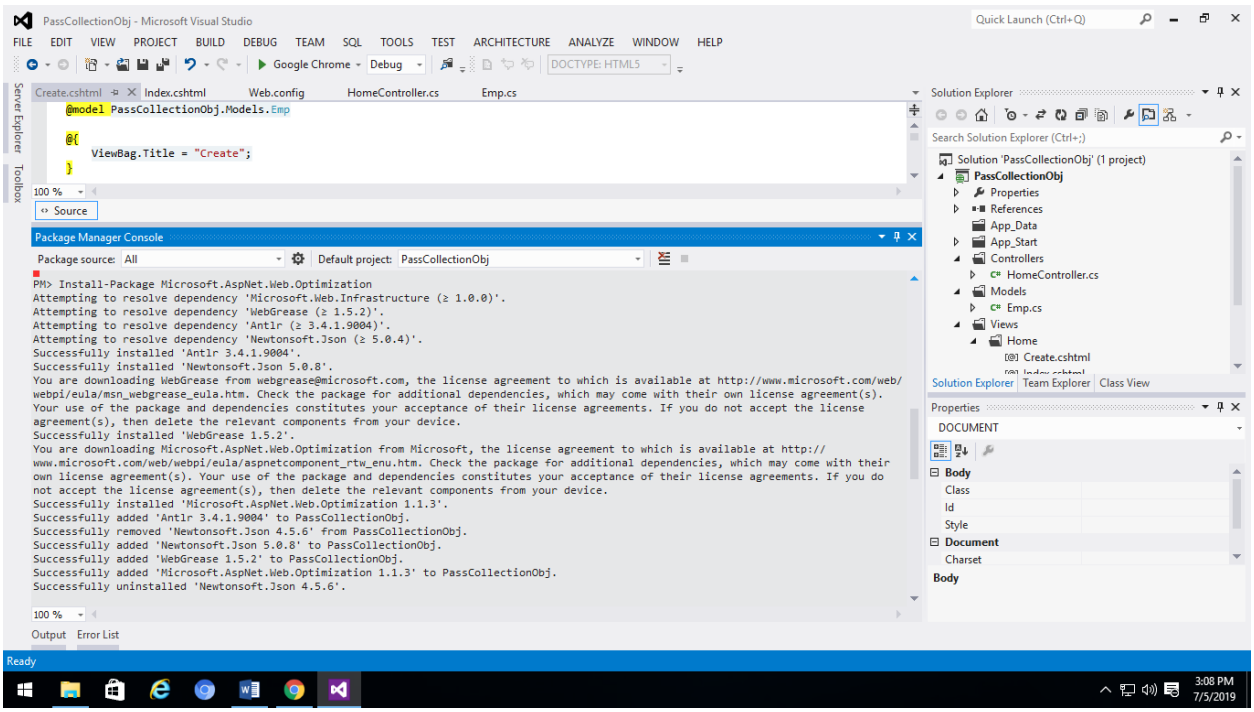
Create: ,, to add a new object to the list.

Edit: ,, to edit an existing model object.

Details: ,, to show the details of an existing model object.

Delete: ,, to delete the model object.





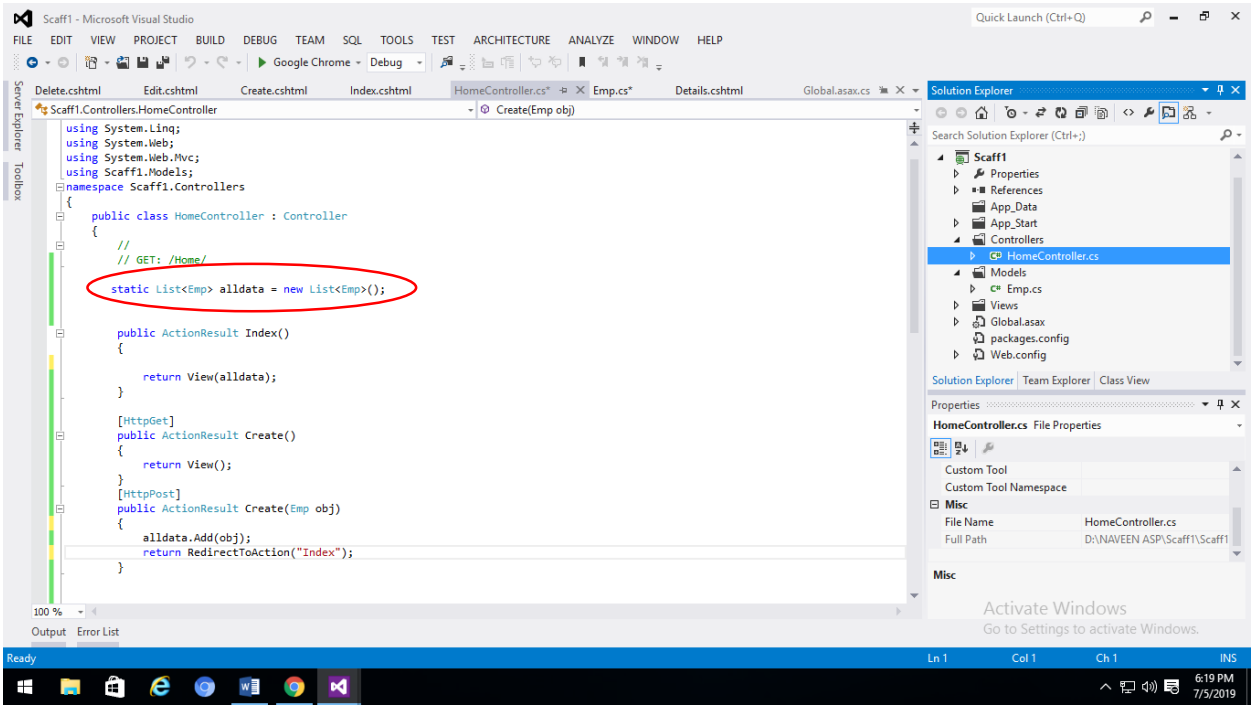
Create Scaffold Template.

