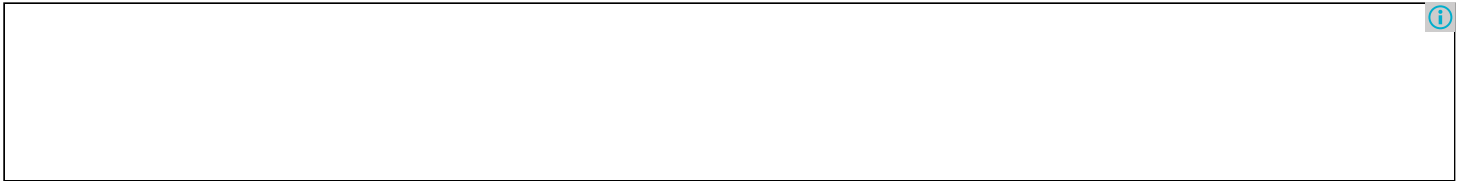




Insert Update Delete In ASP.NET MVC 5 Without Entity Framework



■ In this article you will learn:

1. ☒ *ASP.NET MVC 5 with ADO.Net Connectivity*
2. ☒ *CRUD - CREATE, READ, UPDATE and DELETE Operation*

In this article you are going to learn how to **Insert, Update and Delete Records in ASP.NET MVC 5 without using heavy entity framework**. This article uses pure ADO.Net commands to work with SQL database. You will learn MVC 5 application with ado.net connectivity with complete pictorial guide and step by step examples. Once you complete this article, I promise, you will be able to write your own customize code in MVC 5. If you are beginners or trying to learn MVC, then don't skip this tutorial, because this article contains complete programming example with screen shot. As I understand the need of beginners that they require complete programming example instead of part of the code.

LET'S START ASP.NET MVC 5 WITH CRUD OPERATION

In this example, I am going to create a simple student registration form in MVC5 using CRUD (Create, Read, Update and Delete) Operation. In this tutorial I haven't use heavy entity framework and gives

you way to write transparent ADO.NET Connectivity.

I have divided the entire article in following parts.

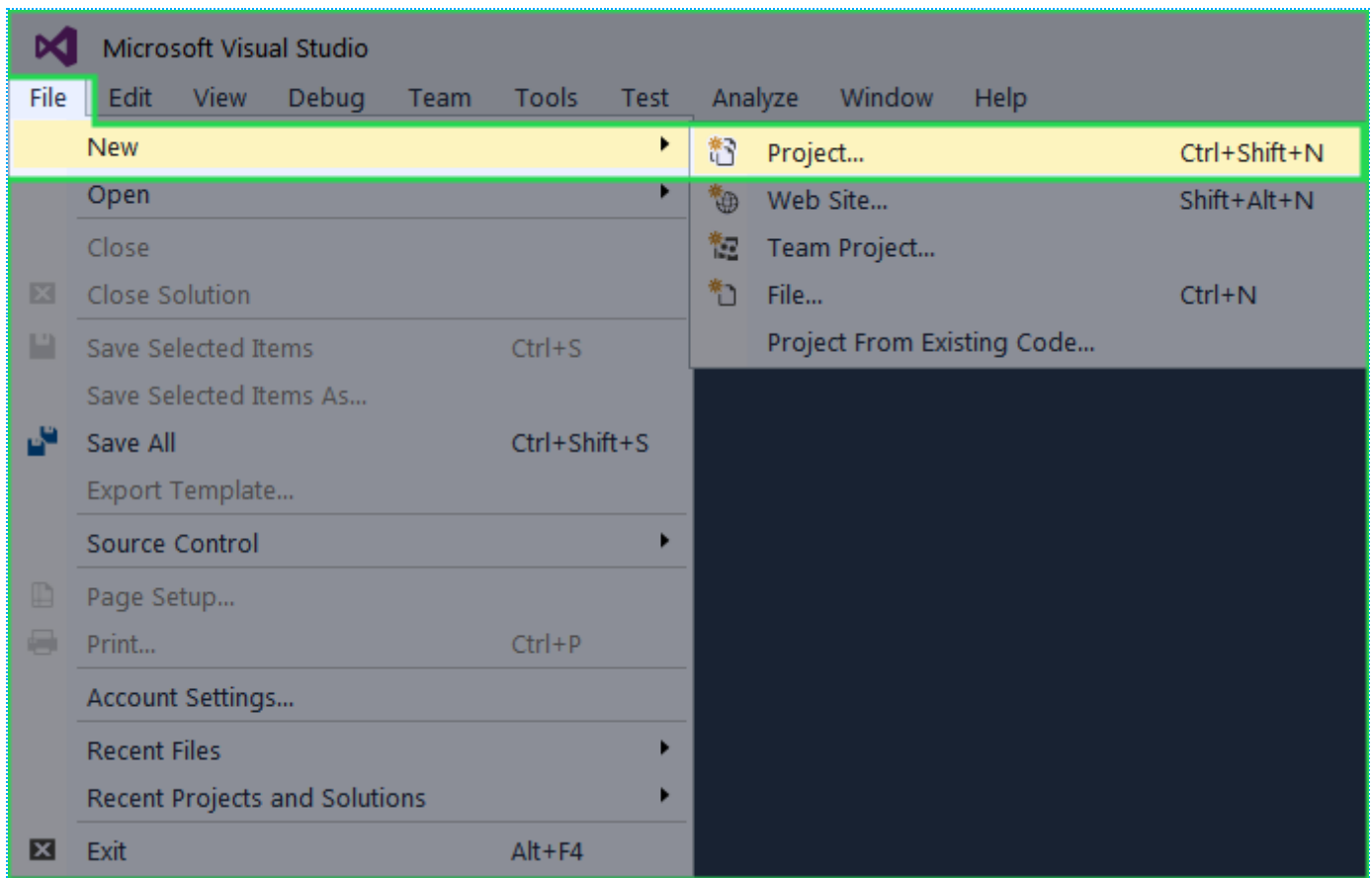
Task:

1. Creating New ASP.NET MVC5 Project
2. Creating Model Classes.
3. Creating Controller
4. Creating Database, Table and Store Procedure
5. Adding Connection String to Web.Config File.
6. Creating a class file for handling all the databases operations.
7. Adding Action Method in Controller.
8. Creating Partial View from Action Method
9. Configure RouteConfig.cs file
10. Run your Project

