



## Experiment – 2.3

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**Semester: 6<sup>th</sup> semester**

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**Subject: Dotnet LAB**

### Aim:

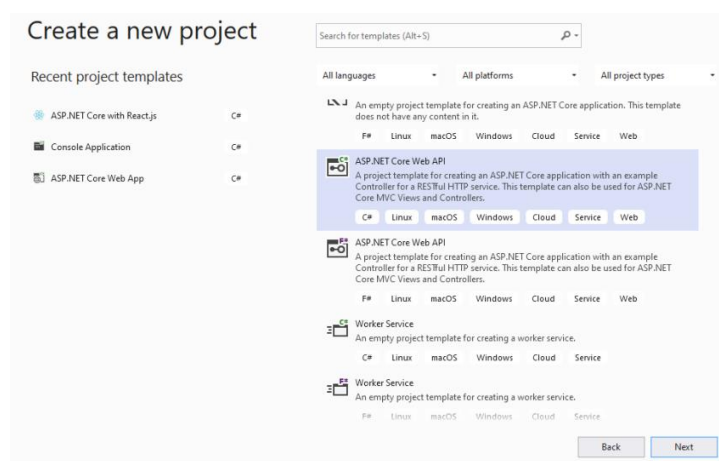
**Develop Web API with ASP.NET core framework.**

### Requirements:

- Visual Studio 2019 or above.
- Windows 10 or above.
- Asp.net framework installed in VS 2019.

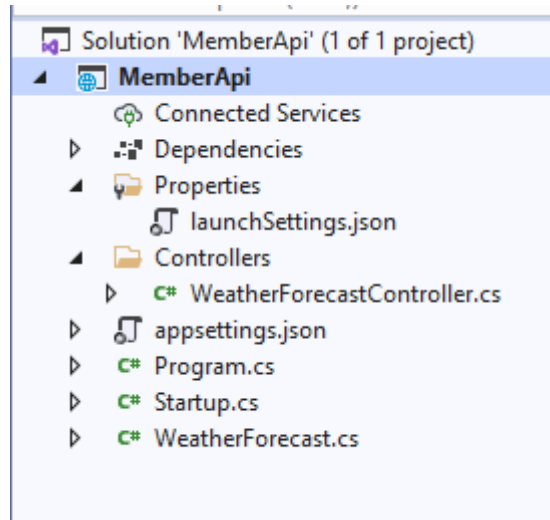
### Steps to setup our project:

1. Open Visual Studio 2019 and create a new project.
2. Select the “Asp.Net Core Web API” template and click on Next.

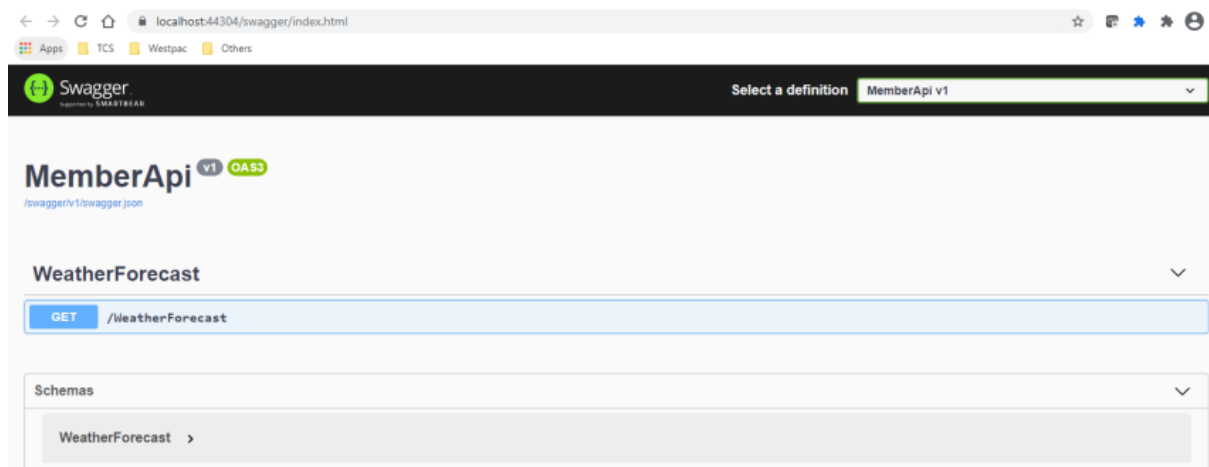


3. Provide Project name and location
4. Select Target Framework and click on Create button.

5. Member API is created. See below project structure.



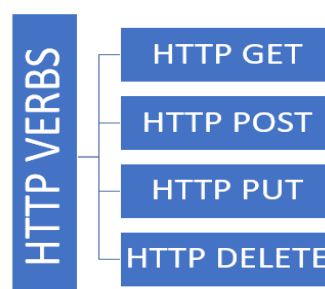
6. Let's execute this API project without making any changes.



By Default Weather Api executed and displays output using Swagger. I hope you are aware of Swagger.

Simply put, Swagger is open-source software tool to design, build, document, and use RESTful Web API.

Web API is mostly used for CRED (Create, Read, EDIT, DELETE) operations. It follows HTTP verbs for these operations.



- HTTP GET – Read Operation
- HTTP POST – Create Operation
- HTTP PUT – Update Operation
- HTTP DELETE – Delete Operation

**Following Diagram will explain our project which we are going to create:**



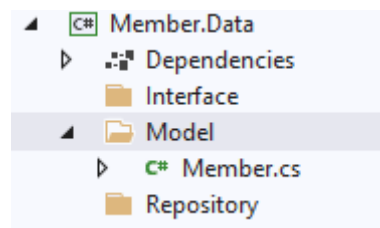
**First, we will create Member Data Layer and then create Member API Controller.**

### Step 1

Create New .Net Class Library Called Member. Data

### Step 2

Add three Folders; Models, Interface, and Repository in Member. Data Class library.



### Step 3

In the model folder, create a Model Class called member.

```

using System;
using System.Collections.Generic;
using System.Linq;
using System.Text;
using System.Threading.Tasks;

namespace Member.Data.Model
{
    public class Member
    {
        public int MemberId { get; set; }
        public string FirstName { get; set; }
        public string LastName { get; set; }
        public string Address { get; set; }
    }
}
  
```

## Step 4

In the interface, Create Member Interface called IMember.

```
using System.Collections.Generic;
using Member.Data.Model;

namespace Member.Data.Interface
{
    public interface IMembers
    {
        List<Members> GetAllMember();
        Members GetMember(int id);
    }
}
```

## Step 5

In the repository folder, Create Class Called "MembersRepository" and implement IMembers interface in it. In the real world, this class will interact with DB but in this demo, I will use hardcoded members data.

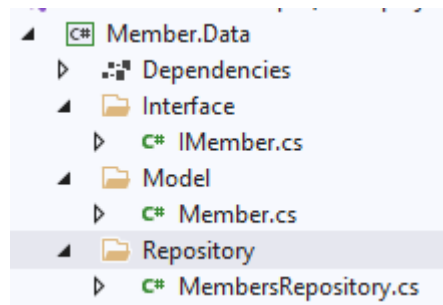
```
using Member.Data.Interface;
using Member.Data.Model;
using System.Collections.Generic;
using System.Linq;

namespace Member.Data.Repository
{
    public class MembersRepository : IMembers
    {
        List<Members> lisMembers = new List<Members>
        {
            new Members{MemberId=1, FirstName="Kirtesh", LastName="Shah",
Address="Vadodara" },
            new Members{MemberId=2, FirstName="Nitya", LastName="Shah",
Address="Vadodara" },
            new Members{MemberId=3, FirstName="Dilip", LastName="Shah",
Address="Vadodara" },
            new Members{MemberId=4, FirstName="Atul", LastName="Shah",
Address="Vadodara" },
            new Members{MemberId=5, FirstName="Swati", LastName="Shah",
Address="Vadodara" },
            new Members{MemberId=6, FirstName="Rashmi", LastName="Shah",
Address="Vadodara" },
        };
        public List<Members> GetAllMember()
        {
            return lisMembers;
        }

        public Members GetMember(int id)
        {
            return lisMembers.FirstOrDefault(x=>x.MemberId==id);
        }
    }
}
```