Models File(Emp.cs)

```
using System;
using System.Collections.Generic;
```

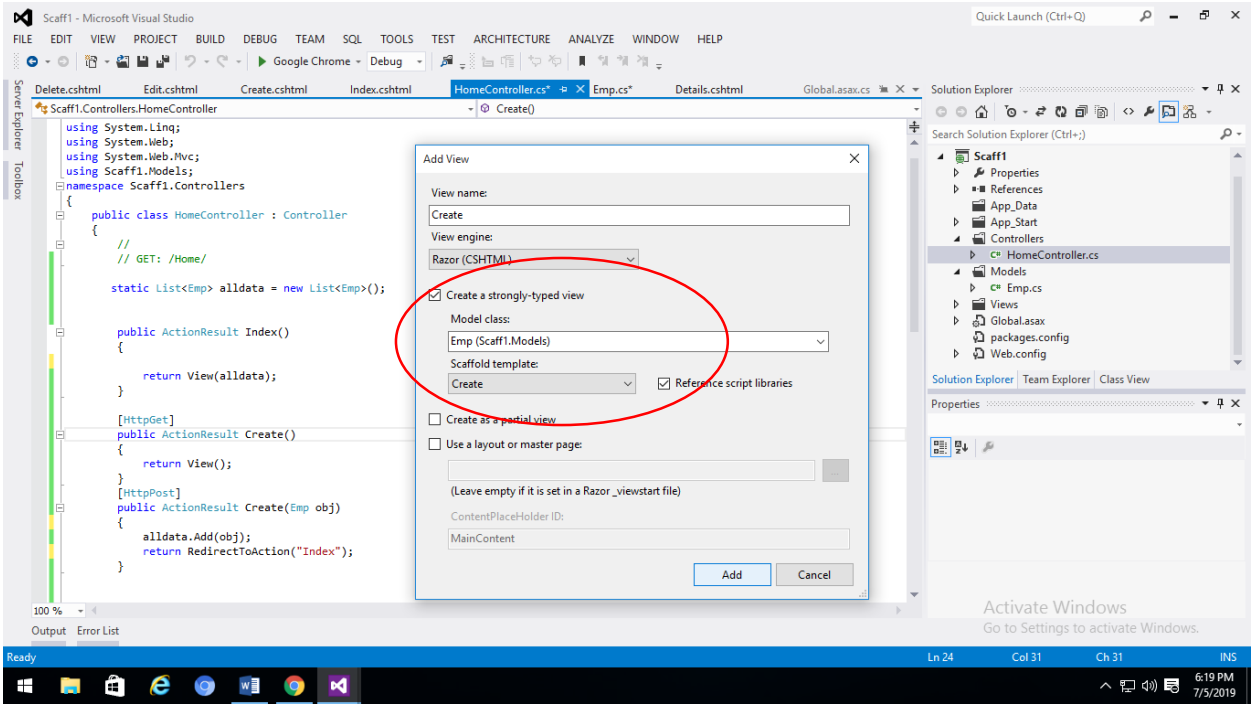
```
using System.Linq;
using System.Web;

namespace Scaff1.Models
{
    public class Emp
    {
        public int eno { get; set; }
        public String ename { get; set; }
        public int esal { get; set; }
      }
}
```

Controllers – right click → add controller → scaffolding template → mvc controller with empty read and write action.



1) right click on Index →add view →scaffold templace → List

2) Right click on Create (httpGet)→addview →scaff fold template → create……add button press.



View file is automatically Generated(: views ->> home → Create.cshtml)

```
@model Scaff1.Models.Emp

@{
    Layout = null;
}

<!DOCTYPE html>

<html>
<head>
    <meta name="viewport" content="width=device-width" />
    <title>Create</title>
</head>
<body>
    <script src="~/Scripts/jquery-1.7.1.min.js"></script>
    <script src="~/Scripts/jquery.validate.min.js"></script>
    <script src="~/Scripts/jquery.validate.unobtrusive.min.js"></script>

    @using (Html.BeginForm()) {
        @Html.ValidationSummary(true)

        <fieldset>
            <legend>Emp</legend>

            <div class="editor-label">
                @Html.LabelFor(model => model.eno)
            </div>
            <div class="editor-field">
                @Html.EditorFor(model => model.eno)
                @Html.ValidationMessageFor(model => model.eno)
            </div>
```

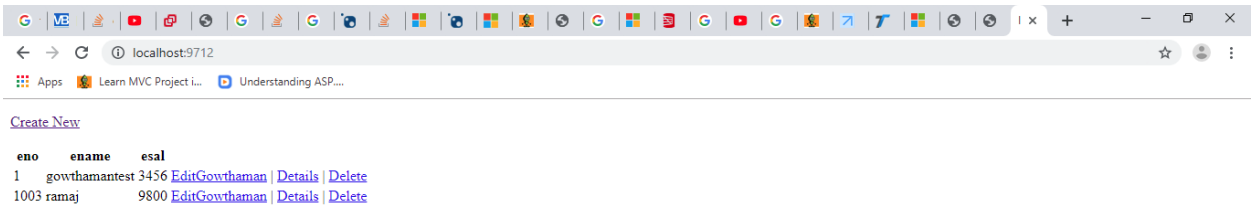
```
            <div class="editor-label">
                @Html.LabelFor(model => model.ename)
            </div>
            <div class="editor-field">
                @Html.EditorFor(model => model.ename)
                @Html.ValidationMessageFor(model => model.ename)
            </div>

            <div class="editor-label">
                @Html.LabelFor(model => model.esal)
            </div>
            <div class="editor-field">
                @Html.EditorFor(model => model.esal)
                @Html.ValidationMessageFor(model => model.esal)
            </div>

            <p>
                <input type="submit" value="Create" />
            </p>
        </fieldset>
    }

    <div>
        @Html.ActionLink("Back to List", "Index")
    </div>
</body>
</html>
```

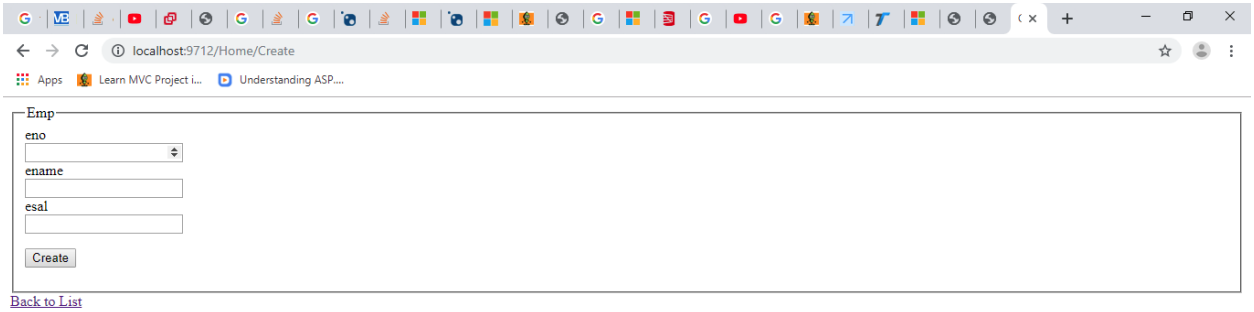
Note: when user click submit button(create) → HTTPPost method called at controller file

Ex:

