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Consume Web API Get method in ASP.NET MVC

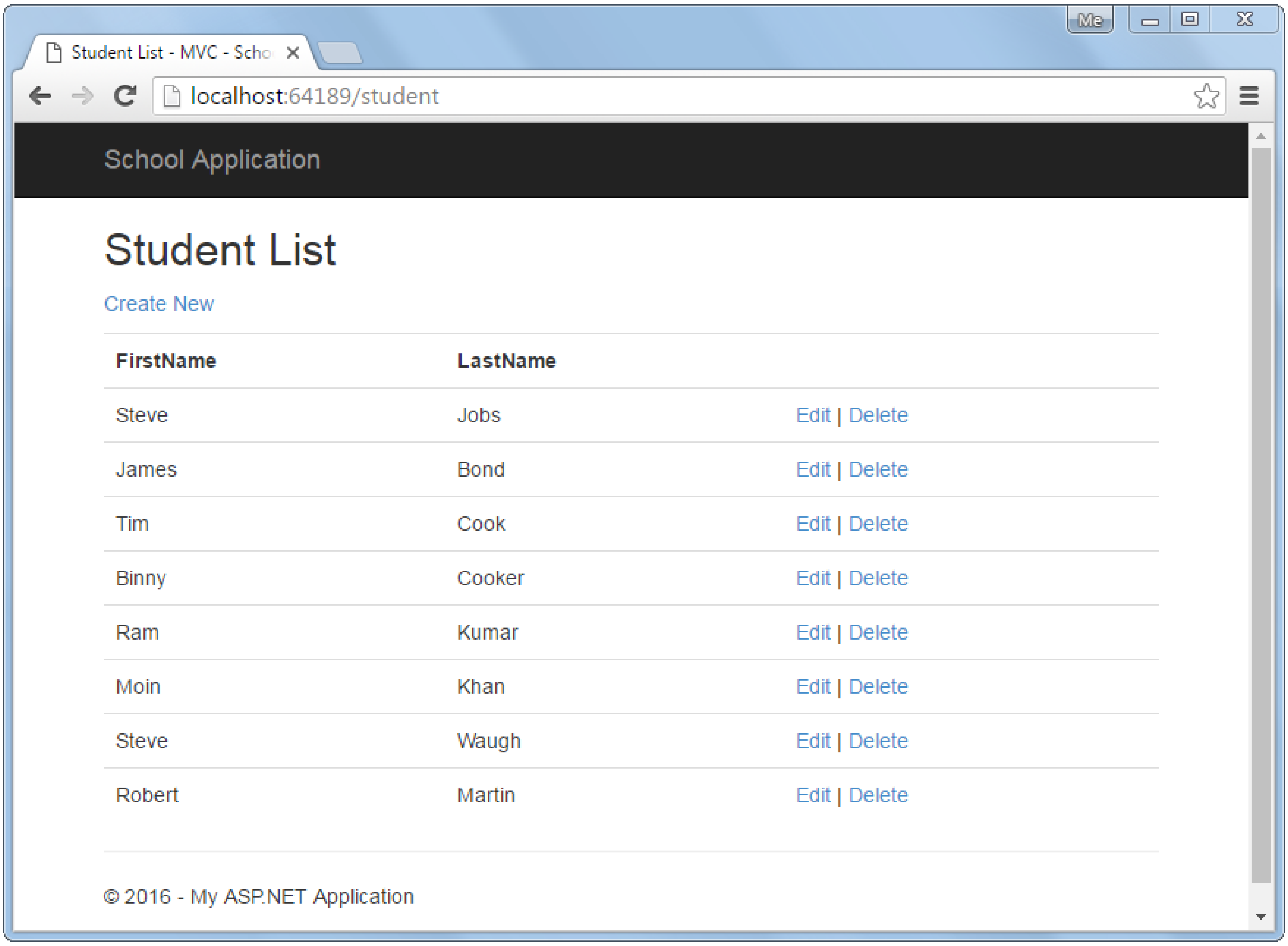
We created Web API and implemented various Get methods to handle different HTTP GET requests in the Implement Get Method section. Here we will consume one of those Get methods named `GetAllStudents()` shown below.