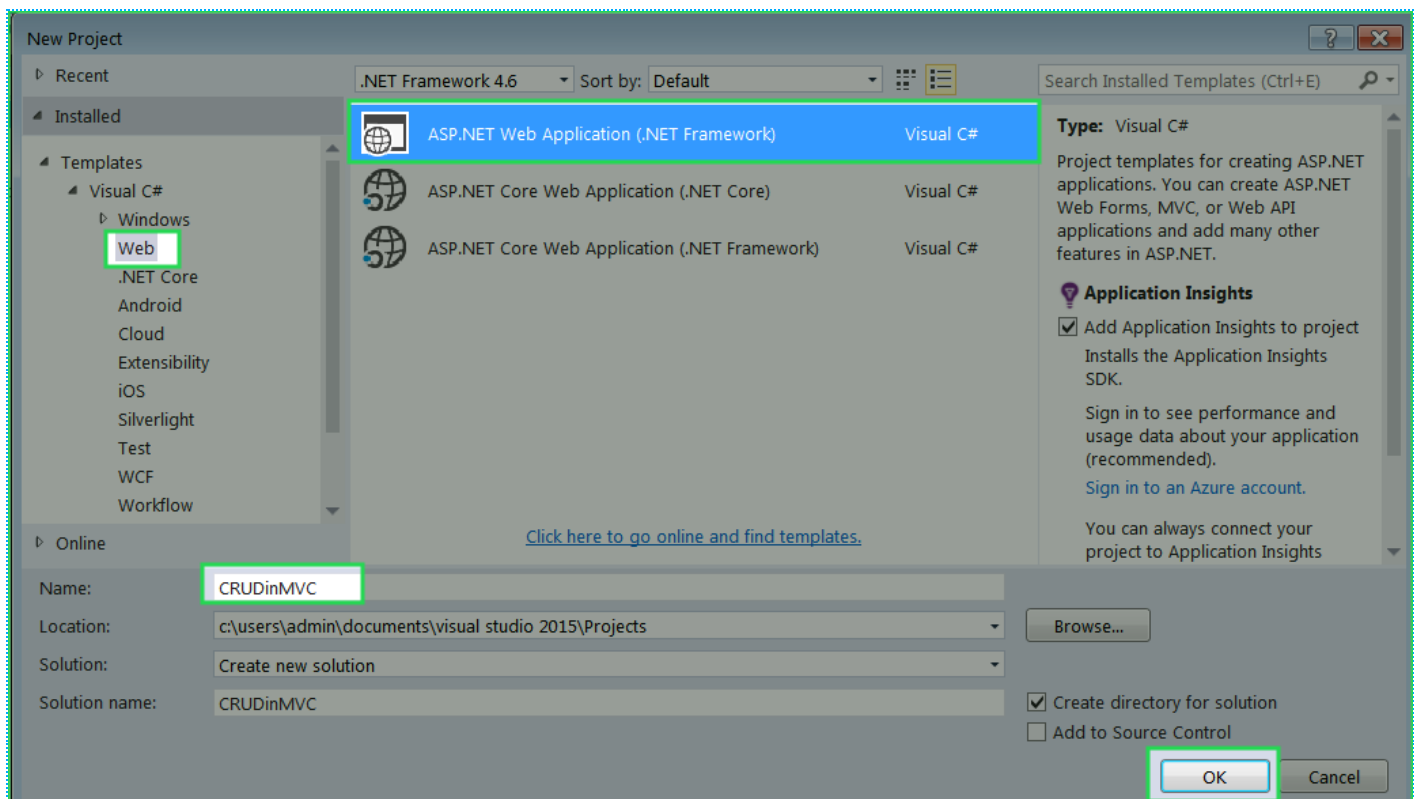


1. Create New ASP.NET MVC 5 Project

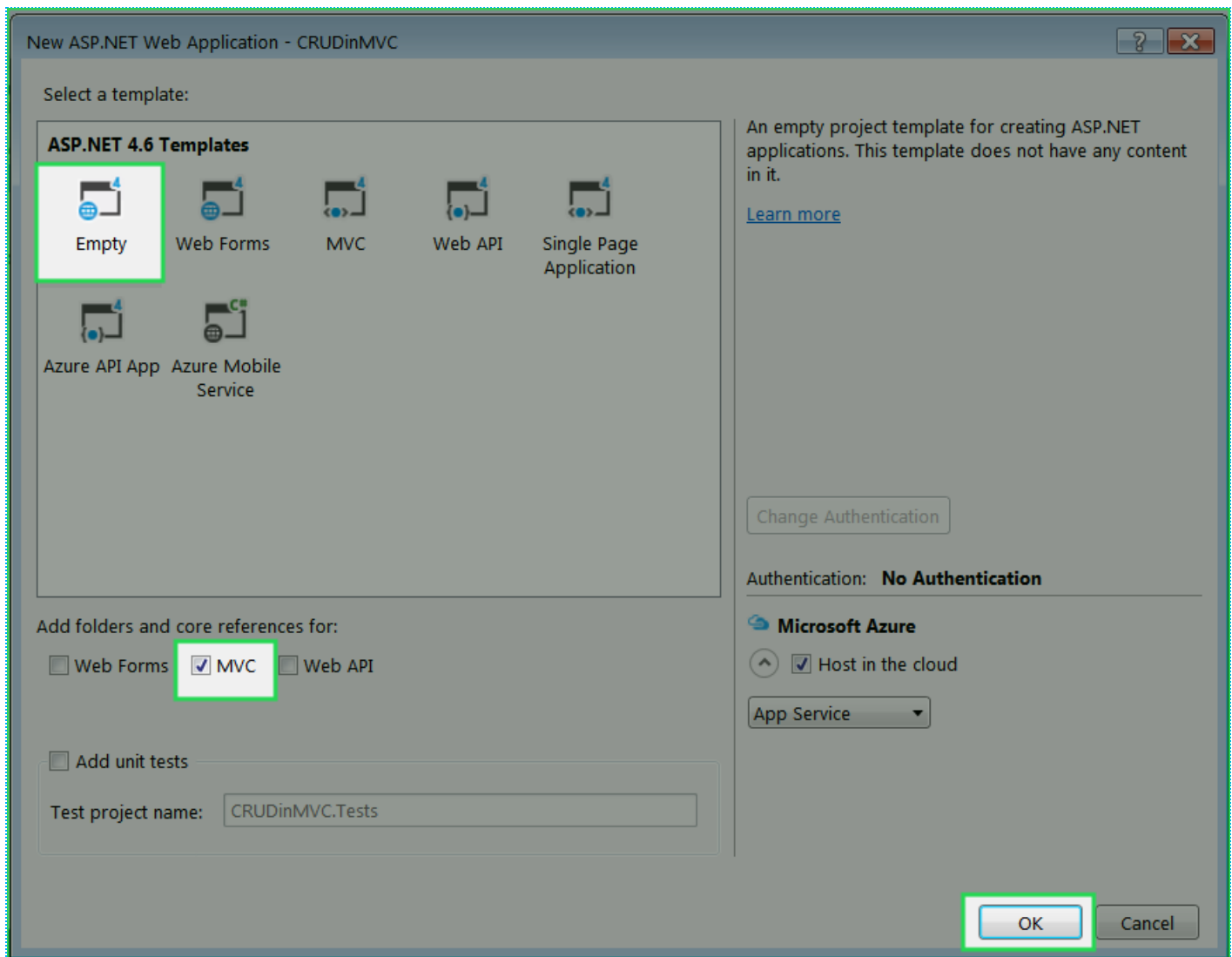
1. Open **Visual Studio 2015**. Click on **File** → **New** → **Project**.



2. Select **Web** in the template section and select **ASP.NET Web Application**. Give name **CRUDinMVC** and click **OK**.



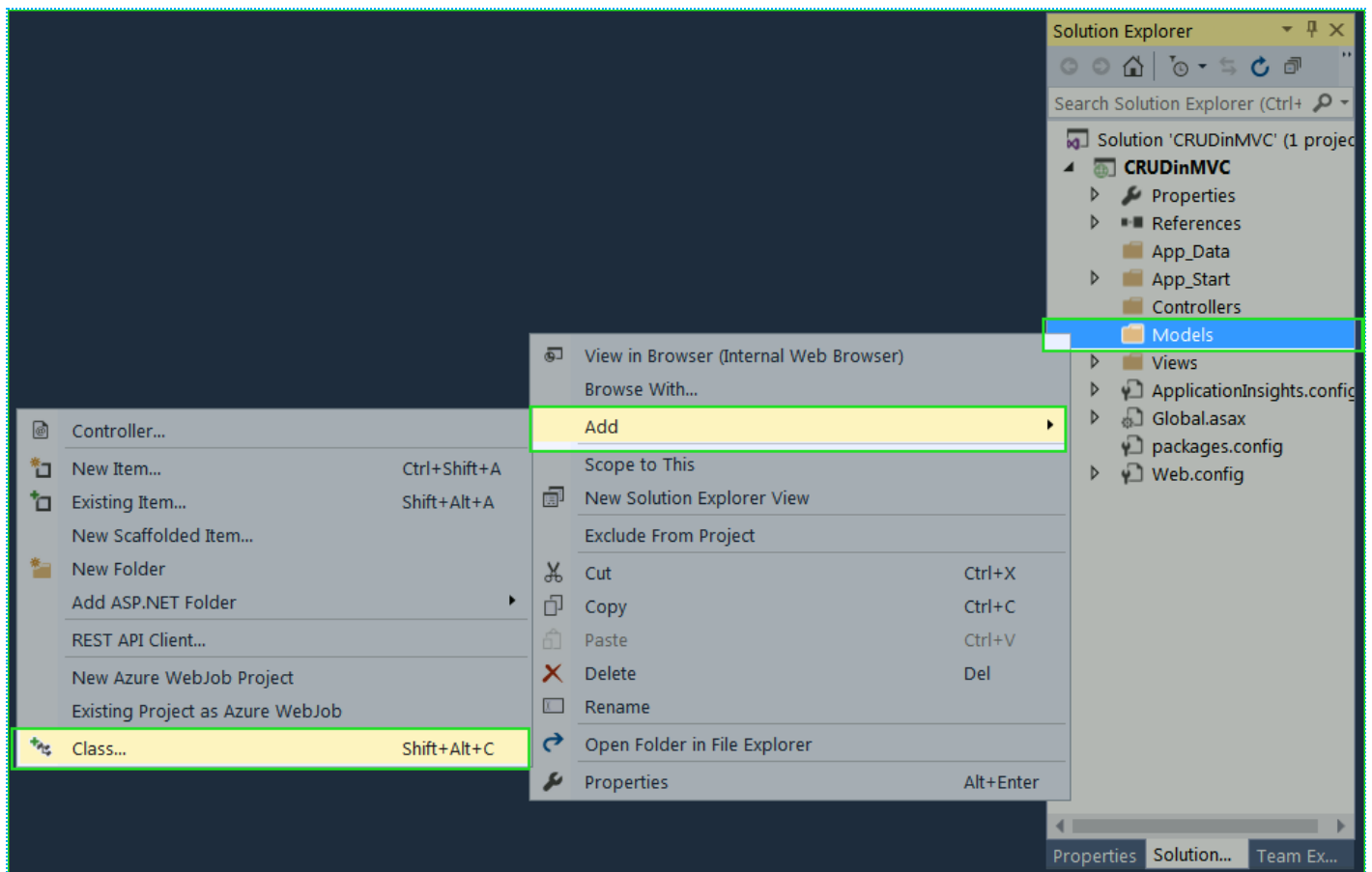
3. A **template** windows will open. Select **Empty** template and check **MVC** checkbox as described in the given picture.



4. Your project will open for develop. If you see *AZURE Hosting window* before opening the project, gently **cancel** it.

2. Create Model Class

1. Right click on **Models** Folder → **Add** → **Class**. Select **class** in middle pane and create new class **StudentModel.cs**.



