



ASP.NET CORE WEB API

CRUD med Web API (Create, Read, Update, Delete)



Visual Studio 2019

Open recent

As you use Visual Studio, any projects, folders, or files that you open will show up here for quick access.

You can pin anything that you open frequently so that it's always at the top of the list.

Get started



Clone or check out code

Get code from an online repository like GitHub or Azure DevOps



Open a project or solution

Open a local Visual Studio project or .sln file



Open a local folder

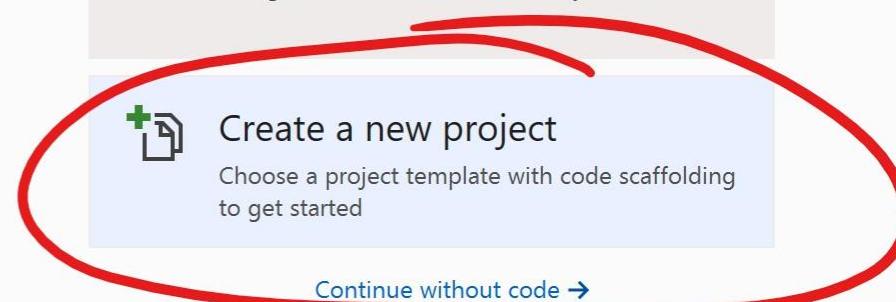
Navigate and edit code within any folder



Create a new project

Choose a project template with code scaffolding to get started

[Continue without code →](#)



X

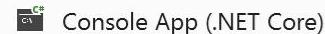
Create a new project

Recent project templates



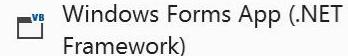
Azure Functions

C#



Console App (.NET Core)

C#



Windows Forms App (.NET Framework)

Visual Basic



ASP.NET Core Web Application

C#



Console App (.NET Framework)

C#



Azure Resource Group

C#



ASP.NET Web Application (.NET Framework)

C#



ASP.NET Web Application (.NET Framework)

Visual Basic

Search for templates (Alt+S)



Clear all

C#

All platforms

All project types



Console App (.NET Core)

A project for creating a command-line application that can run on .NET Core on Windows, Linux and MacOS.

C#

Linux

macOS

Windows

Console



ASP.NET Core Web Application

Project templates for creating ASP.NET Core web apps and web APIs for Windows, Linux and macOS using .NET Core or .NET Framework. Create web apps with Razor Pages, MVC, or Single Page Apps (SPA) using Angular, React, or React + Redux.

C#

Linux

macOS

Windows

Cloud

Service

Web



Blazor App

Project templates for creating Blazor apps that run on the server in an ASP.NET Core app or in the browser on WebAssembly. These templates can be used to build web apps with rich dynamic user interfaces (UIs).

C#

Linux

macOS

Windows

Cloud

Web



Class Library (.NET Standard)

A project for creating a class library that targets .NET Standard.

C#

Android

iOS

Linux

macOS

Windows

Library

Back

Next



Configure your new project

ASP.NET Core Web Application

C#

Linux

macOS

Windows

Cloud

Service

Web

Project name

WebApi

Location

C:\Users\HansMattiin-Lassei\source\repos



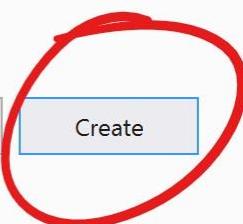
Solution name 

WebApi

Place solution and project in the same directory

Back

Create



Create a new ASP.NET Core web application

.NET Core ▾



Empty

An empty project template for creating an ASP.NET Core application. This template does not have any content in it.



API

A project template for creating an ASP.NET Core application with an example Controller for a RESTful HTTP service. This template can also be used for ASP.NET Core MVC Views and Controllers.



Web Application

A project template for creating an ASP.NET Core application with example ASP.NET Razor Pages content.



Web Application (Model-View-Controller)

A project template for creating an ASP.NET Core application with example ASP.NET Core MVC Views and Controllers. This template can also be used for RESTful HTTP services.