Example: Sample Web API

```
public class StudentController : ApiController
{
    public StudentController()
    {
    }

    public IHttpActionResult GetAllStudents(bool includeAddress = false)
    {
        IList<StudentViewModel> students = null;

        using (var ctx = new SchoolDBEntities())
        {
               students = ctx.Students.Include("StudentAddress").Select(s => new
StudentViewModel()
            {
                Id = s.StudentID,
                FirstName = s.FirstName,
                LastName = s.LastName,
                 Address = s.StudentAddress == null || includeAddress == false ?
null : new AddressViewModel()
                {
                    StudentId = s.StudentAddress.StudentID,
                    Address1 = s.StudentAddress.Address1,
                    Address2 = s.StudentAddress.Address2,
                    City = s.StudentAddress.City,
                    State = s.StudentAddress.State
                }
            }).ToList<StudentViewModel>();
        }
```

```
            if (students.Count == 0)
            {
                return NotFound();
            }

            return Ok(students);
        }
    }
```

The above `GetAllStudents()` action method will handle HTTP GET request `http://localhost:64189/api/student` and will return a list of students. We will send this HTTP request in the ASP.NET MVC controller to get all the student records and display them in the MVC View. The view will look like below.



Student List

Create New

FirstName	LastName	
Steve	Jobs	Edit | Delete
James	Bond	Edit | Delete
Tim	Cook	Edit | Delete
Binny	Cooker	Edit | Delete
Ram	Kumar	Edit | Delete
Moin	Khan	Edit | Delete
Steve	Waugh	Edit | Delete
Robert	Martin	Edit | Delete

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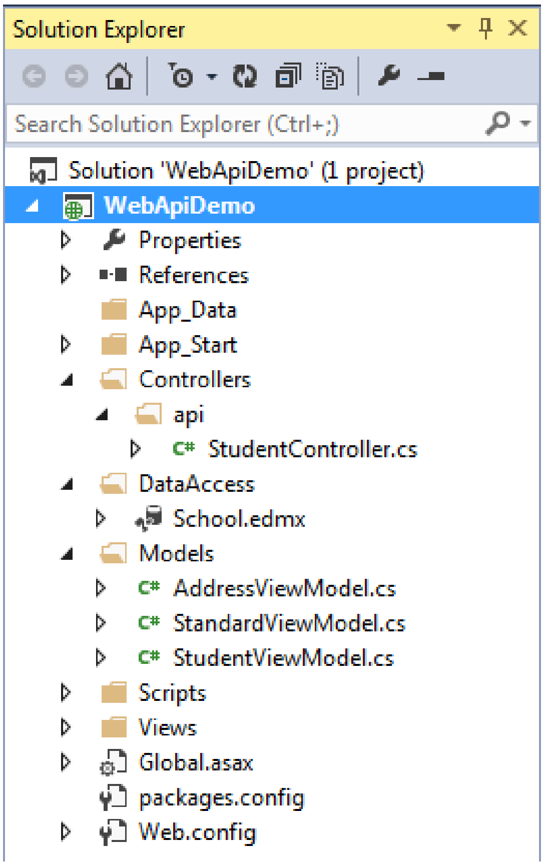
Student List View

The following is a Web API + MVC project structure created in the previous sections. We will add necessary classes in this project.



Solution Explorer

Search Solution Explorer (Ctrl+;)

```
Solution 'WebApiDemo' (1 project)
  WebApiDemo
    Properties
    References
    App_Data
    App_Start
    Controllers
      api
        StudentController.cs
    DataAccess
      School.edmx
    Models
      AddressViewModel.cs
      StandardViewModel.cs
      StudentViewModel.cs
    Scripts
    Views
    Global.asax
    packages.config
    Web.config
```

Web API Project

We have already created the following StudentViewModel class under Models folder.