2. Your **StudentModel.cs** class should be look like this code snippets.

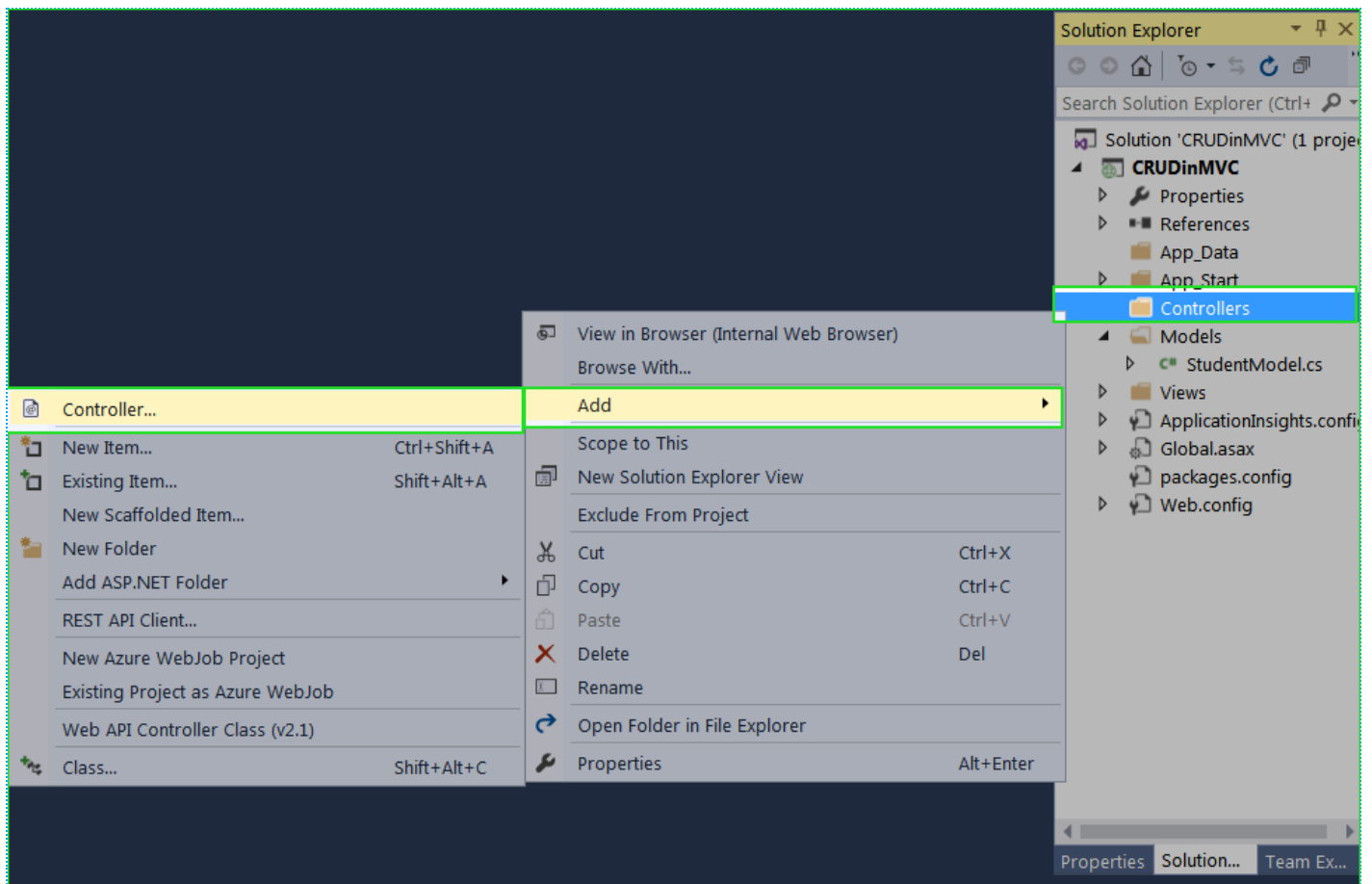
```

1  using System.ComponentModel.DataAnnotations;
2
3  namespace CRUDinMVC.Models
4  {
5      public class StudentModel
6      {
7          [Display(Name = "Id")]
8          public int Id { get; set; }
9
10         [Required(ErrorMessage = "First name is required.")]
11         public string Name { get; set; }
12
13         [Required(ErrorMessage = "City is required.")]
14         public string City { get; set; }
15
16         [Required(ErrorMessage = "Address is required.")]
17         public string Address { get; set; }
18     }
19 }

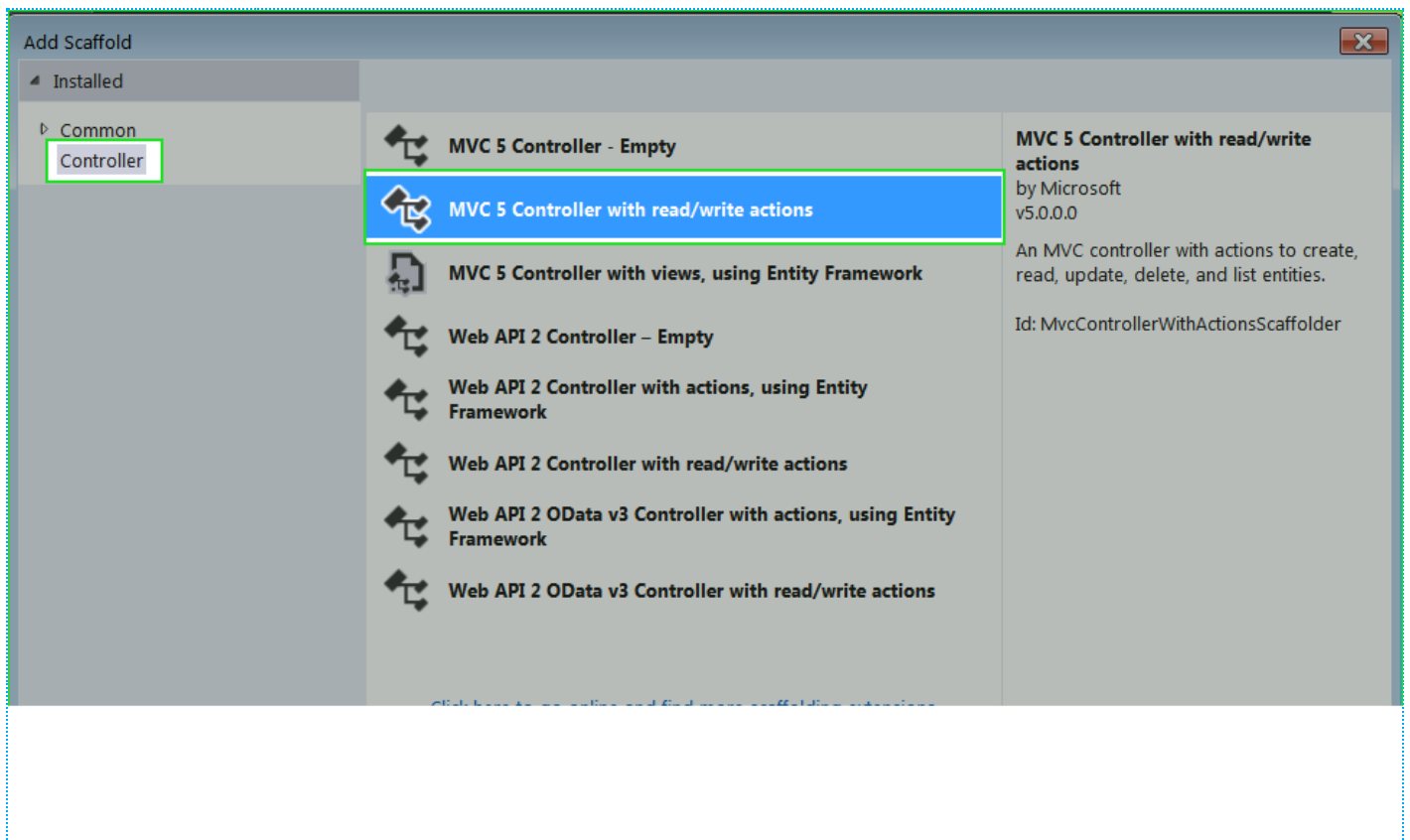
```

3. Create Controller

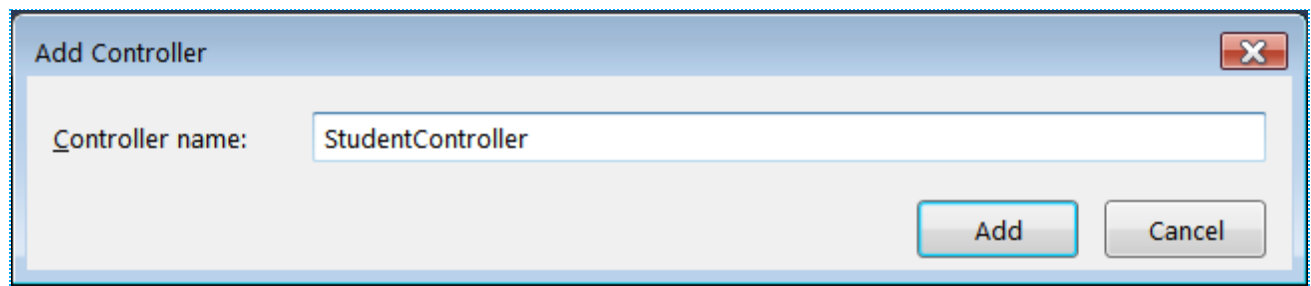
1. Right Click on Controllers Folder ➔ Add ➔ Controller.



2. Scaffold window will open. Here, choose **MVC 5 Controller with read/write actions** and click **Add** button.



3. Give name **StudentController** and click **Add**.

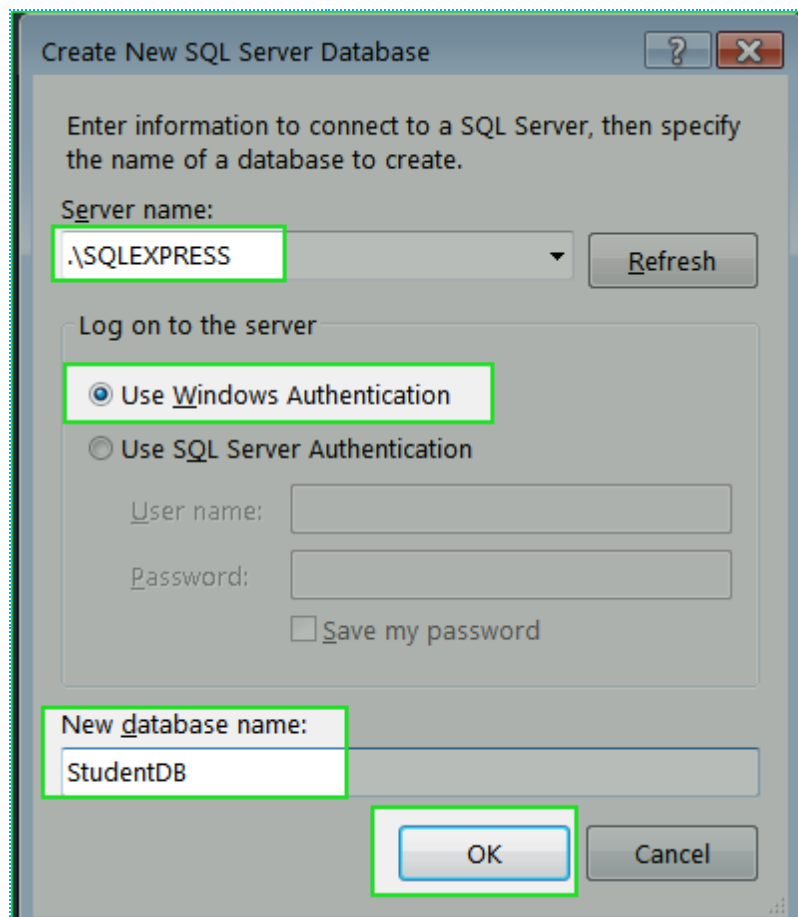


4. Create Database, Table and Store Procedure

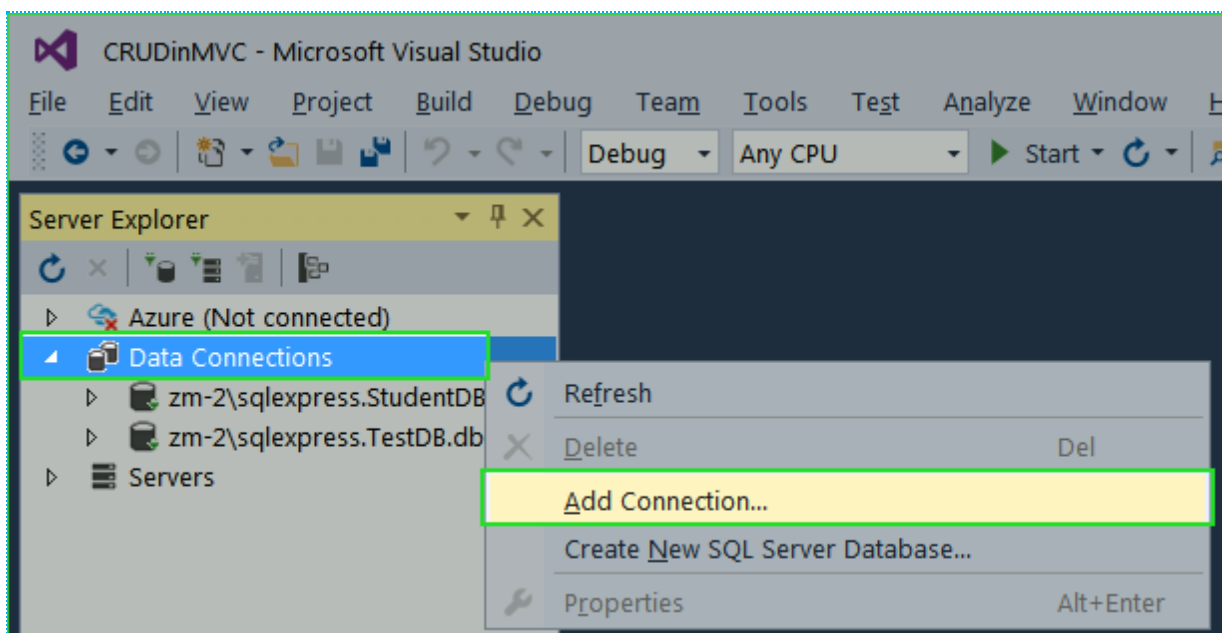
CREATE OR SELECT DATABASE

1. Open **Server Explorer**. Go to **View** → **Server Explorer**.
2. Right Click on **Data Connections** → **Create New SQL Server Database**.