Angular

A project template for creating an ASP.NET Core application with Angular



React.js

[Get additional project templates](#)

Authentication

No Authentication

[Change](#)

Advanced

Configure for HTTPS

Enable Docker Support

(Requires [Docker Desktop](#))

Linux

Author: Microsoft

Source: .NET Core 3.1.1

Back

Create

Startup.cs  WebApi

WebApi  WebApi.Startup  Configure(IApplicationBuilder app, IWebHostEnvironment env)

```
1  using System;
2  using System.Collections.Generic;
3  using System.Linq;
4  using System.Threading.Tasks;
5  using Microsoft.AspNetCore.Builder;
6  using Microsoft.AspNetCore.Hosting;
7  using Microsoft.AspNetCore.Http;
8  using Microsoft.Extensions.DependencyInjection;
9  using Microsoft.Extensions.Hosting;
10
11 namespace WebApi
12 {
13     public class Startup
14     {
15         // This method gets called by the runtime. Use this method to add services to the container.
16         // For more information on how to configure your application, visit https://go.microsoft.com/fwlink/?LinkID=398940
17         public void ConfigureServices(IServiceCollection services)
18         {
19         }
20
21         // This method gets called by the runtime. Use this method to configure the HTTP request pipeline.
22         public void Configure(IApplicationBuilder app, IWebHostEnvironment env)
23         {
24             if (env.IsDevelopment())
25             {
26                 app.UseDeveloperExceptionPage();
27             }
28
29             app.UseRouting();
30
31             app.UseEndpoints(endpoints =>
32             {
33                 endpoints.MapGet("/", context =>
34                 {
35                     await context.Response.WriteAsync("Hello World");
36                 });
37             });
38         }
39     }
40 }
41
```

Toolbox Server Explorer SQL Server Object Explorer

Solution Explorer  Properties

Search Solution Explorer (Ctrl+Shift+F)
Solution 'WebApi' (1 of 1 project)
WebApi
Connected Services
Dependencies
Properties
appsettings.json
Program.cs
Startup.cs

90 %  No issues found | Ln: 31 Ch: 42 SPC CRLF

Package Manager Console Error List ... Output Web Publish Activity

Ready  Add to Source Control 

The screenshot shows the Microsoft Visual Studio IDE interface for a .NET Core Web API project named "WebApi".

Top Bar: File, Edit, View, Project, Build, Debug, Test, Analyze, Tools, Extensions, Window, Help, Search (Ctrl+Q), WebApi.

Toolbar: Standard icons for file operations like Open, Save, Print, and a magnifying glass for search.

Solution Explorer: Shows the solution structure with one project named "WebApi" containing files: Connected Services, Dependencies, Properties, appsettings.json, Program.cs, and Startup.cs. The "Startup.cs" file is currently selected.

Properties: A panel on the right side of the Solution Explorer.

Code Editor: Displays the "Startup.cs" file content:1 using System;
2 using System.Collections.Generic;
3 using System.Linq;
4 using System.Threading.Tasks;
5 using Microsoft.AspNetCore.Builder;
6 using Microsoft.AspNetCore.Hosting;
7 using Microsoft.AspNetCore.Http;
8 using Microsoft.Extensions.DependencyInjection;
9 using Microsoft.Extensions.Hosting;
10
11 namespace WebApi
12 {
13 public class Startup
14 {
15 }
16 }
17
18 }

Status Bar: Shows the zoom level (90%), code position (Ln: 16 Ch: 9), and file endings (SPC, CRLF).

Bottom Navigation: Package Manager Console, Error List ..., Output, Web Publish Activity, Solution Explorer, Team Explorer.

Bottom Left: Ready status icon.

Bottom Right: Add to Source Control icon with a red notification badge showing the number 5.

A screenshot of the Visual Studio IDE interface. The main window displays the `Startup.cs` file for a project named `WebApi`. The code implements the `IConfiguration` interface and its constructor, setting the `Configuration` property to the provided `configuration`.

```
1  using System;
2  using System.Collections.Generic;
3  using System.Linq;
4  using System.Threading.Tasks;
5  using Microsoft.AspNetCore.Builder;
6  using Microsoft.AspNetCore.Hosting;
7  using Microsoft.AspNetCore.Http;
8  using Microsoft.Extensions.Configuration;
9  using Microsoft.Extensions.DependencyInjection;
10 using Microsoft.Extensions.Hosting;
11
12 namespace WebApi
13 {
14     public class Startup
15     {
16         public IConfiguration Configuration { get; }
17
18         public Startup(IConfiguration configuration)
19         {
20             Configuration = configuration;
21         }
22
23     }
24 }
```

Annotations in red ink have been added to the code:

- A red arrow points from the `Configuration` field declaration at line 16 to the `configuration` parameter in the constructor at line 18.
- A red arrow points from the `configuration` parameter in the constructor at line 18 to the assignment statement at line 20.
- A large curly brace on the right side of the code block groups the `Configuration` field and the constructor, with the handwritten text "lags f. l." written above it.
- A small handwritten note "do" is written near the bottom of the brace.