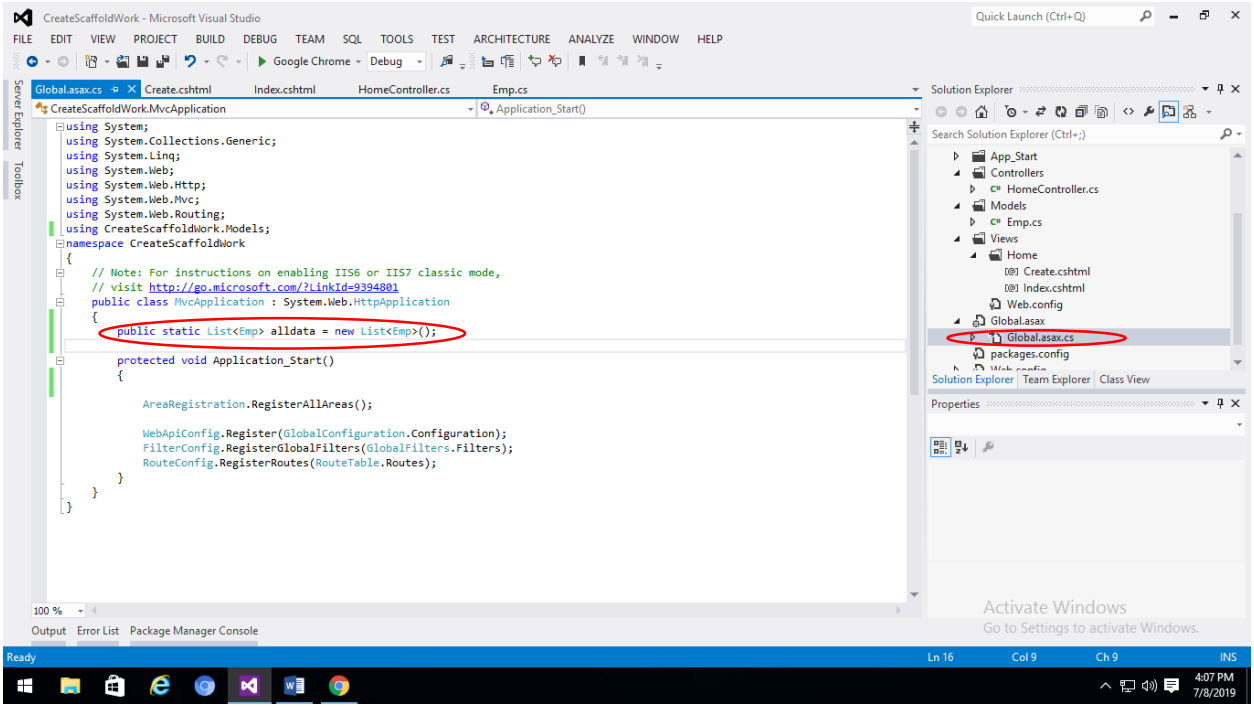
```
  [HttpGet]  // default no need to type [HttpGet] Annodataion
             // controller to view
        public ActionResult Create()
        {
            return View();
        }
 [HttpPost]  // view to contrlller (very important)
        public ActionResult Create(Emp obj)
        {
            alldata.Add(obj);
            return RedirectToAction("Index");
        }
```

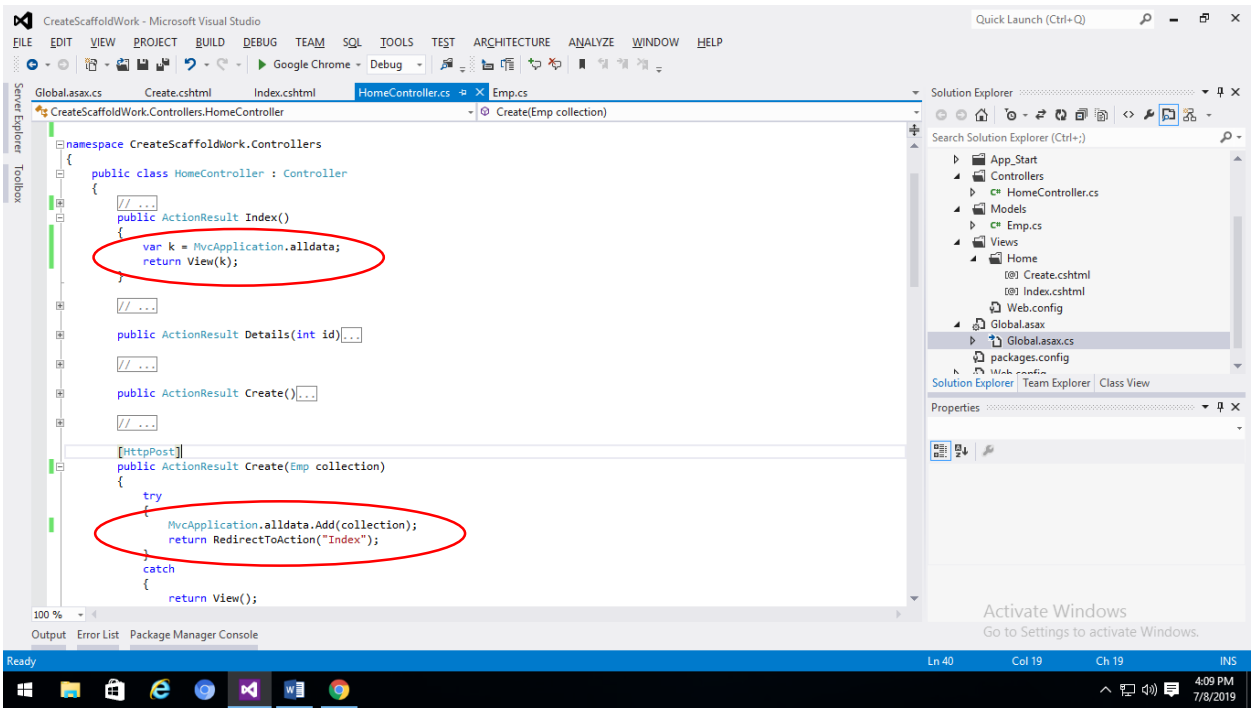
Result:





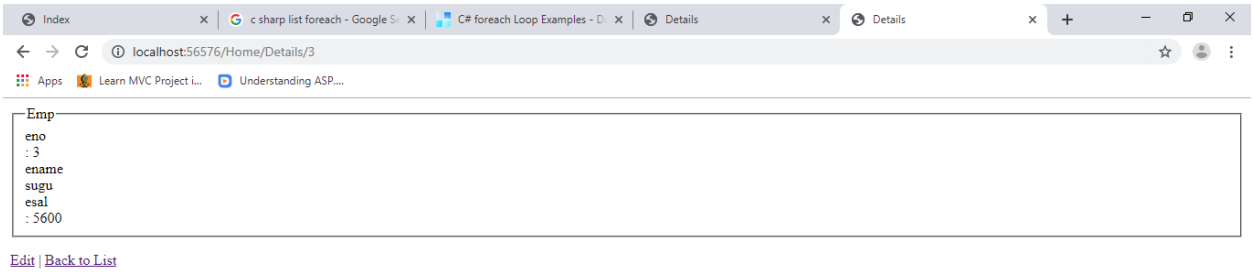
Another Method: using Global.asax file


CreateScaffoldWork - Microsoft Visual Studio
Global.asax.cs
Create.cshtml
Index.cshtml
HomeController.cs
Emp.cs
CreateScaffoldWork.MvcApplication
Application_Start()
using System;
using System.Collections.Generic;
using System.Linq;
using System.Web;
using System.Web.Http;
using System.Web.Mvc;
using System.Web.Routing;
using CreateScaffoldWork.Models;
namespace CreateScaffoldWork
{
// Note: For instructions on enabling IIS6 or IIS7 classic mode,
// visit http://go.microsoft.com/?LinkId=9394801
public class MvcApplication : System.Web.HttpApplication
{
public static List<Emp> alldata = new List<Emp>();
protected void Application_Start()
{
AreaRegistration.RegisterAllAreas();
WebApiConfig.Register(GlobalConfiguration.Configuration);
FilterConfig.RegisterGlobalFilters(GlobalFilters.Filters);
RouteConfig.RegisterRoutes(RouteTable.Routes);
}
}
}
Solution Explorer
App_Start
Controllers
HomeController.cs
Models
Emp.cs
Views
Home
Create.cshtml
Index.cshtml
Web.config
Global.asax
Global.asax.cs
packages.config
Properties
Output
Error List
Package Manager Console
Ready
Ln 16
Col 9
Ch 9
INS