3. Create **StudentDB** database as the picture below.



4. If you have already a database then you can make connection with existing database. **Right Click on Data Connections → Add Connection**



5. Select database as picture below

Add Connection

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:
.\SQLEXPRESS Refresh

Log on to the server
Authentication: Windows Authentication

User name:
Password:
☐ Save my password

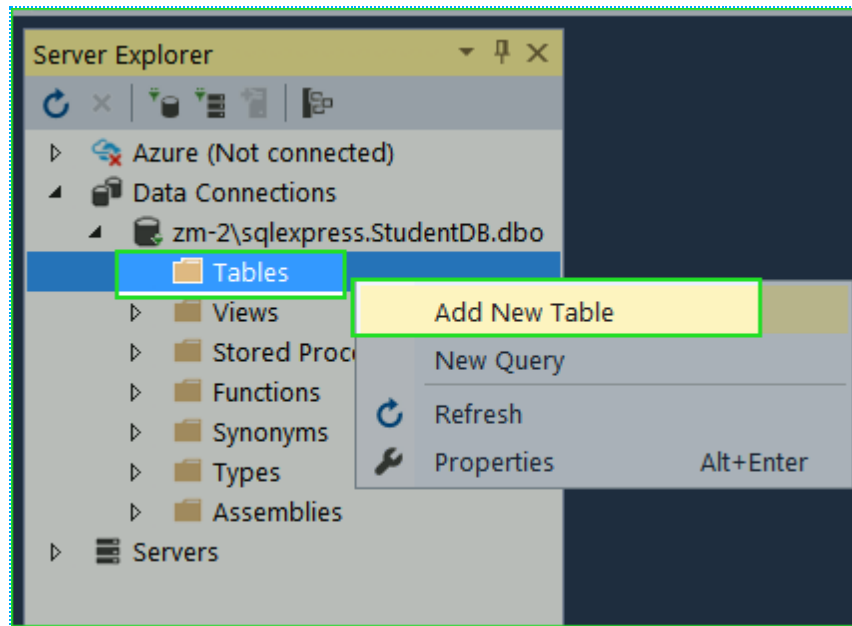
Connect to a database
☒ Select or enter a database name:
StudentDB
☐ Attach a database file:
 Browse...
Logical name:

Advanced...

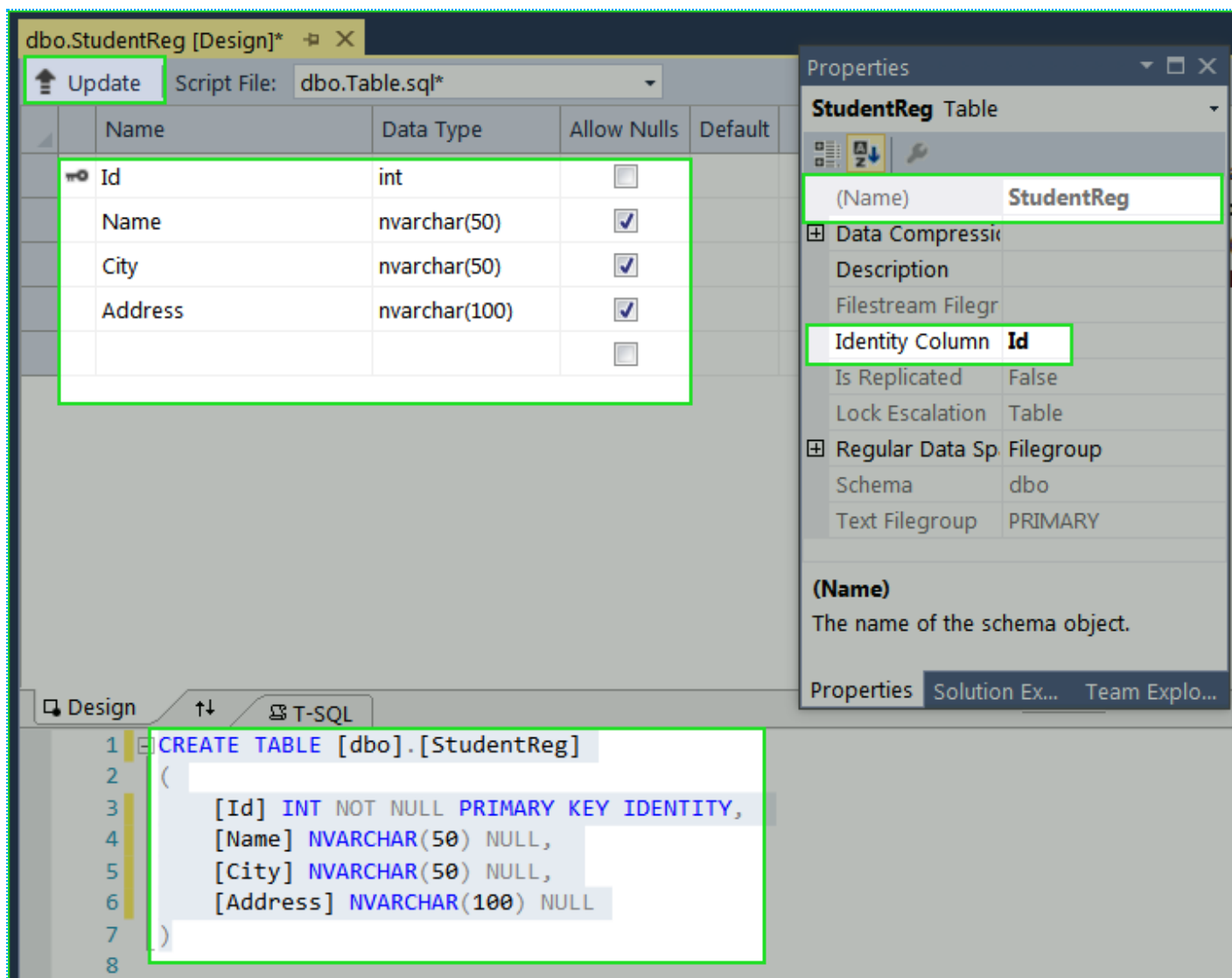
Test Connection OK Cancel

CREATE StudentReg TABLE

1. Now create a Table **StudentReg** in database according to models. Expand **StudentDB** database in **Server Explorer** and **Right Click** on **Table** and then select **Add New Table**.



2. Make Table exactly the same as described in the picture. Go to **Table Properties** and must set **Id** in **Identity column** and **StudentReg** in **Name Column**.



3. Table Scripts

```

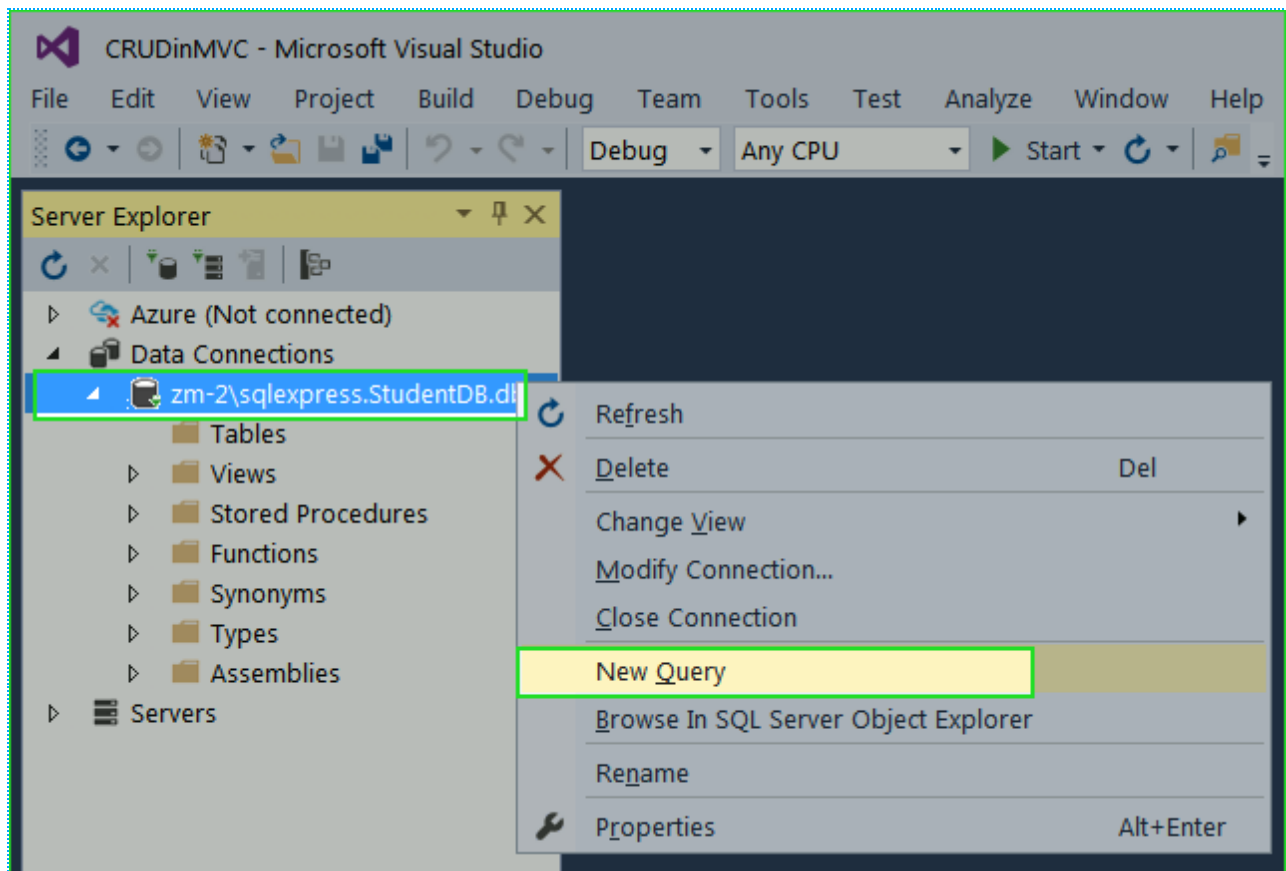
1 CREATE TABLE [dbo].[StudentReg]
2 (
3     [Id] INT NOT NULL PRIMARY KEY IDENTITY,
4     [Name] NVARCHAR(50) NULL,
5     [City] NVARCHAR(50) NULL,
6     [Address] NVARCHAR(100) NULL
7 )