The Solution Explorer on the right shows the project structure with files like `appsettings.json`, `Program.cs`, and `Startup.cs`.



Startup.cs* WebApi

WebApi WebApi WebApi.Startup ConfigureServices(IServiceCollection services)

```
16     1 reference
17     public IConfiguration Configuration { get; }
18
19     0 references
19     public Startup(IConfiguration configuration)
20     {
21         Configuration = configuration;
22     }
23
24     0 references
24     public void ConfigureServices(IServiceCollection services)
25     {
26         services.AddControllers();
27     }
28
29 }
30
31 }
32 }
```

Search Solution Explorer (Ctrl+Shift+F) Properties

Solution 'WebApi' (1 of 1 project)

- WebApi
 - Connected Services
 - Dependencies
 - Properties
 - appsettings.json
 - Program.cs
 - Startup.cs

Toolbox Server Explorer SQL Server Object Explorer

132 % No issues found

Ln: 27 Ch: 10 SPC CRLF

Solution Explorer Team Explorer

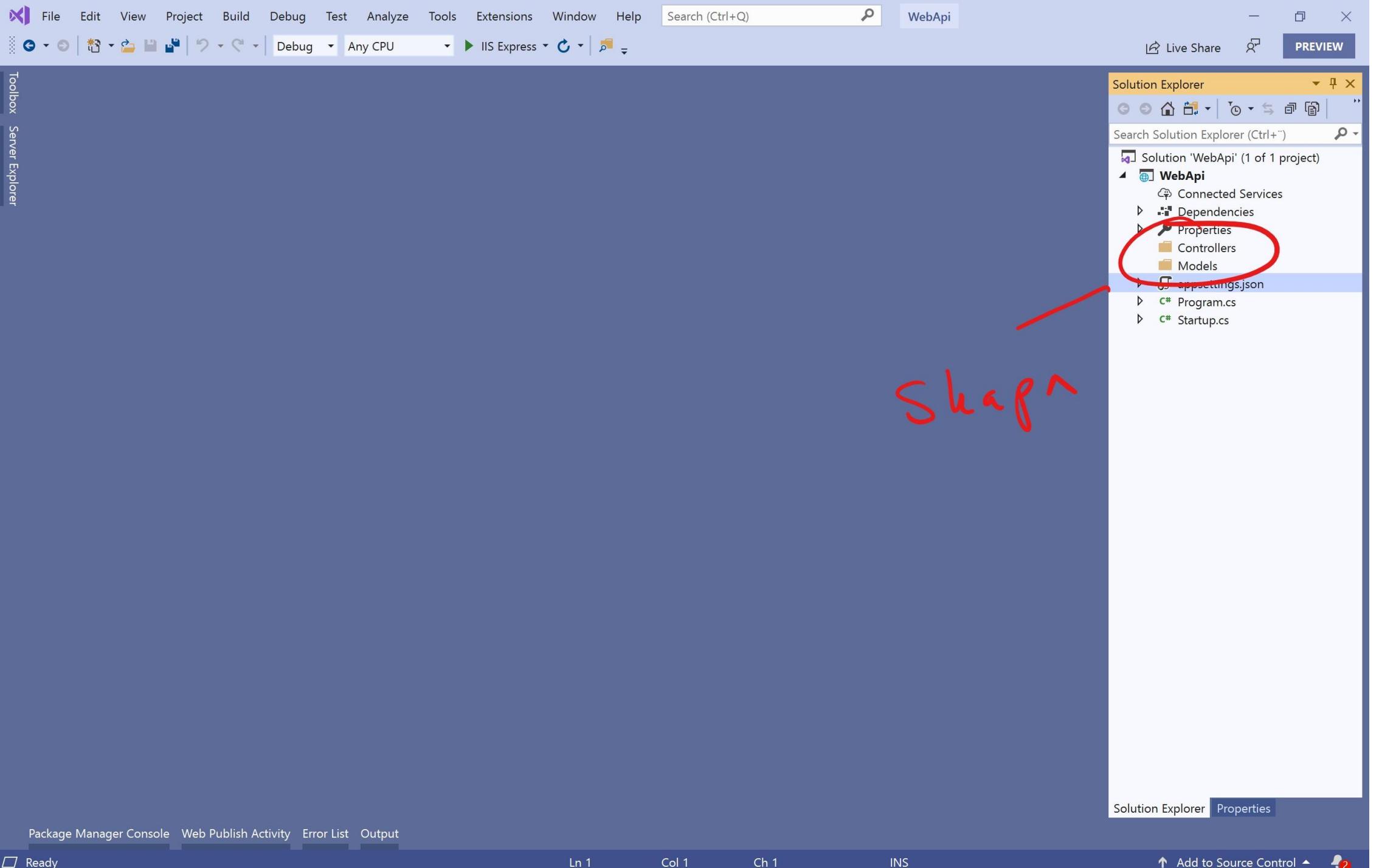
Package Manager Console Error List ... Output Web Publish Activity