Example: Model Class

```
public class StudentViewModel
{
    public int Id { get; set; }
    public string FirstName { get; set; }
    public string LastName { get; set; }

    public AddressViewModel Address { get; set; }

    public StandardViewModel Standard { get; set; }
}
```

Let's consume above Web API into ASP.NET MVC application step by step.

Step 1:

First of all, create MVC controller class called `StudentController` in the Controllers folder as shown below. Right click on the Controllers folder > **Add..** > select **Controller..**

Example: MVC Controller

```
public class StudentController : Controller
{
    // GET: Student
    public ActionResult Index()
    {
        return View();
    }
}
```

Step 2:

We need to access Web API in the Index() action method using HttpClient as shown below. Learn about HttpClient in detail here.

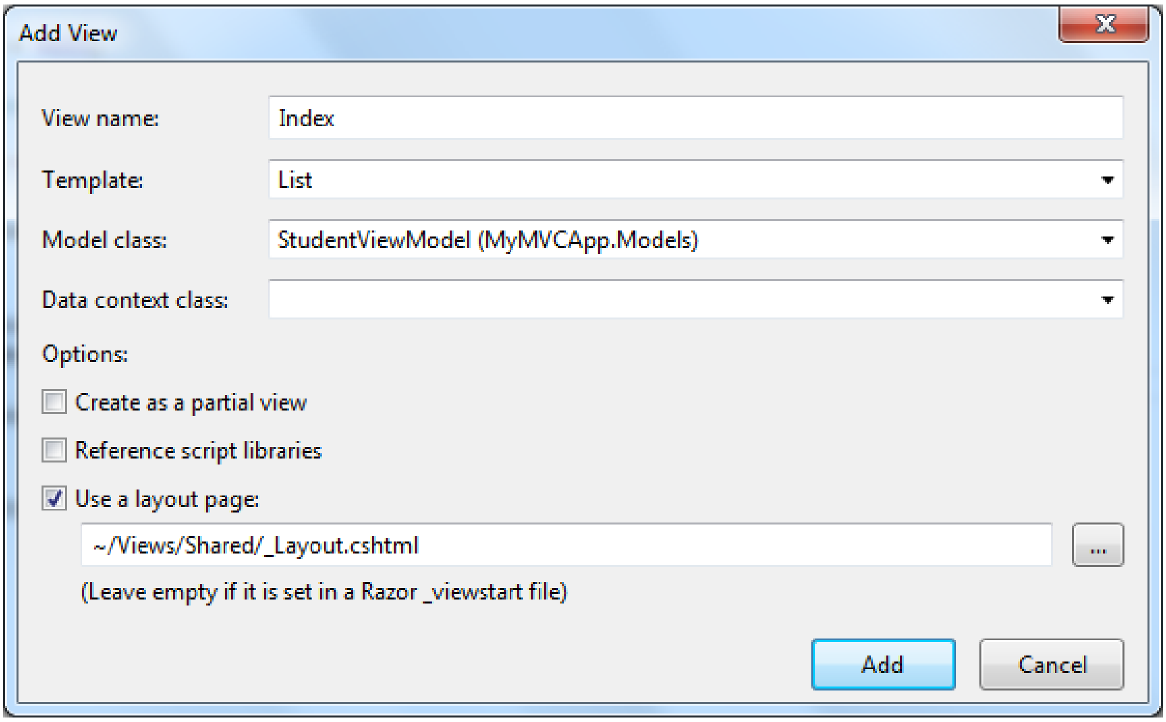
Example: MVC Controller

```
public class StudentController : Controller
{
    // GET: Student
    public ActionResult Index()
    {
        IEnumerable<StudentViewModel> students = null;

        using (var client = new HttpClient())
        {
            client.BaseAddress = new Uri("http://localhost:64189/api/");
            //HTTP GET
            var responseTask = client.GetAsync("student");
            responseTask.Wait();

            var result = responseTask.Result;
            if (result.IsSuccessStatusCode)
            {
                                                            var    readTask    =
result.Content.ReadAsAsync<IList<StudentViewModel>>();
                readTask.Wait();

                students = readTask.Result;
            }
            else //web api sent error response
            {
                //log response status here..

                students = Enumerable.Empty<StudentViewModel>();
```

```
                    ModelState.AddModelError(string.Empty, "Server error. Please 
contact administrator.");
            }
        }
        return View(students);
    }
}
```