```

4. After finishing table designing click on **Update** button to save table.

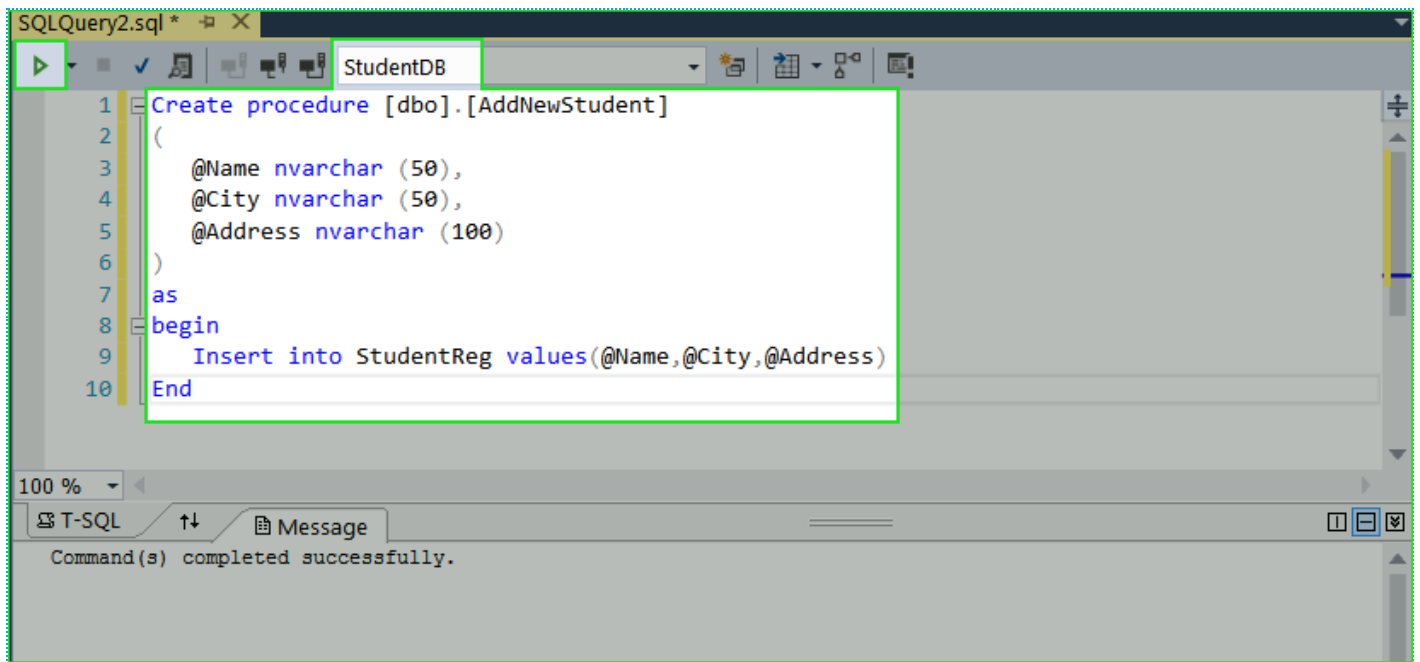
Create Store Procedure for CRUD – Create, Read, Update and Delete Operation.

Open **New Query** Window. **Right** Click on database name in **Server Explorer** and select **New Query**. Now, Paste following code snippets one by one and execute code by pressing **Ctrl + Shift + E** or clicking on **Execute** icon on the top left corner of query window.



1. Insert Records – Store Procedure

```
1 Create procedure [dbo].[AddNewStudent]
2 (
3     @Name nvarchar (50),
4     @City nvarchar (50),
5     @Address nvarchar (100)
6 )
7 as
8 begin
9     Insert into StudentReg values(@Name,@City,@Address)
10 End
```



2. View Added Records – Store Procedure

```
1 Create Procedure [dbo].[GetStudentDetails]
2 as
3 begin
4     select * from StudentReg
5 End
```

3. Update Records – Store Procedure

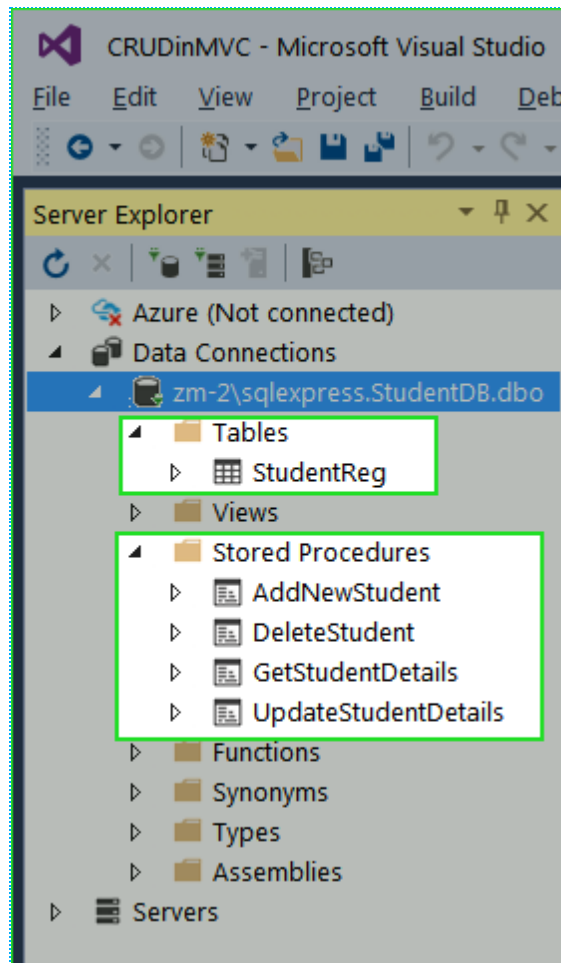
```
1 Create procedure [dbo].[UpdateStudentDetails]
2 (
3     @StdId int,
4     @Name nvarchar (50),
5     @City nvarchar (50),
6     @Address nvarchar (100)
7 )
8 as
9 begin
10     Update StudentReg
11     set Name=@Name,
12     City=@City,
13     Address=@Address
14     where Id=@StdId
15 End
```

4. Delete Records – Store Procedure

```
1 Create procedure [dbo].[DeleteStudent]
2 (
3     @StdId int
4 )
5 as
6 begin
```

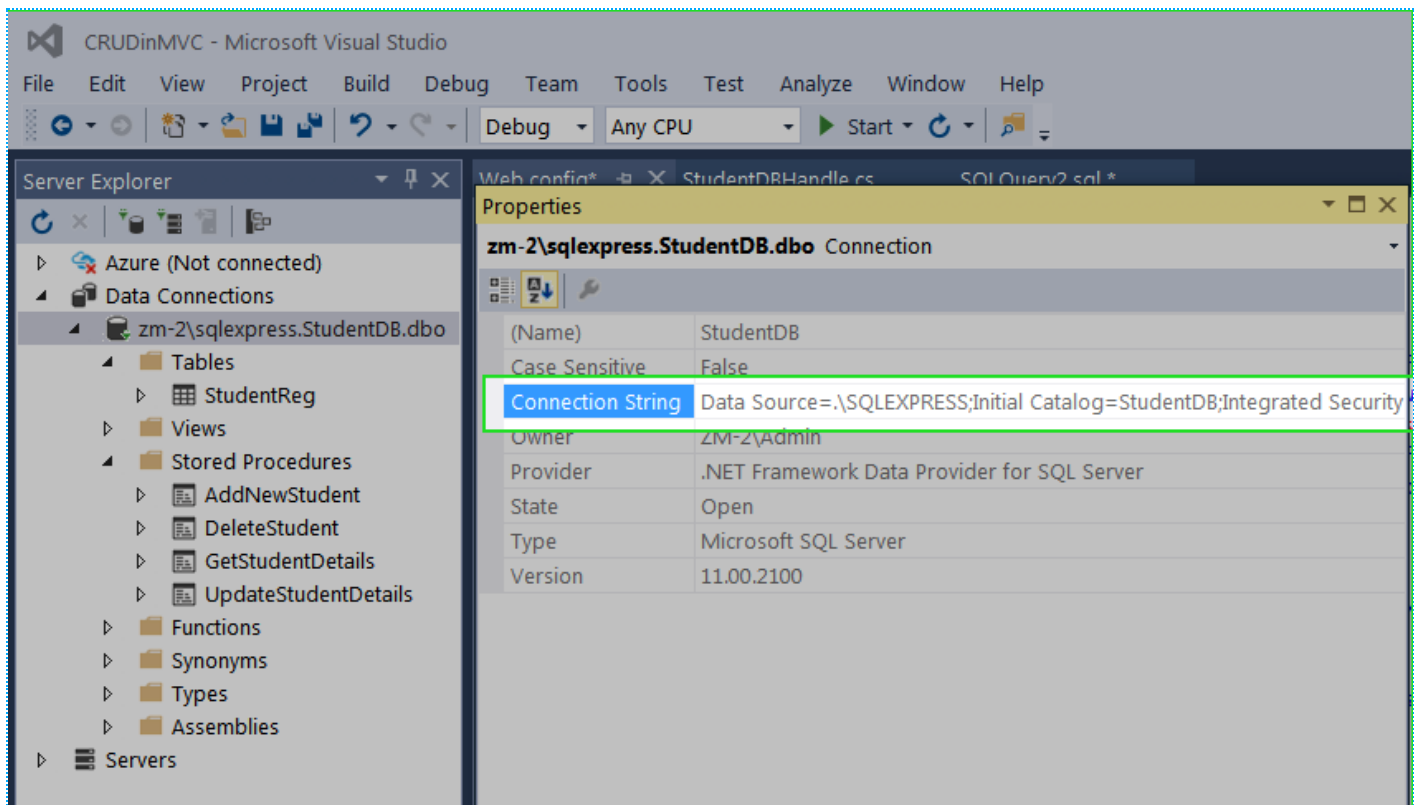
```
7 | Delete from StudentReg where Id=@StdId
8 | End
```

After Creating all **Store Procedure** your **Server Explorer** will look like:



5. Add Connection String in Web.config file.

1. Add Connection String in **Web.config** file. You can find connection string in the database properties. Right click on **Database Name** and Select **Properties**. Copy Connection String and keep it.