CreateScaffoldWork - Microsoft Visual Studio
Global.asax.cs
Create.cshtml
Index.cshtml
HomeController.cs
Emp.cs
CreateScaffoldWork.Controllers.HomeController
Create(Emp collection)
namespace CreateScaffoldWork.Controllers
{
public class HomeController : Controller
{
// ...
public ActionResult Index()
{
var k = MvcApplication.alldata;
return View(k);
}
// ...
public ActionResult Details(int id)...
// ...
public ActionResult Create()...
// ...
[HttpPost]
public ActionResult Create(Emp collection)
{
try
{
MvcApplication.alldata.Add(collection);
return RedirectToAction("Index");
}
catch
{
return View();
Solution Explorer
App_Start
Controllers
HomeController.cs
Models
Emp.cs
Views
Home
Create.cshtml
Index.cshtml
Web.config
Global.asax
Global.asax.cs
packages.config
Properties
Output
Error List
Package Manager Console
Ready
Ln 40
Col 19
Ch 19
INS

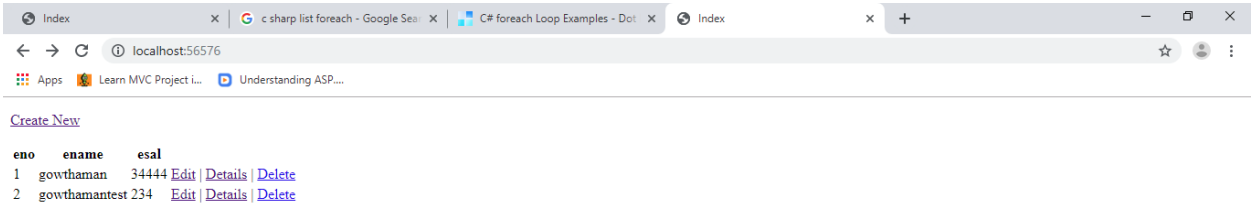
Details Scaffold work(httpget)

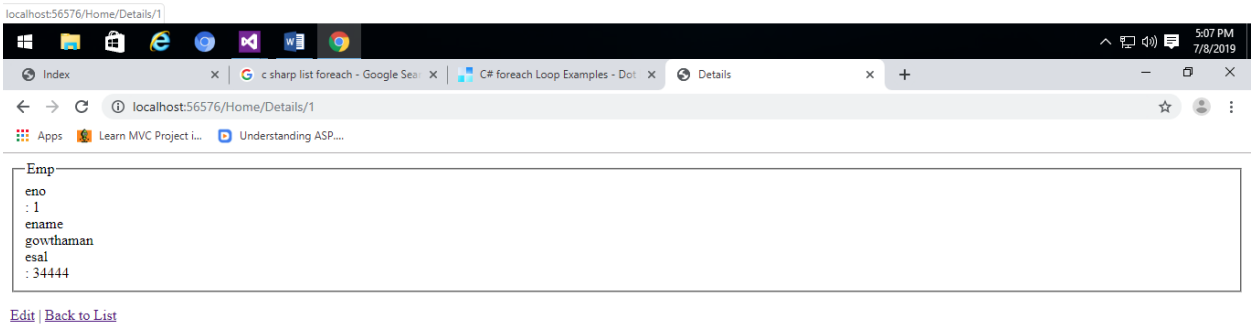
```
public ActionResult Details(int id)
        {

            /*Emp e1 = new Emp();
            e1.ename = "gowthaman";
            e1.eno = 199;
            e1.esal = 2000;*/

            var k = MvcApplication.alldata;
            var temp = new Emp();
            foreach (Emp e in k)
            {
                if (e.eno == id)
                {
                    temp = e;
                    break;
                }
            }
            return View(temp);

        }
```



Details Scaffold template work(HttpPost)

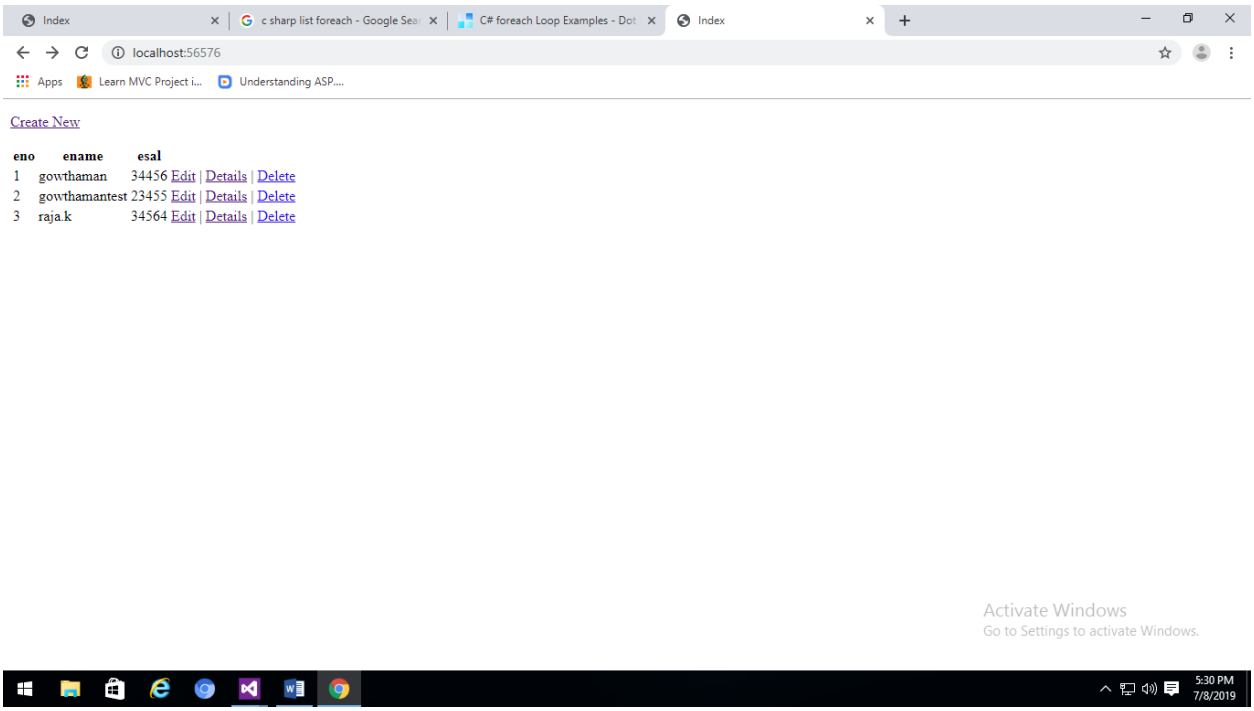
```
[HttpPost]
public ActionResult Details(Emp obj)
{
    return View(obj);
}
```