Step 3:

Now, we need to add Index view. Right click in the Index action method and select **Add View..** option. This will open Add View popup as shown below. Now, select List as template and StudentViewModel as Model class as below (we already created StudentViewModel in the previous section).



Add View

View name: Index

Template: List

Model class: StudentViewModel (MyMVCApp.Models)

Data context class:

Options:

☐ Create as a partial view

☐ Reference script libraries

☑ Use a layout page:

~/Views/Shared/_Layout.cshtml

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

Add View in ASP.NET MVC

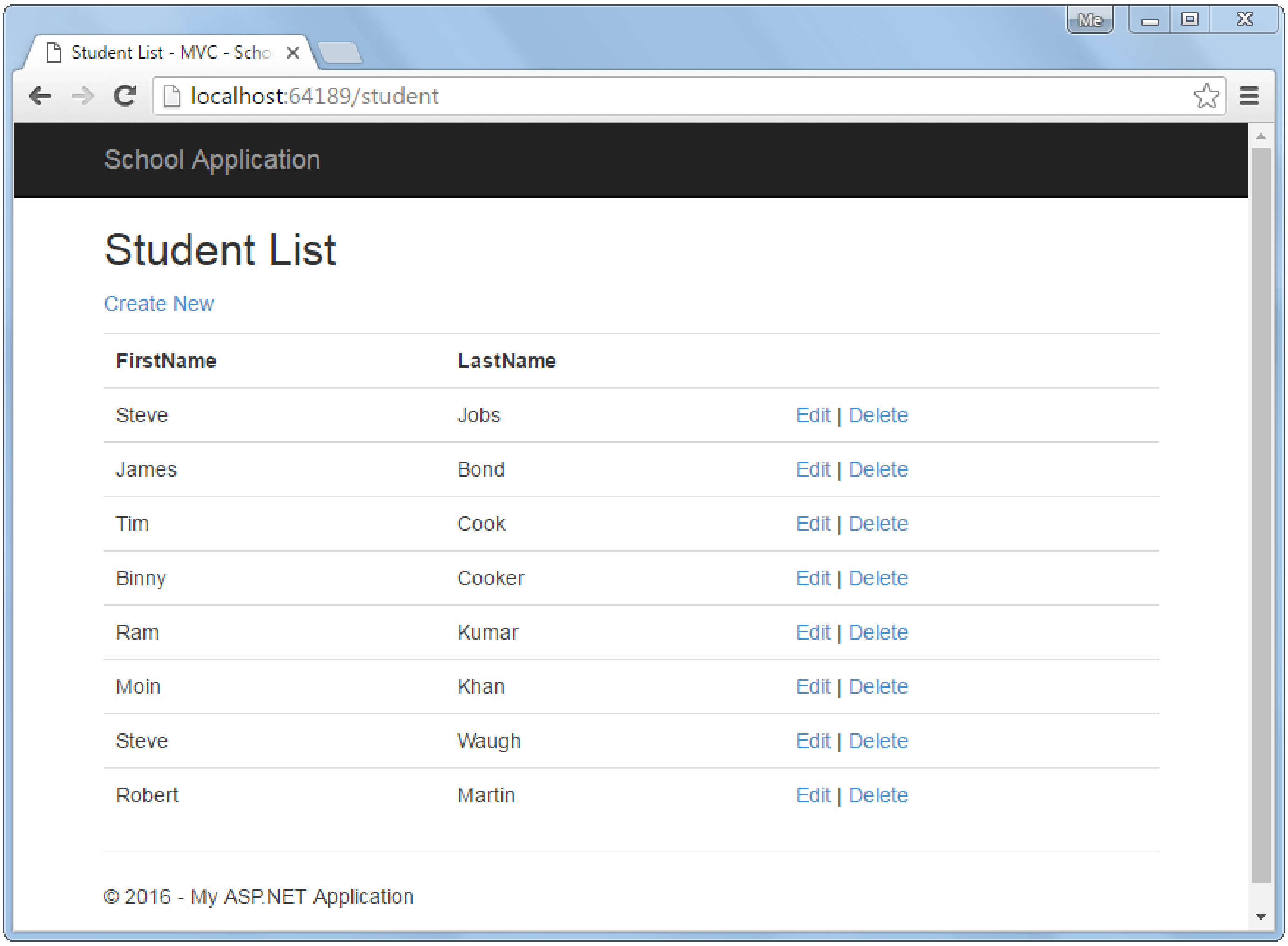
Click **Add** to add Index view in the **Views** folder. This will generate following Index.cshtml.