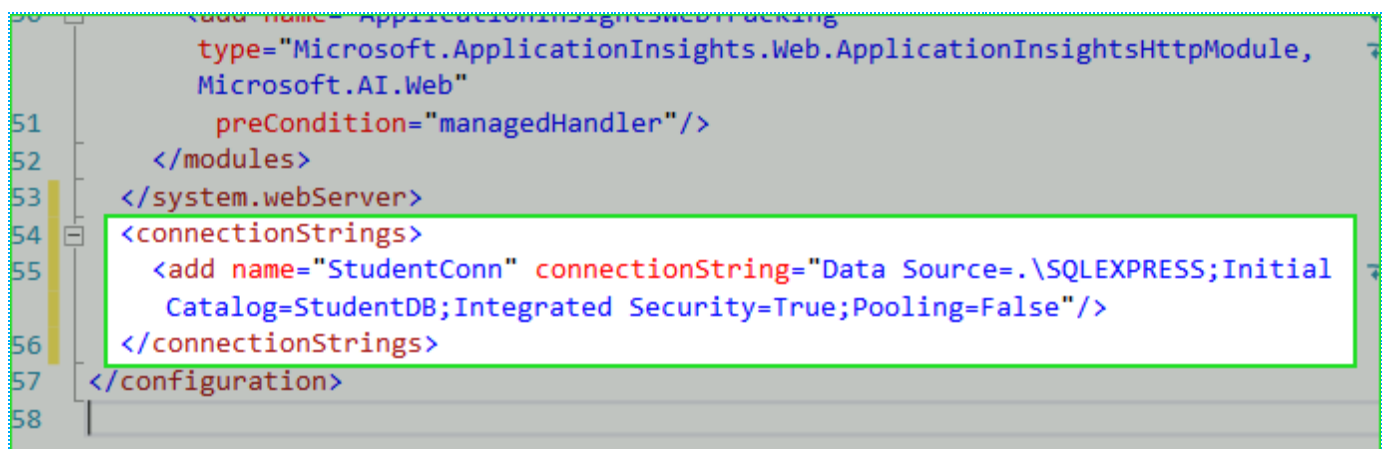


2. Open Root **Web.config** file and paste following code just before `</Configuration>`.

```

1 <connectionStrings>
2   <add name="StudentConn" connectionString="Data Source=.\SQLEXPRESS;Initial Catalog=StudentDB;Integrated Security=True;Pooling=False" />
3 </connectionStrings>

```



6. Create StudentDBHandle.cs class for handling all the database operations.

Paste Following code in **StudentDBHandle.cs** class.

1. Right click on **Models** folder ➔ **Add** ➔ **Class**. Create new class **StudentDBHandle.cs**

2. Now paste following code in this file.

```
1  using System;
2  using System.Collections.Generic;
3  using System.Data;
4  using System.Data.SqlClient;
5  using System.Configuration;
6
7  namespace CRUDinMVC.Models
8  {
9      public class StudentDBHandle
10     {
11         private SqlConnection con;
12         private void connection()
13         {
14             string constring = ConfigurationManager.ConnectionStrings["studentconn"].ToString();
15             con = new SqlConnection(constring);
16         }
17
18         // ***** ADD NEW STUDENT *****
19         public bool AddStudent(StudentModel smodel)
20         {
21             connection();
22             SqlCommand cmd = new SqlCommand("AddNewStudent", con);
23             cmd.CommandType = CommandType.StoredProcedure;
24
25             cmd.Parameters.AddWithValue("@Name", smodel.Name);
26             cmd.Parameters.AddWithValue("@City", smodel.City);
27             cmd.Parameters.AddWithValue("@Address", smodel.Address);
28
29             con.Open();
30             int i = cmd.ExecuteNonQuery();
31             con.Close();
32
33             if (i >= 1)
34                 return true;
35             else
36                 return false;
37         }
38
39         // ***** VIEW STUDENT DETAILS *****
40         public List<StudentModel> GetStudent()
41         {
42             connection();
43             List<StudentModel> studentlist = new List<StudentModel>();
44
45             SqlCommand cmd = new SqlCommand("GetStudentDetails", con);
46             cmd.CommandType = CommandType.StoredProcedure;
47             SqlDataAdapter sd = new SqlDataAdapter(cmd);
48             DataTable dt = new DataTable();
49
50             con.Open();
51             sd.Fill(dt);
52             con.Close();
53
54             foreach(DataRow dr in dt.Rows)
55             {
56                 studentlist.Add(
57                     new StudentModel
58                     {
```



```

59         Id = Convert.ToInt32(dr["Id"]),
60         Name = Convert.ToString(dr["Name"]),
61         City = Convert.ToString(dr["City"]),
62         Address = Convert.ToString(dr["Address"])
63     });
64 }
65     return studentlist;
66 }
67
68 // ***** UPDATE STUDENT DETAILS *****
69 public bool UpdateDetails(StudentModel smodel)
70 {
71     connection();
72     SqlCommand cmd = new SqlCommand("UpdateStudentDetails", con);
73     cmd.CommandType = CommandType.StoredProcedure;
74
75     cmd.Parameters.AddWithValue("@StdId", smodel.Id);
76     cmd.Parameters.AddWithValue("@Name", smodel.Name);
77     cmd.Parameters.AddWithValue("@City", smodel.City);
78     cmd.Parameters.AddWithValue("@Address", smodel.Address);
79
80     con.Open();
81     int i = cmd.ExecuteNonQuery();
82     con.Close();
83
84     if (i >= 1)
85         return true;
86     else
87         return false;
88 }
89
90 // ***** DELETE STUDENT DETAILS *****
91 public bool DeleteStudent(int id)
92 {
93     connection();
94     SqlCommand cmd = new SqlCommand("DeleteStudent", con);
95     cmd.CommandType = CommandType.StoredProcedure;
96
97     cmd.Parameters.AddWithValue("@StdId", id);
98
99     con.Open();
100    int i = cmd.ExecuteNonQuery();
101    con.Close();
102
103    if (i >= 1)
104        return true;
105    else
106        return false;
107 }
108 }
109 }

```

7. Add Action Method in StudentController

Open **StudentController** and add the following action methods. Here, I am going to add four action methods for following purpose.

- a. **Index()** – Showing All Student Details
- b. **Create()** – Adding New Student
- c. **Edit ()** – Edit or Update Student Details
- d. **Delete ()** – Delete Student Details

```
1  using System.Web.Mvc;
2  using CRUDinMVC.Models;
3
4  namespace CRUDinMVC.Controllers
5  {
6      public class StudentController : Controller
7      {
8
9          // 1. *****RETRIEVE ALL STUDENT DETAILS *****
10         // GET: Student
11         public ActionResult Index()
12         {
13             StudentDBHandle dbhandle = new StudentDBHandle();
14             ModelState.Clear();
15             return View(dbhandle.GetStudent());
16         }
17
18         // 2. *****ADD NEW STUDENT *****
19         // GET: Student/Create
20         public ActionResult Create()
21         {
22             return View();
23         }
24
25         // POST: Student/Create
26         [HttpPost]
27         public ActionResult Create(StudentModel smodel)
28         {
29             try
30             {
31                 if (ModelState.IsValid)
32                 {
33                     StudentDBHandle sdb = new StudentDBHandle();
34                     if (sdb.AddStudent(smodel))
35                     {
36                         ViewBag.Message = "Student Details Added Successfully";
37                         ModelState.Clear();
38                     }
39                 }
40                 return View();
41             }
42             catch
43             {
44                 return View();
45             }
46         }
47
48         // 3. ***** EDIT STUDENT DETAILS *****
49         // GET: Student/Edit/5
50         public ActionResult Edit(int id)
51         {
52             StudentDBHandle sdb = new StudentDBHandle();
53             return View(sdb.GetStudent().Find(smodel => smodel.Id == id));
54         }
55
56         // POST: Student/Edit/5
57         [HttpPost]
58         public ActionResult Edit(int id, StudentModel smodel)
```

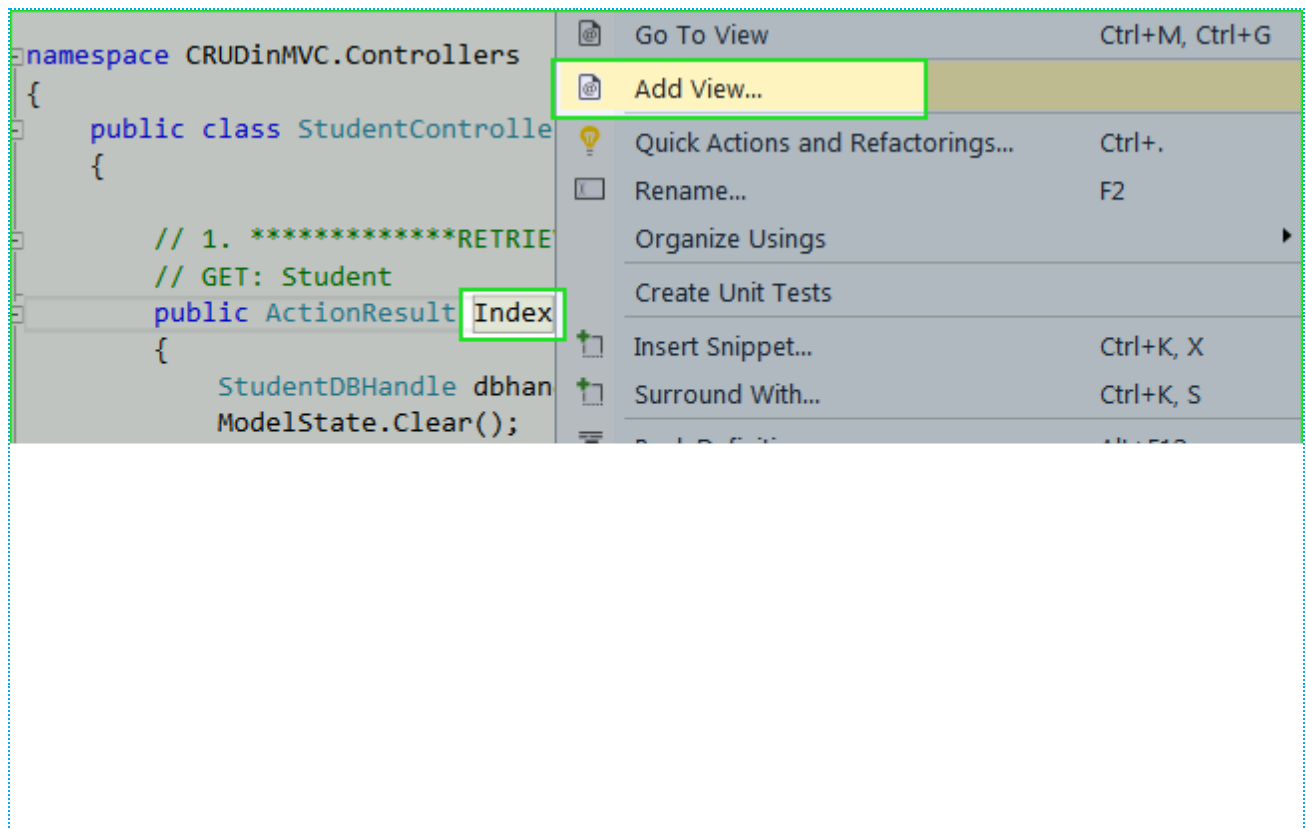
```

59     {
60         try
61         {
62             StudentDBHandle sdb = new StudentDBHandle();
63             sdb.UpdateDetails(smodel);
64             return RedirectToAction("Index");
65         }
66         catch
67         {
68             return View();
69         }
70     }
71
72     // 4. ***** DELETE STUDENT DETAILS *****
73     // GET: Student/Delete/5
74     public ActionResult Delete(int id)
75     {
76         try
77         {
78             StudentDBHandle sdb = new StudentDBHandle();
79             if (sdb.DeleteStudent(id))
80             {
81                 ViewBag.AlertMsg = "Student Deleted Successfully";
82             }
83             return RedirectToAction("Index");
84         }
85         catch
86         {
87             return View();
88         }
89     }
90 }
91 }

```

8. Create Partial View from Action Method

1. Right Click on Index() Action Method and Select Add View.



2. Fill following details in Add View Dialog box.

- a. **View Name:** Index
- b. **Template:** List
- c. **Model Class:** StudentModel (CRUDinMVC.Models)
- d. **Check** both CheckBoxes
- e. Click **Add** button to **Add View**.