Ready Add to Source Control

The screenshot shows the Microsoft Visual Studio IDE interface with the following details:

- Top Bar:** File, Edit, View, Project, Build, Debug, Test, Analyze, Tools, Extensions, Window, Help, Search (Ctrl+Q), WebApi.
- Solution Explorer:** Shows a single project named "WebApi" with files: Connected Services, Dependencies, Properties, appsettings.json, Program.cs, and Startup.cs.
- Toolbox:** Available on the left side of the editor.
- Editor:** Displays the code for `Startup.cs`. A red box highlights the `Configure` method.

```
23     0 references
24     public void ConfigureServices(IServiceCollection services)
25     {
26         services.AddControllers();
27     }
28
29     0 references
30     public void Configure(IApplicationBuilder app, IWebHostEnvironment env)
31     {
32         app.UseRouting();
33
34         app.UseAuthorization();
35
36         app.UseEndpoints(endpoints =>
37         {
38             endpoints.MapControllers();
39         });
39
40     }
41
42     }
43
44     }
45 }
```
- Status Bar:** Shows 132 % zoom, No issues found, Ln: 31, Ch: 10, SPC, CRLF.
- Bottom Navigation:** Package Manager Console, Error List ..., Output, Web Publish Activity, Solution Explorer, Team Explorer.



Solution Explorer

Search Solution Explorer (Ctrl+Shift+F) 

Solution 'WebApi' (1 of 1 project)

WebApi

- Connected Services
- Dependencies
- Properties
- Controllers
- Models

View in Browser (Google Chrome)
Browse With...

Add

Scope to This

New Solution Explorer View

Exclude From Project

Cut Ctrl+X

Copy Ctrl+C

Delete Del

Rename

Open Folder in File Explorer

Properties Alt+Enter



shap^

```
Product.cs*  X
File Edit View Project Build Debug Test Analyze Tools Extensions Window Help Search (Ctrl+Q) WebApi
Debug Any CPU IIS Express PREVIEW
Toolbox Server Explorer
WebApi
using System.Linq;
using System.Threading.Tasks;
namespace WebApi.Models
{
    public class Product
    {
        public int Id { get; set; }
        public string Name { get; set; }
        public string Description { get; set; }
        public double Price { get; set; }
    }
}
139 %  No issues found
Solution Explorer Properties
Package Manager Console Web Publish Activity Error List Output
Ln 14 Col 1 Ch 1 INS
Ready Add to Source Control 2
```

The screenshot shows the Microsoft Visual Studio IDE interface. The main window displays the `Product.cs` file under the `WebApi` project. The code defines a `Product` class with properties for `Id`, `Name`, `Description`, and `Price`. A red annotation consisting of the text "shap^" and a curved arrow points to the `Price` field. The Solution Explorer sidebar on the right shows the project structure, including the `Models` folder which contains the `Product.cs` file. The status bar at the bottom indicates the current line (Ln 14), column (Col 1), character (Ch 1), and mode (INS).



Solution Explorer

Search Solution Explorer (Ctrl+Shift+F)

Solution 'WebApi' (1 of 1 project)

WebApi

- Connected Services
- Dependencies
- Properties
- Controllers

Product.cs*

WebApi

WebApi.Models.Product

Price

```
4     using System.Linq;
5     using System.Threading.Tasks;
6 
7     namespace WebApi.Models
8     {
9         0 references
10        public class Product
11        {
12            0 references
13            public int Id { get; set; }
14            0 references
15            public string Name { get; set; }
16            0 references
17            public string Description { get; set; }
18            0 references
19            public double Price { get; set; }
20        }
21    }
```

Controller...