Index.cshtml

```
@model IEnumerable<WebAPIDemo.Models.StudentViewModel>

@{
    ViewBag.Title = "Index";
    Layout = "~/Views/Shared/_Layout.cshtml";
}

<h2>Index</h2>

<p>
    @Html.ActionLink("Create New", "Create")
</p>
<table class="table">
    <tr>
        <th>
            @Html.DisplayNameFor(model => model.FirstName)
        </th>
        <th>
            @Html.DisplayNameFor(model => model.LastName)
        </th>
    <th></th>
    </tr>

    @foreach (var item in Model) {
        <tr>
            <td>
                @Html.DisplayFor(modelItem => item.FirstName)
            </td>
        <td>
            @Html.DisplayFor(modelItem => item.LastName)
        </td>
        <td>
            @Html.ActionLink("Edit", "Edit", new { id=item.Id }) |
            @Html.ActionLink("Details", "Details", new { id=item.Id }) |
            @Html.ActionLink("Delete", "Delete", new { id=item.Id })
        </td>
        </tr>
    }

</table>
```

Remove Details link from the View because we will not create Details page here.

Now, run the application and you will see list of students in the browser as shown below.



School Application

Student List

Create New

FirstName	LastName	
Steve	Jobs	Edit | Delete
James	Bond	Edit | Delete
Tim	Cook	Edit | Delete
Binny	Cooker	Edit | Delete
Ram	Kumar	Edit | Delete
Moin	Khan	Edit | Delete
Steve	Waugh	Edit | Delete
Robert	Martin	Edit | Delete

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Student List View

Display Error

We have successfully displayed records in the view above but what if Web API returns error response?

To display appropriate error message in the MVC view, add the ValidationSummary() as shown below.