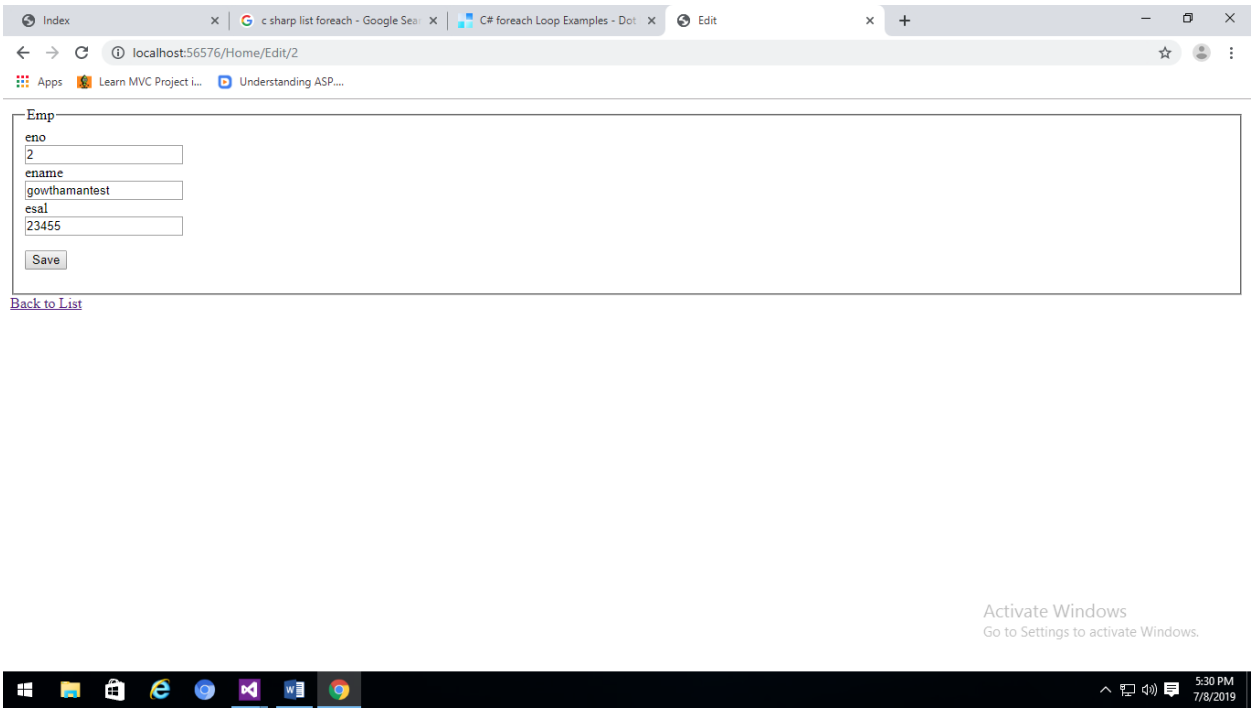


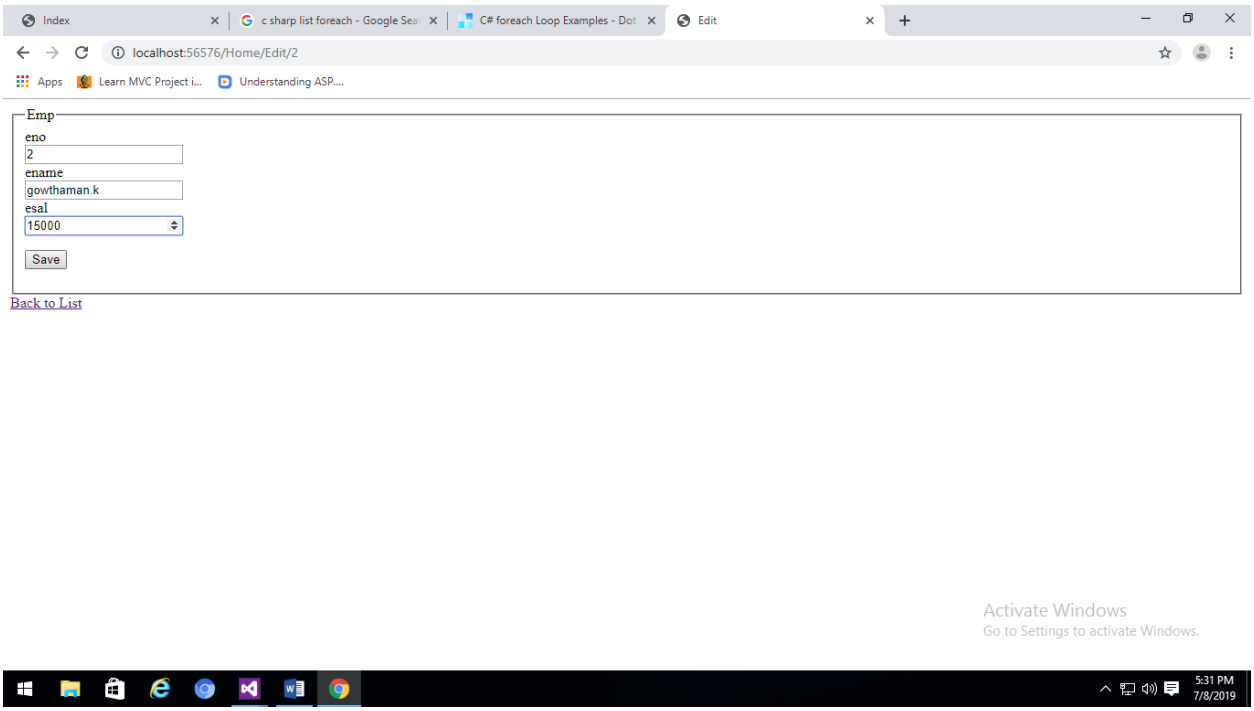
Scaffolding Edit:

```
// GET: /Home/Edit/5

        public ActionResult Edit(int id)
        {

            var k = MvcApplication.alldata;
            var temp = new Emp();
            foreach (Emp e in k)
            {
                if (e.eno == id)
                {
                    temp = e;
                    break;
                }
            }

            return View(temp);
        }

        //
        // POST: /Home/Edit/5

        [HttpPost]
        public ActionResult Edit(int id, Emp obj)
        {
            try
            {
                // TODO: Add update logic here
                var k = MvcApplication.alldata;
                foreach (Emp e in k)
                {
                    if (e.eno == id)
                    {
                        e.ename = obj.ename;
                        e.esal = obj.esal;
                        break;
                    }
                }


                return RedirectToAction("Index");
            }
            catch
            {
                return View();
            }
        }
```