- New Item... Ctrl+Shift+A
- Existing Item... Shift+Alt+A
- New Scaffolded Item...
- New Folder
- Container Orchestrator Support...
- Docker Support...
- Client-Side Library...
- New Azure WebJob Project
- Existing Project as Azure WebJob
- Class... Shift+Alt+C

Add

Scope to This

New Solution Explorer View

Exclude From Project

Cut Ctrl+X

Copy Ctrl+C

Delete Del

Rename

Open Folder in File Explorer

Properties Alt+Enter

Toolbox

Server Explorer

139 %

No issues found

Package Manager Console Web Publish Activity Error List Output

Ln 14 Col 1 Ch 1 INS

This item does not support previewing

Add to Source Control

PREVIEW

Live Share PREVIEW

Product.cs

Add New Scaffolded Item

Installed

- MVC Controller - Empty
- MVC Controller with read/write actions
- MVC Controller with views, using Entity Framework
- API Controller - Empty**
- API Controller with read/write actions
- API Controller with actions, using Entity Framework

An empty API controller.

Id: ApiControllerEmptyScaffolder

Click here to go online and find more scaffolding extensions.

Add Cancel

```
4 using System;
5 using System.Collections.Generic;
6 using System.Linq;
7 using System.Web;
8 using System.Web.Http;
9 using System.Web.Optimization;
10 using System.Web.Routing;
11 using System.Web.Security;
12 using System.Web.SessionState;
13
14 [RoutePrefix("api")]
15 public class ProductController : ApiController
16 {
17 }
```

Solution Explorer

Solution Explorer (Ctrl+Shift+E)

Solution 'WebApi' (1 of 1 project)

WebApi

- Connected Services
- Dependencies
- Properties
- Controllers**
- Models
- Product.cs
- appsettings.json
- Program.cs
- Startup.cs

139 % No issues found

Package Manager Console Web Publish Activity Error List Output

Screenshot of Microsoft Visual Studio showing the creation of a new API controller.

The main window displays the `Product.cs` file under the `WebApi` project. The code defines a `Product` class with properties `Id`, `Name`, and `Price`.

```
Product.cs
1  using System;
2  using System.Collections.Generic;
3  using System.Linq;
4  using System.Threading.Tasks;
5
6  namespace WebApi.Models
7  {
8      public class Product
9      {
10         public int Id { get; set; }
11         public string Name { get; set; }
12         public double Price { get; set; }
13     }
14 }
15
16 }
17
```

A modal dialog titled "Add Empty API Controller" is open, prompting for the controller name. The input field contains "ProductsController". The "Add" button is highlighted with a red circle, and the "Cancel" button is also circled.

The Solution Explorer on the right shows the project structure:

- Solution 'WebApi' (1 of 1 project)
 - WebApi
 - Connected Services
 - Dependencies
 - Properties
 - Controllers
 - ProductsController
 - Models
 - Product.cs
 - appsettings.json
 - Program.cs
 - Startup.cs

Toolbars and status bars at the bottom provide standard development tools and status information.

File Edit View Project Build Debug Test Analyze Tools Extensions Window Help Search (Ctrl+Q) WebApi

Debug Any CPU IIS Express Live Share PREVIEW

ProductsController.cs* Product.cs

WebApi.Controllers.ProductsController products

namespace WebApi.Controllers

[Route("api/[controller]")]
[ApiController]

public class ProductsController : ControllerBase

{

private static List<Product> products = new List<Product>()

{

new Product {
Id = 1006368,
Name = "Austin and Barbeque AABQ Wifi Food Thermometer",
Description = "Termometer med WiFi för en optimal innertemperatur",
Price = 399
},
new Product {
Id = 1009334,
Name = "Andersson Elektrisk Tändare ECL 1.1",
Description = "Elektrisk stormssäker tändare helt utan gas och bränsle",
Price = 89
},
new Product {
Id = 1002266,
Name = "Weber Non-Stick Spray",
Description = "BBQ-oljespray som motverkar att råvaror fastnar på gallret",
Price = 99
}

};

};

115 % No issues found

Package Manager Console Web Publish Activity Error List Output

Ln 17 Col 10 Ch 10 INS

Ready Add to Source Control 2

Toolbox Server Explorer

Solution Explorer

Search Solution Explorer (Ctrl+Shift+F)

Solution 'WebApi' (1 of 1 project)

WebApi

- Connected Services
- Dependencies
- Properties
- Controllers
- Models
 - Product.cs
- appsettings.json
- Program.cs
- Startup.cs