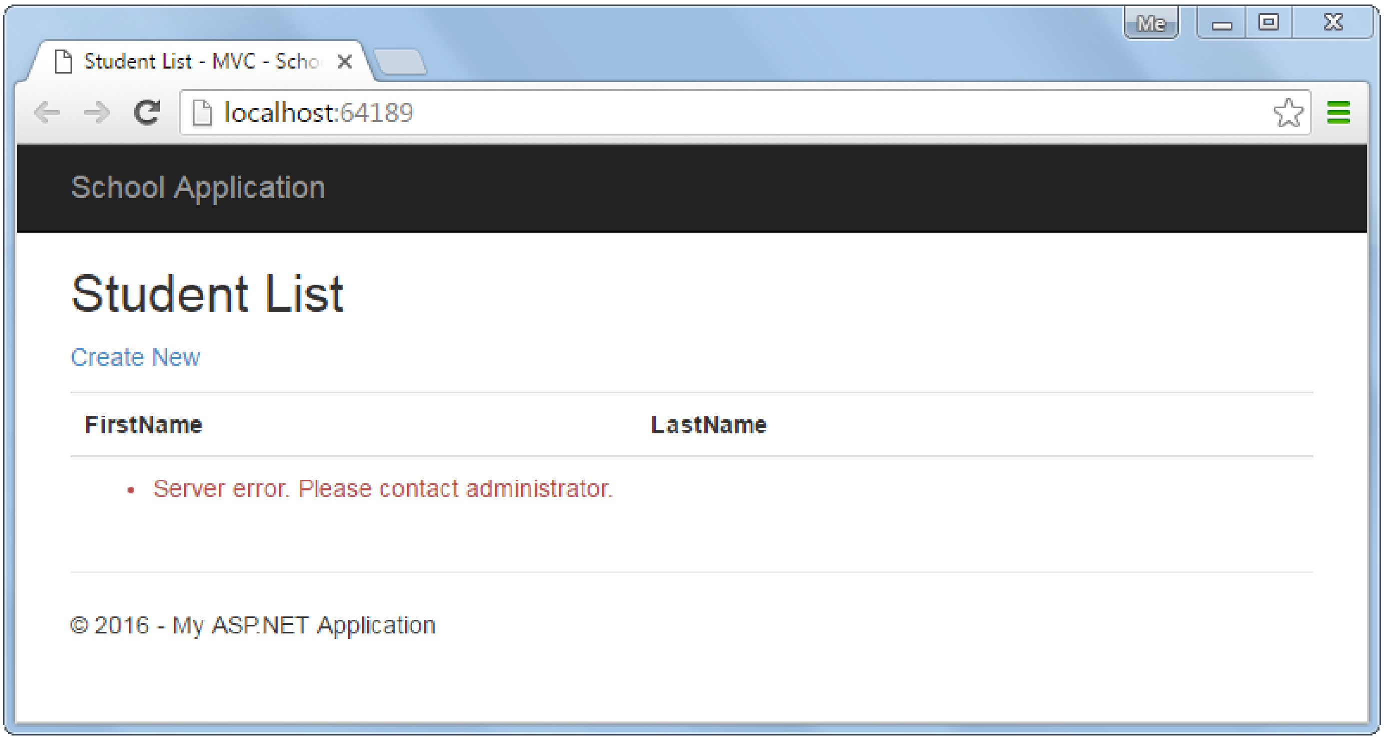
Index.cshtml

```
@model IEnumerable<WebAPIDemo.Models.StudentViewModel>

@{
    ViewBag.Title = "Index";
    Layout = "~/Views/Shared/_Layout.cshtml";
}

<h2>Index</h2>

<p>
    @Html.ActionLink("Create New", "Create")
</p>
<table class="table">
    <tr>
        <th>
            @Html.DisplayNameFor(model => model.FirstName)
        </th>
        <th>
            @Html.DisplayNameFor(model => model.LastName)
        </th>
    <th></th>
    </tr>

    @foreach (var item in Model) {
        <tr>
            <td>
                @Html.DisplayFor(modelItem => item.FirstName)
            </td>
            <td>
                @Html.DisplayFor(modelItem => item.LastName)
            </td>
            <td>
                @Html.ActionLink("Edit", "Edit", new { id=item.Id }) |
                @Html.ActionLink("Delete", "Delete", new { id=item.Id })
            </td>
        </tr>
    }
    <tr>
        <td>
            @Html.ValidationSummary(true, "", new { @class = "text-danger" })
        </td>
    </tr>

</table>
```

In the above view, we have added `@Html.ValidationSummary(true, "", new { @class = "text-danger" })` in the last row of the table. This is to display error message if Web API returns error response with the status other than 200 OK.

Please notice that we have added model error in the Index() action method in StudentController class created in the step 2 if Web API responds with the status code other than 200 OK.

So now, if Web API returns any kind of error then Student List view will display the message below.



School Application

Student List

Create New

FirstName	LastName

- Server error. Please contact administrator.

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Display Error Message

In the next section, we will consume Post method to create a new record in the underlying data source by clicking on Create New link in the above view.

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