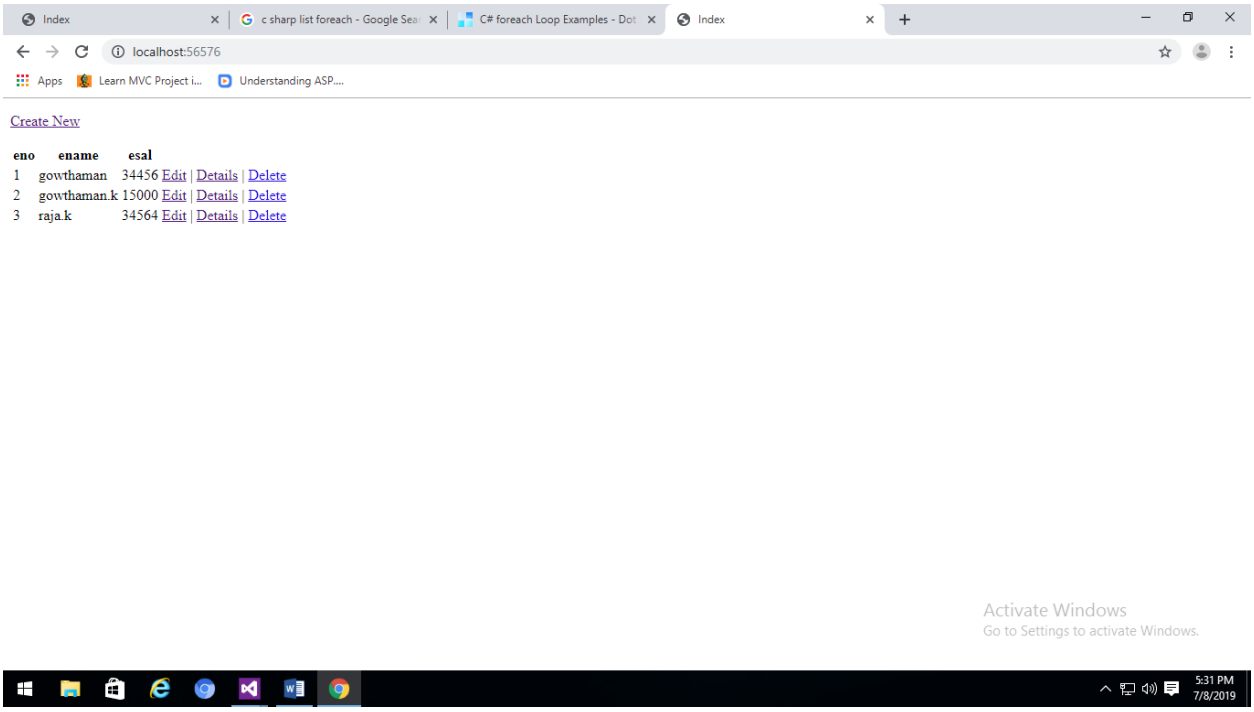


Press edit link



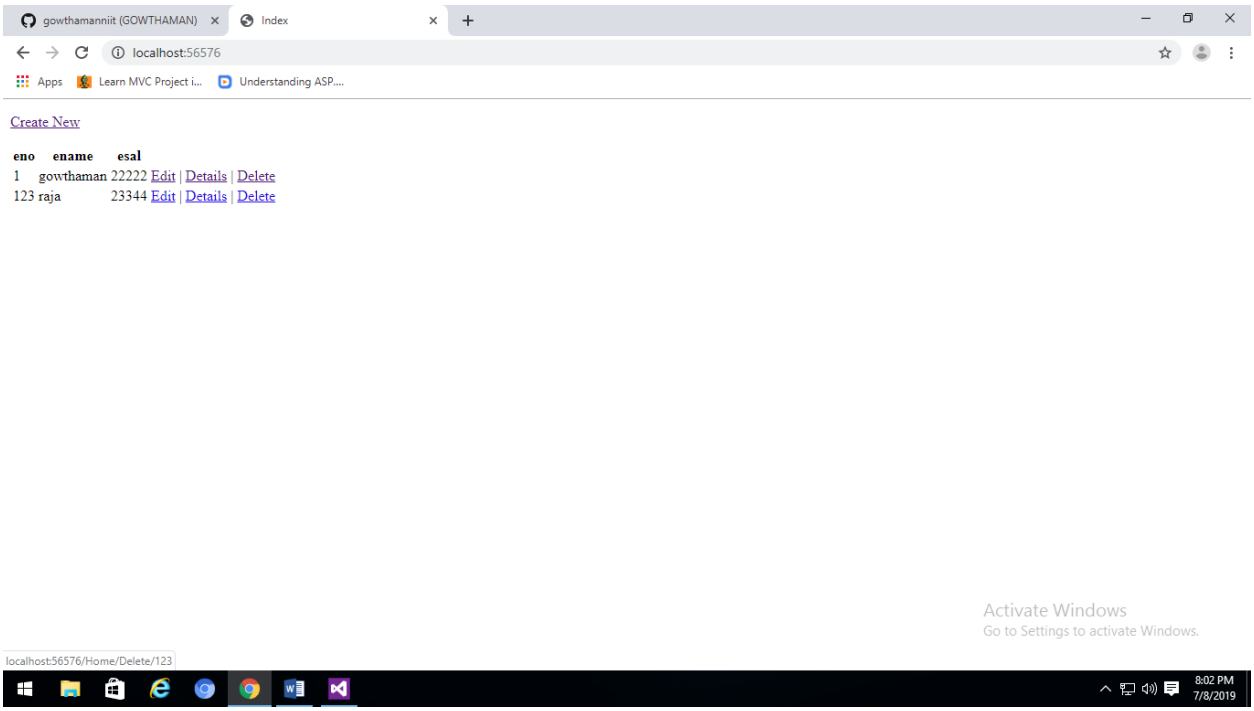


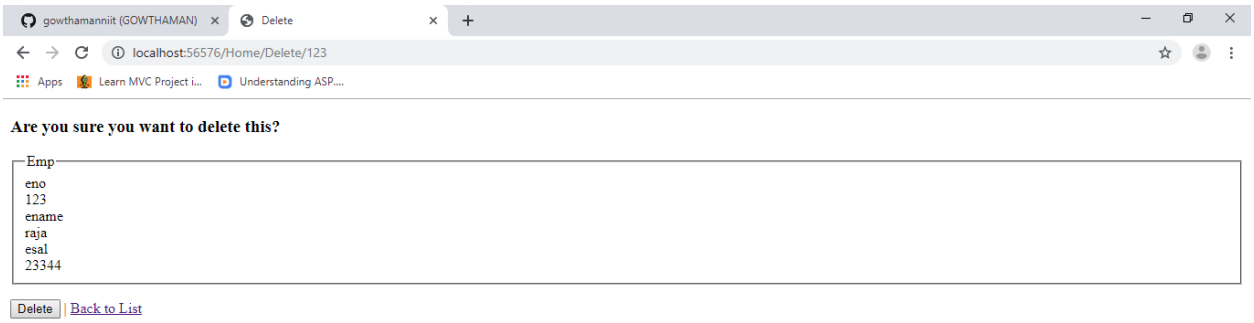
Finally 2nd record updated.