Add View

View name: Index

Template: List

Model class: StudentModel (CRUDinMVC.Models)

Options:

☒ Create as a partial view

☒ Reference script libraries

☒ Use a layout page:

...

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

Add Cancel

3. View: Index()

Make sure to change the following highlighted line as example.

```

1  @model IEnumerable<CRUDinMVC.Models.StudentModel>
2
3  <p>
4      @Html.ActionLink("Create New", "Create")
5  </p>
6  <table class="table">
7      <tr>
8          <th>
9              @Html.DisplayNameFor(model => model.Name)
10             </th>
11             <th>
12                 @Html.DisplayNameFor(model => model.City)
13             </th>
14             <th>
15                 @Html.DisplayNameFor(model => model.Address)
16             </th>
17             <th></th>
18         </tr>
19
20         @foreach (var item in Model) {
21             <tr>
22                 <td>
23                     @Html.DisplayFor(modelItem => item.Name)
24                 </td>
25                 <td>
26                     @Html.DisplayFor(modelItem => item.City)
27                 </td>
28                 <td>
29                     @Html.DisplayFor(modelItem => item.Address)
30                 </td>
31                 <td>
32                     @Html.ActionLink("Edit", "Edit", new { id=item.Id }) |
33                     @Html.ActionLink("Delete", "Delete", new { id=item.Id }, new { onclick = "return c
34                 </td>

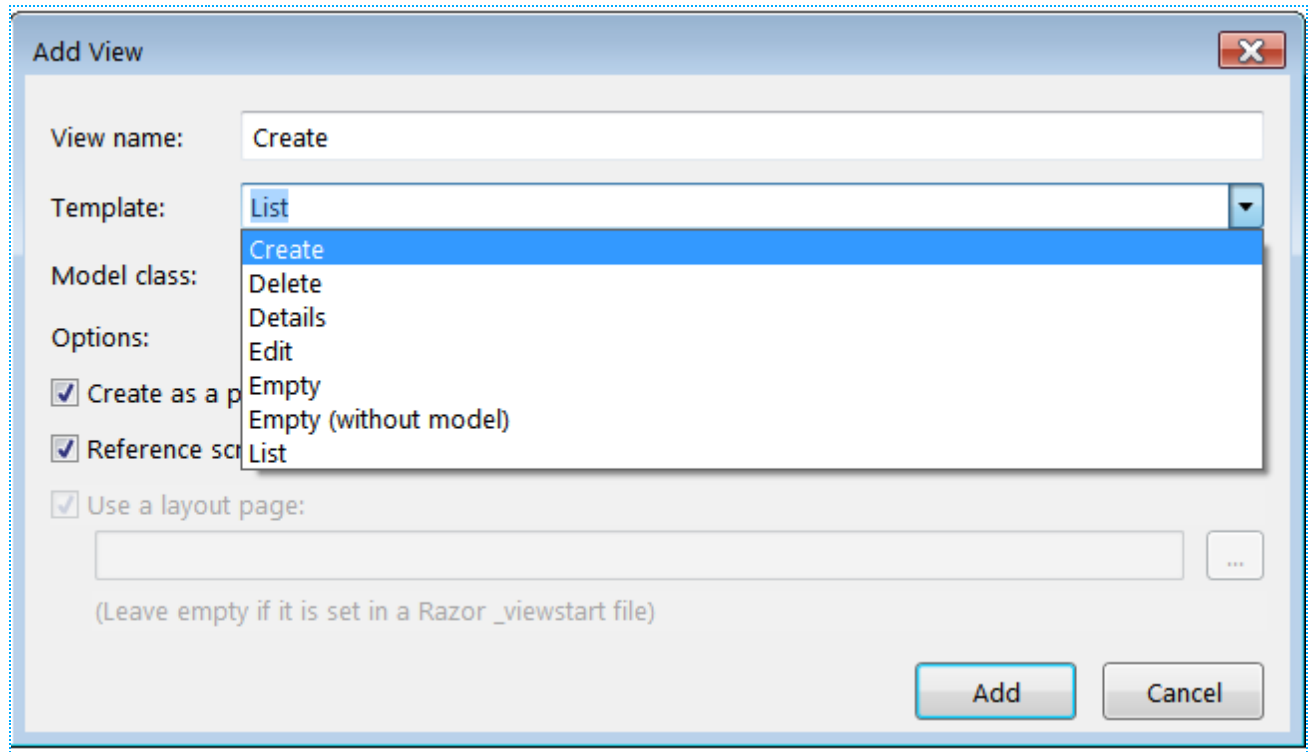
```

```

35     </tr>
36 }
37
38 </table>

```

4. Follow same procedure for **Create()** and **Edit()** Method. Choose **Create** Template for **Create()** Method and **Edit** Template for **Edit()** Method.



View: Create()

```

1  @model CRUDinMVC.Models.StudentModel
2
3
4  @using (Html.BeginForm())
5  {
6      @Html.AntiForgeryToken()
7
8      <div class="form-horizontal">
9          <h4>StudentModel</h4>
10         <hr />
11         @Html.ValidationSummary(true, "", new { @class = "text-danger" })
12         <div class="form-group">
13             @Html.LabelFor(model => model.Name, htmlAttributes: new { @class = "control-label" })
14             <div class="col-md-10">
15                 @Html.EditorFor(model => model.Name, new { htmlAttributes = new { @class = "form-control" } })
16                 @Html.ValidationMessageFor(model => model.Name, "", new { @class = "text-danger" })
17             </div>
18         </div>
19
20         <div class="form-group">
21             @Html.LabelFor(model => model.City, htmlAttributes: new { @class = "control-label" })
22             <div class="col-md-10">
23                 @Html.EditorFor(model => model.City, new { htmlAttributes = new { @class = "form-control" } })
24                 @Html.ValidationMessageFor(model => model.City, "", new { @class = "text-danger" })
25             </div>
26         </div>

```

```

27
28     <div class="form-group">
29         @Html.LabelFor(model => model.Address, htmlAttributes: new { @class = "control-label" })
30         <div class="col-md-10">
31             @Html.EditorFor(model => model.Address, new { htmlAttributes = new { @class = "form-control" } })
32             @Html.ValidationMessageFor(model => model.Address, "", new { @class = "text-danger" })
33         </div>
34     </div>
35
36     <div class="form-group">
37         <div class="col-md-offset-2 col-md-10">
38             <input type="submit" value="Create" class="btn btn-default" />
39         </div>
40     </div>
41     <h3>@ViewBag.Message</h3>
42 </div>
43 }
44
45 <div>
46     @Html.ActionLink("Back to List", "Index")
47 </div>
48
49 <script src="~/Scripts/jquery-1.10.2.min.js"></script>
50 <script src="~/Scripts/jquery.validate.min.js"></script>
51 <script src="~/Scripts/jquery.validate.unobtrusive.min.js"></script>

```

View: Edit()

```

1  @model CRUDinMVC.Models.StudentModel
2
3
4  @using (Html.BeginForm())
5  {
6      @Html.AntiForgeryToken()
7
8      <div class="form-horizontal">
9          <h4>StudentModel</h4>
10         <hr />
11         @Html.ValidationSummary(true, "", new { @class = "text-danger" })
12         @Html.HiddenFor(model => model.Id)
13
14         <div class="form-group">
15             @Html.LabelFor(model => model.Name, htmlAttributes: new { @class = "control-label" })
16             <div class="col-md-10">
17                 @Html.EditorFor(model => model.Name, new { htmlAttributes = new { @class = "form-control" } })
18                 @Html.ValidationMessageFor(model => model.Name, "", new { @class = "text-danger" })
19             </div>
20         </div>
21
22         <div class="form-group">
23             @Html.LabelFor(model => model.City, htmlAttributes: new { @class = "control-label" })
24             <div class="col-md-10">
25                 @Html.EditorFor(model => model.City, new { htmlAttributes = new { @class = "form-control" } })
26                 @Html.ValidationMessageFor(model => model.City, "", new { @class = "text-danger" })
27             </div>
28         </div>
29
30         <div class="form-group">
31             @Html.LabelFor(model => model.Address, htmlAttributes: new { @class = "control-label" })
32             <div class="col-md-10">
33                 @Html.EditorFor(model => model.Address, new { htmlAttributes = new { @class = "form-control" } })
34                 @Html.ValidationMessageFor(model => model.Address, "", new { @class = "text-danger" })
35             </div>
36         </div>
37

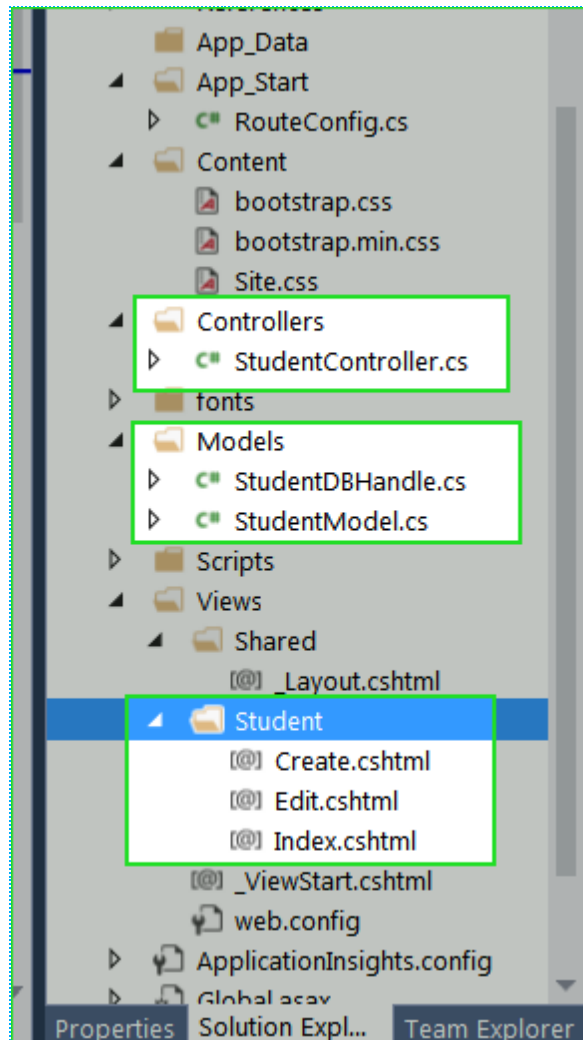
```

```

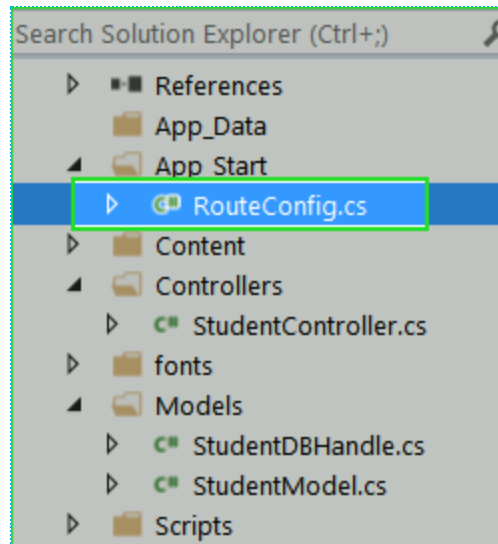
38         <div class="form-group">
39             <div class="col-md-offset-2 col-md-10">
40                 <input type="submit" value="Save" class="btn btn-default" />
41             </div>
42         </div>
43     </div>
44 }
45
46 <div>
47     @Html.ActionLink("Back to List", "Index")
48 </div>
49
50 <script src="~/Scripts/jquery-1.10.2.min.js"></script>
51 <script src="~/Scripts/jquery.validate.min.js"></script>
52 <script src="~/Scripts/jquery.validate.unobtrusive.min.js"></script>