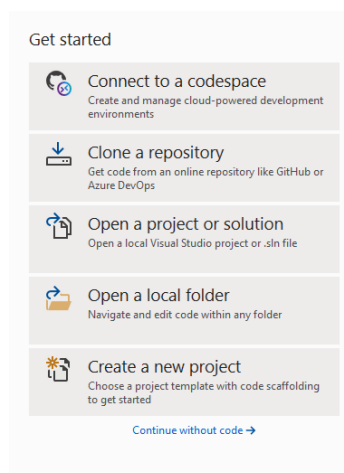
}

The data layer is ready to use. Now member data project will look like,



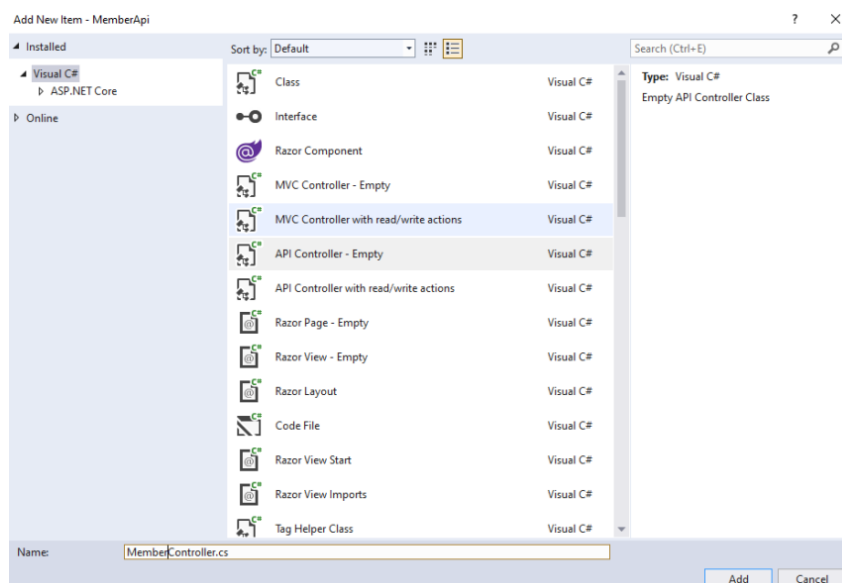
## Step 7

Now we will create MembeApi Controller in the Controller folder. Right-click on the Controller folder and Click on Add-Controller



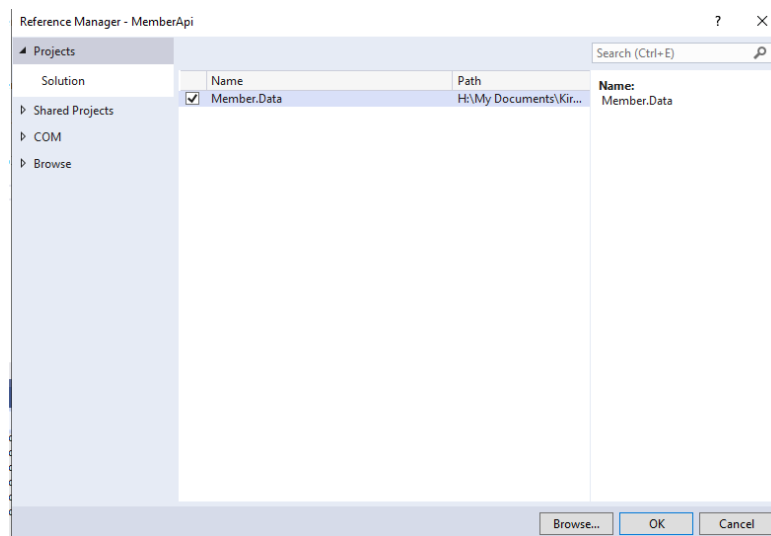
## Step 8

Click on Add button.