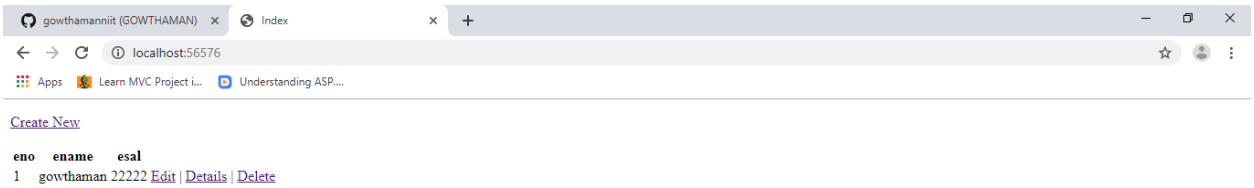


Scaffolding template Delete Work:

```
// GET: /Home/Delete/5

public ActionResult Delete(int id)
{
    var k = MvcApplication.alldata;
    var temp = new Emp();
    foreach (Emp e in k)
    {
        if (e.eno == id)
        {
            temp = e;
            break;
        }
    }
    return View(temp);
}

//
// POST: /Home/Delete/5

[HttpPost]
public ActionResult Delete(int id, Emp obj)
{
    try
    {
        // TODO: Add delete logic here
         //MvcApplication.alldata.Clear();  // all data will erase from memory
        // MvcApplication.alldata.Remove(obj);  // not work

        var k = MvcApplication.alldata;
        var temp = new Emp();
        foreach (Emp e in k)
        {
            if (e.eno == id)
            {
                k.Remove(e);
                break;
            }
        }

        return RedirectToAction("Index");
    }
    catch
    {
        return View();
    }
}
```


gowthamanniit (GOWTHAMAN)
Index
localhost:56576
Apps
Learn MVC Project i...
Understanding ASP....
Create New
eno ename esal
1 gowthaman 22222 Edit | Details | Delete
123 raja 23344 Edit | Details | Delete
Activate Windows
Go to Settings to activate Windows.
localhost:56576/Home/Delete/123
8:02 PM
7/8/2019





Overall Code:(scaffold all templates)

Home controller:

```
using System;
using System.Collections.Generic;
using System.Linq;
using System.Web;
using System.Web.Mvc;
using CreateScaffoldWork.Models;

namespace CreateScaffoldWork.Controllers
{
    public class HomeController : Controller
    {
        //
        // GET: /Home/
        // static List<Emp> alldata = new List<Emp>();
        public ActionResult Index()
        {
            var k = MvcApplication.alldata;
            return View(k);
        }

        //
        // GET: /Home/Details/5

        public ActionResult Details(int id)
        {

            /*Emp e1 = new Emp();
            e1.ename = "gowthaman";
            e1.eno = 199;
            e1.esal = 2000;*/

            var k = MvcApplication.alldata;
            var temp = new Emp();
            foreach (Emp e in k)
            {
                if (e.eno == id)
                {
                    temp = e;
                    break;
                }
            }
            return View(temp);
        }

        [HttpPost]
        public ActionResult Details(Emp obj)
        {
            return View(obj);
        }

        //
        // GET: /Home/Create

        public ActionResult Create()
        {
            return View();
        }
```

```
//
// POST: /Home/Create

[HttpPost]
public ActionResult Create(Emp collection)
{
    try
    {
        MvcApplication.alldata.Add(collection);
        return RedirectToAction("Index");
    }
    catch
    {
        return View();
    }
}

//
// GET: /Home/Edit/5

public ActionResult Edit(int id)
{

    var k = MvcApplication.alldata;
    var temp = new Emp();
    foreach (Emp e in k)
    {
        if (e.eno == id)
        {
            temp = e;
            break;
        }
    }

    return View(temp);
}

//
// POST: /Home/Edit/5

[HttpPost]
public ActionResult Edit(int id, Emp obj)
{
    try
    {

        // TODO: Add update logic here
        var k = MvcApplication.alldata;
        foreach (Emp e in k)
        {
            if (e.eno == id)
            {
                e.ename = obj.ename;
                e.esal = obj.esal;
                break;
            }
        }
```

```
            return RedirectToAction("Index");
        }
        catch
        {
            return View();
        }
    }

    //
    // GET: /Home/Delete/5

    public ActionResult Delete(int id)
    {
        var k = MvcApplication.alldata;
        var temp = new Emp();
        foreach (Emp e in k)
        {
            if (e.eno == id)
            {
                temp = e;
                break;
            }
        }
        return View(temp);
    }

    //
    // POST: /Home/Delete/5

    [HttpPost]
    public ActionResult Delete(int id, Emp obj)
    {
        try
        {
            // TODO: Add delete logic here
             //MvcApplication.alldata.Clear();  // all data will erase from memory
            // MvcApplication.alldata.Remove(obj);  // not work

            var k = MvcApplication.alldata;
            var temp = new Emp();
            foreach (Emp e in k)
            {
                if (e.eno == id)
                {
                    k.Remove(e);
                    break;
                }
            }

            return RedirectToAction("Index");
        }
        catch
        {
            return View();
        }
    }
}
```

```
}
```

Model file

```
using System;
using System.Collections.Generic;
using System.Linq;
using System.Web;

namespace CreateScaffoldWork.Models
{
    public class Emp
    {
        public int eno { get; set; }
        public String ename { get; set; }
        public int esal { get; set; }
    }
}
```

Views (index.cshtml-list scaffold template- view)

```
@model IEnumerable<CreateScaffoldWork.Models.Emp>

@{
    Layout = null;
}

<!DOCTYPE html>

<html>
<head>
    <meta name="viewport" content="width=device-width" />
    <title>Index</title>
</head>
<body>
    <p>
        @Html.ActionLink("Create New", "Create")
    </p>
    <table>
        <tr>
            <th>
                @Html.DisplayNameFor(model => model.eno)
            </th>
            <th>
                @Html.DisplayNameFor(model => model.ename)
            </th>
            <th>
                @Html.DisplayNameFor(model => model.esal)
            </th>
            <th></th>
        </tr>

    @foreach (var item in Model) {
        <tr>
            <td>
```

```
                @Html.DisplayFor(modelItem => item.eno)
            </td>
            <td>
                @Html.DisplayFor(modelItem => item.ename)
            </td>
            <td>
                @Html.DisplayFor(modelItem => item.esal)
            </td>
            <td>
                @Html.ActionLink("Edit", "Edit", new {  id=item.eno }) |
                @Html.ActionLink("Details", "Details", new { id=item.eno }) |
                @Html.ActionLink("Delete", "Delete", new {  id=item.eno  })

            </td>
        </tr>
    }

    </table>
</body>
</html>
```

Edit view (cshtml)

```
@model CreateScaffoldWork.Models.Emp

@{
    Layout = null;
}

<!DOCTYPE html>

<html>
<head>
    <meta name="viewport" content="width=device-width" />
    <title>Edit</title>
</head>
<body>
    <script src="~/Scripts/jquery-1.7.1.min.js"></script>
    <script src="~/Scripts/jquery.validate.min.js"></script>
    <script src="~/Scripts/jquery.validate.unobtrusive.min.js"></script>

    @using (Html.BeginForm()) {
        @Html.ValidationSummary(true)

        <fieldset>
            <legend>Emp</legend>

            <div class="editor-label">
                @Html.LabelFor(model => model.eno)
            </div>
            <div class="editor-field">
                @Html.EditorFor(model => model.eno)
                @Html.ValidationMessageFor(model => model.eno)
            </div>

            <div class="editor-label">
                @Html.LabelFor(model => model.ename)
```

```
            </div>
            <div class="editor-field">
                @Html.EditorFor(model => model.ename)
                @Html.ValidationMessageFor(model => model.ename)
            </div>

            <div class="editor-label">
                @Html.LabelFor(model => model.esal)
            </div>
            <div class="editor-field">
                @Html.EditorFor(model => model.esal)
                @Html.ValidationMessageFor(model => model.esal)
            </div>

            <p>
                <input type="submit" value="Save" />
            </p>
        </fieldset>
    }

    <div>
        @Html.ActionLink("Back to List", "Index")
    </div>
</body>
</html>
```