```

5. Your Solution Explorer should look like this.



1. Open **RouteConfig.cs** from Solution Explorer.

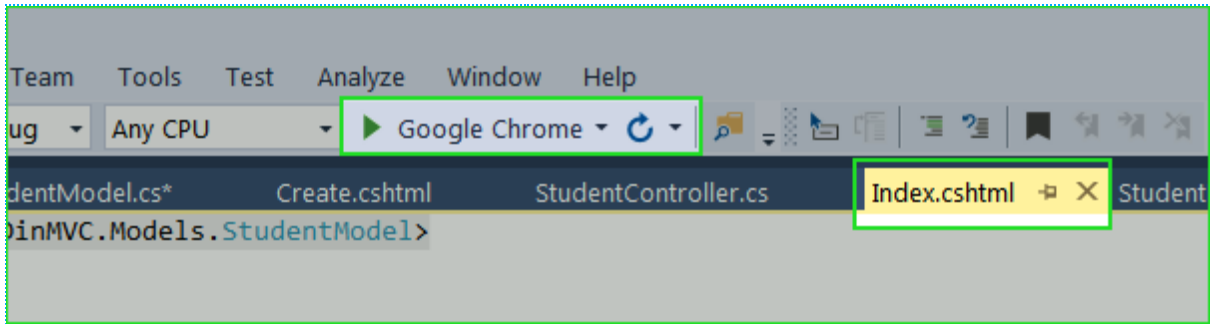


2. Change the highlighted code in your **RouteConfig.cs** file.

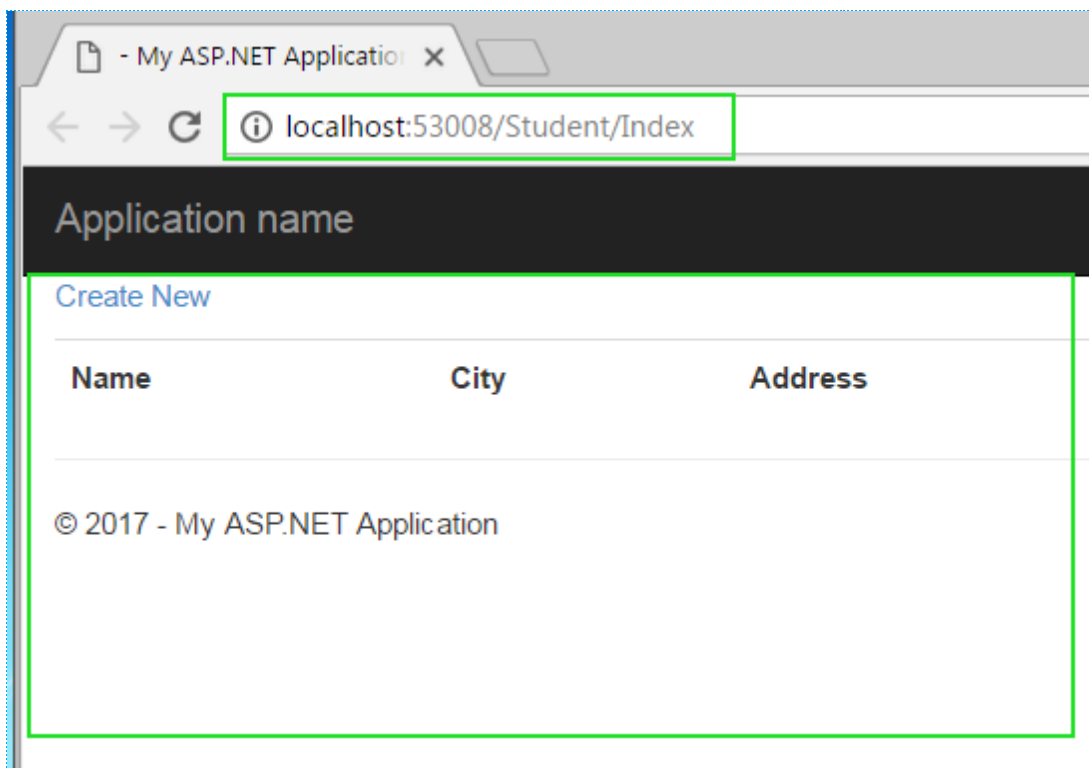
```
1 using System.Web.Mvc;
2 using System.Web.Routing;
3
4 namespace CRUDinMVC
5 {
6     public class RouteConfig
7     {
8         public static void RegisterRoutes(RouteCollection routes)
9         {
10             routes.IgnoreRoute("{resource}.axd/{*pathInfo}");
11
12             routes.MapRoute(
13                 name: "Default",
14                 url: "{controller}/{action}/{id}",
15                 defaults: new { controller = "Student", action = "Index", id = UrlParameter.Optional }
16             );
17         }
18     }
19 }
```

10. Run Your Program

1. Open **Index.cshtml** View Page then press F5 to run your program. Selecting **Index.cshtml** will start your project with this page.



2. Index Page



3. Create Page.

My ASP.NET Application x

localhost:53008/Student/Create

Application name

StudentModel

Name

Steven Clark

City

California

Address

Street no. 4, Hill Tower

Create

Student Details Added Successfully

[Back to List](#)

4. Edit Page

Application name

StudentModel

Name

City

Address

[Back to List](#)

5. Delete Page

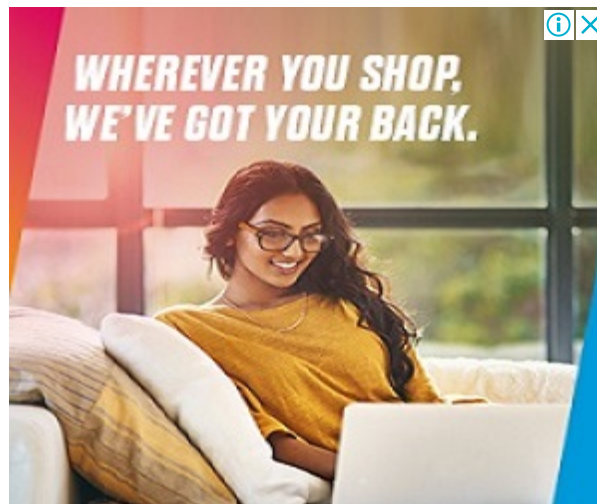
localhost:53008 says:

Are sure wants to delete?

[Edit](#) | [Delete](#)

SUMMARY:

In this tutorial, I have tried to explain full and complete **create, update and delete program in MVC 5 without entity framework**. I have inserted great number of screenshot so that you can easily finish this project on your system. Believe me, once after completing this chapter your understanding of MVC, will be increased at great level.



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11 THOUGHTS ON “INSERT UPDATE DELETE IN ASP.NET MVC 5 WITHOUT ENTITY FRAMEWORK”



Sundar

MAY 8, 2017 AT 6:49 AM

Delete operation is not performed. Please help me



Nithin

MAY 10, 2017 AT 6:44 PM

Thanks a lot...

This is the best article and I understood a lot about mvc, stored procedure seeing this. Please create more articles like this which are helpful for beginners like me.



Atiol Raphael

MAY 10, 2017 AT 10:36 PM

Awesome tutorial, I followed it up to the end, it helped me understand what goes on behind the scenes.

Am also currently developing a webapp with oracle database, Can I follow the same procedure for when storing data in an oracle DB or it differs?

Thanks in advance.



Naveen Kumar Rohilla

MAY 13, 2017 AT 12:44 PM

Thanks for this post. After long time i saw this type of article.



Hashan Meegahawatte

JUNE 15, 2017 AT 6:19 AM

good one for beginners



Hans

JUNE 16, 2017 AT 12:58 PM

Is there a way to have two different table in one view?



SARAVANAN A

JULY 4, 2017 AT 10:45 AM

That is very nice to understand step by step.thank you.....



SARAVANAN A

JULY 4, 2017 AT 11:44 AM

Thank you very much for posting this MVC simple project. Before i'am not knowing what is mvc and idea but now i'am start with my project.



Chetan

JULY 6, 2017 AT 12:01 PM

Nice Tutorial, I followed all the Steps. Its working 100% fine. but the view Layout (Bootstrap) is not reflecting in my Application. need Help.



Esa

AUGUST 8, 2017 AT 8:49 AM

It is easy to understand MVC. We are expect more examples like this. thank you



natuca

AUGUST 28, 2017 AT 8:17 AM

Very Nice Article. Please Keep Up z Good Work