## Step 9

Right Click on MemberApi- Dependencies and add Project Reference.



## Step 10

MemberController class would be,

```
using Member.Data.Interface;
using Member.Data.Model;
using Member.Data.Repository;
using Microsoft.AspNetCore.Mvc;
using System.Collections.Generic;

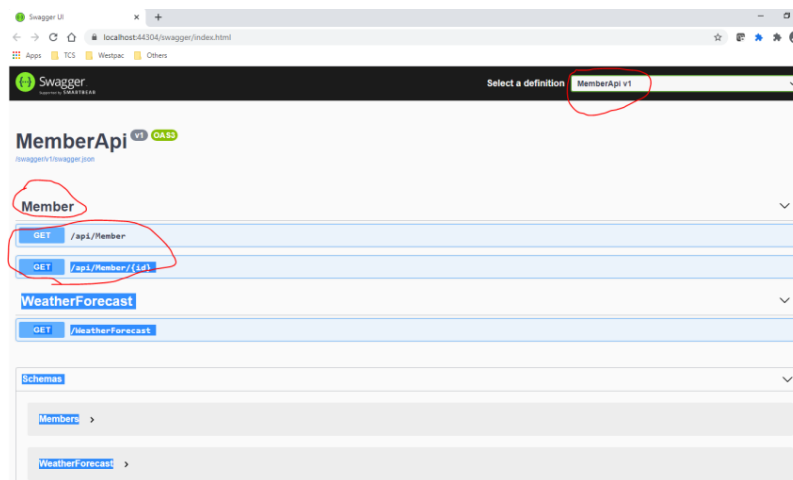
namespace MemberApi.Controllers
{
    [Route("api/[controller]")]
    [ApiController]
    public class MemberController : ControllerBase
    {
        private IMembers members = new MembersRepository();

        [HttpGet]
        public ActionResult<IEnumerable<Members>> GetAllMembers()
        {
            return members.GetAllMember();
        }

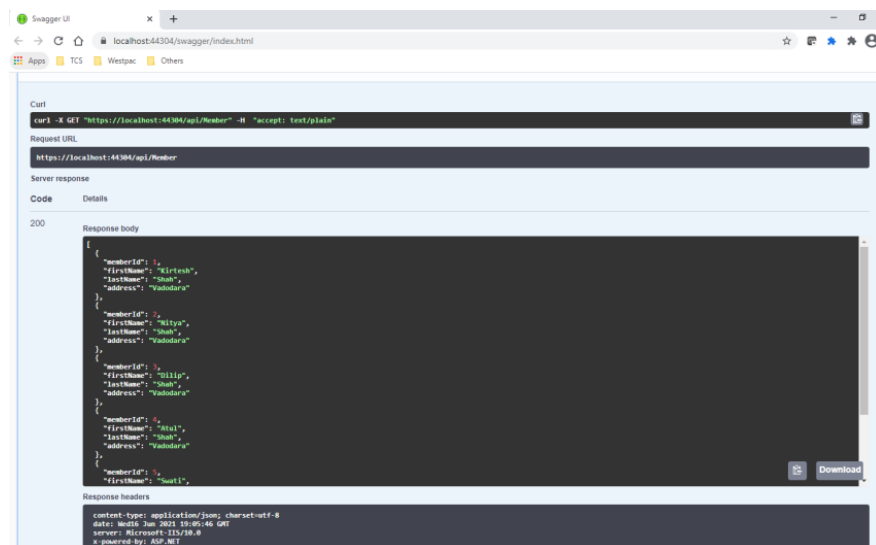
        [HttpGet]
        public ActionResult<Members> GetMemberById(int id)
        {
            return members.GetMember(id);
        }
    }
}
```

## Step 11

Execute Member API Project and the below screen will appear.



Click on api/Member – Get button.



Now will try /api/Member/{id} with id =1