Delete View

```
@model CreateScaffoldWork.Models.Emp

@{
    Layout = null;
}

<!DOCTYPE html>

<html>
<head>
    <meta name="viewport" content="width=device-width" />
    <title>Delete</title>
</head>
<body>
    <h3>Are you sure you want to delete this?</h3>
    <fieldset>
        <legend>Emp</legend>

        <div class="display-label">
             @Html.DisplayNameFor(model => model.eno)
        </div>
        <div class="display-field">
            @Html.DisplayFor(model => model.eno)
        </div>

        <div class="display-label">
             @Html.DisplayNameFor(model => model.ename)
        </div>
        <div class="display-field">
            @Html.DisplayFor(model => model.ename)
        </div>
```

```
        <div class="display-label">
             @Html.DisplayNameFor(model => model.esal)
        </div>
        <div class="display-field">
            @Html.DisplayFor(model => model.esal)
        </div>
    </fieldset>
    @using (Html.BeginForm()) {
        <p>
            <input type="submit" value="Delete" /> |
            @Html.ActionLink("Back to List", "Index")
        </p>
    }

</body>
</html>
```

Create view:

```
@model CreateScaffoldWork.Models.Emp

@{
    Layout = null;
}

<!DOCTYPE html>

<html>
<head>
    <meta name="viewport" content="width=device-width" />
    <title>Create</title>
</head>
<body>
    <script src="~/Scripts/jquery-1.7.1.min.js"></script>
    <script src="~/Scripts/jquery.validate.min.js"></script>
    <script src="~/Scripts/jquery.validate.unobtrusive.min.js"></script>

    @using (Html.BeginForm()) {
        @Html.ValidationSummary(true)

        <fieldset>
            <legend>Emp</legend>

            <div class="editor-label">
                @Html.LabelFor(model => model.eno)
            </div>
            <div class="editor-field">
                @Html.EditorFor(model => model.eno)
                @Html.ValidationMessageFor(model => model.eno)
            </div>

            <div class="editor-label">
                @Html.LabelFor(model => model.ename)
            </div>
            <div class="editor-field">
                @Html.EditorFor(model => model.ename)
```

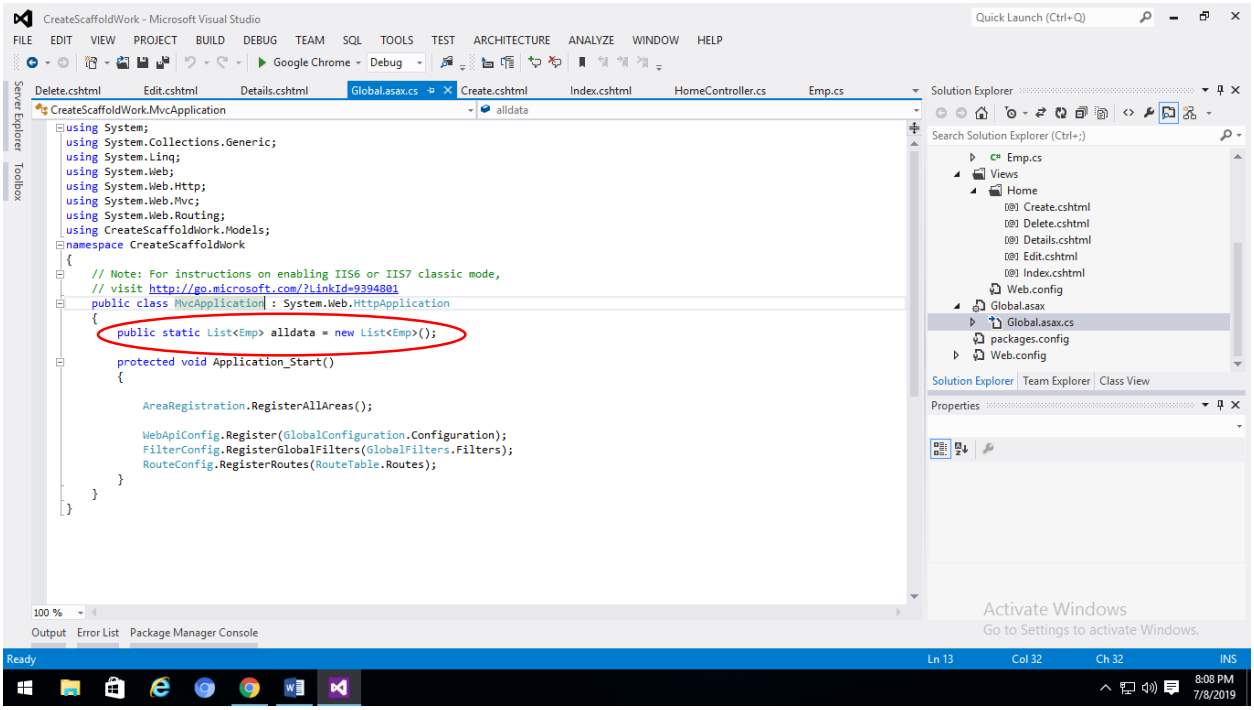
```
                @Html.ValidationMessageFor(model => model.ename)
            </div>

            <div class="editor-label">
                @Html.LabelFor(model => model.esal)
            </div>
            <div class="editor-field">
                @Html.EditorFor(model => model.esal)
                @Html.ValidationMessageFor(model => model.esal)
            </div>

            <p>
                <input type="submit" value="Create" />
            </p>
        </fieldset>
    }

    <div>
        @Html.ActionLink("Back to List", "Index")
    </div>
</body>
</html>
```

Details view:

```
@model CreateScaffoldWork.Models.Emp

@{
    Layout = null;
}

<!DOCTYPE html>

<html>
<head>
    <meta name="viewport" content="width=device-width" />
    <title>Details</title>
</head>
<body>
    <fieldset>
        <legend>Emp</legend>

        <div class="display-label">
             @Html.DisplayNameFor(model => model.eno)
        </div>
        <div class="display-field">
         :    @Html.DisplayFor(model => model.eno)
        </div>

        <div class="display-label">
             @Html.DisplayNameFor(model => model.ename)
        </div>
        <div class="display-field">
            @Html.DisplayFor(model => model.ename)
        </div>

        <div class="display-label">
```

```
            @Html.DisplayNameFor(model => model.esal)
        </div>
        <div class="display-field">
            : @Html.DisplayFor(model => model.esal)
        </div>
    </fieldset>
    <p>
        @Html.ActionLink("Edit", "Edit", new { /* id=Model.PrimaryKey */ }) |
        @Html.ActionLink("Back to List", "Index")
    </p>
</body>
</html>
```

Global.asax file



https://www.youtube.com/watch?v=ItSA19x4RU0

https://www.youtube.com/watch?v=2WH9FiQLzTY (create)