PREVIEW

Taggit

untagged

115 %

No issues found

Package Manager Console Web Publish Activity Error List Output

Ln 17 Col 10 Ch 10 INS

Ready Add to Source Control 2

Debug Any CPU IIS Express

Live Share PREVIEW

ProductsController.cs* Product.cs

WebApi.Controllers.ProductsController Get()

```
11  public class ProductsController : ApiController
2  {
3      private readonly IEnumerable<Product> products = new List<Product>
4      {
5          new Product { Id = 1, Name = "Weber Non-Stick Spray", Description = "BBQ-oljespray som motverkar att råvaror fastnar på gallret", Price = 99 }
6      };
7
8      // GET: api/Products
9      [HttpGet]
10     public ActionResult<IEnumerable<Product>> Get()
11     {
12         return products;
13     }
14 }
```

Toolbox Server Explorer

Solution Explorer

Diagnostic Tools

Search Solution Explorer (Ctrl+F)

Solution 'WebApi' (1 of 1 project)

- WebApi
 - Connected Services
 - Dependencies
 - Properties
 - Controllers
 - Models
 - Product.cs
 - appsettings.json
 - Program.cs
 - Startup.cs

115 % No issues found

Solution Explorer Properties

Package Manager Console Web Publish Activity Error List Output

Ln 42 Col 9 Ch 9 INS

Ready Add to Source Control

ProductsController.cs*  Product.cs

WebApi

```
44 //GET ALL PRODUCTS
45 [HttpGet]
46 public ActionResult<IEnumerable<Product>> Get()
47 {
48     return products;
49 }
50
51
52
53
54
55
56
57 //GET SPECIFIC PRODUCT
58 [HttpGet("{id}")]
59 public ActionResult<Product> Get(int id)
60 {
61     var product = products.Find(p => p.Id == id);
62
63     if (product == null)
64     {
65         return NotFound();
66     }
67
68     return product;
69 }
70
71
72
73 
74
75
76
77
```

No issues found

Solution Explorer Properties

Search Solution Explorer (Ctrl+F) 

Solution 'WebApi' (1 of 1 project)

- WebApi
 - Connected Services
 - Dependencies
 - Properties
 - Controllers
 - Models
 - Product.cs
 - appsettings.json
 - Program.cs
 - Startup.cs



ProductsController.cs* X Product.cs

WebApi.Controllers.ProductsController products

```
65     return NotFound();
66 }
67
68     return product;
69 }
70
71
72
73
74
75 //ADD NEW PRODUCT
76 [HttpPost]
77 public ActionResult Post([FromBody] Product product)
78 {
79     if (products.Exists(p => p.Id == product.Id))
80     {
81         return Conflict();
82     }
83
84     products.Add(product);
85     return CreatedAtAction(nameof(Get), new { id = product.Id }, products);
86 }
87
88
89
90
91
92
93
94 }
95 }
```

Toolbox Server Explorer Diagnostic Tools

Solution Explorer

Search Solution Explorer (Ctrl+Shift+F)

Solution 'WebApi' (1 of 1 project)

- WebApi
 - Connected Services
 - Dependencies
 - Properties
 - Controllers
 - Models
 - C# Product.cs
 - appsettings.json
 - C# Program.cs
 - C# Startup.cs

115% No issues found

Package Manager Console Web Publish Activity Error List Output

Ln 94 Col 6 Ch 6 INS

Ready Add to Source Control

ProductsController.cs*  Product.cs

WebApi

```
83     products.Add(product);
84     return CreatedAtAction(nameof(Get), new { id = product.Id }, products);
85 }
86
87
88
89
90
91
92
93
94 //DELETE PRODUCT
95 [HttpDelete("{id}")]
96 public ActionResult<IEnumerable<Product>> Delete(int id)
97 {
98     var product = products.Where(p => p.Id == id);
99
100    if (product == null)
101    {
102        return NotFound();
103    }
104
105    products = products.Except(product).ToList();
106
107    return products;
108}
109
110
111
112
113
114
115
116 }
```

Search Solution Explorer (Ctrl+Shift+F)  Solution 'WebApi' (1 of 1 project)

WebApi

- Connected Services
- Dependencies
- Properties
- Controllers
- Models
 - Product.cs
 - appsettings.json
 - Program.cs
 - Startup.cs

Solution Explorer Properties

ProductsController.cs* Product.cs

WebApi.Controllers.ProductsController Put(int id, Product product)

```
104
105     products = products.Except(product).ToList();
106
107     return products;
108 }
109
110
111
112
113
114 //UPDATE PRODUCT
115 [HttpPut("{id}")]
116 public ActionResult<IEnumerable<Product>> Put(int id, [FromBody] Product product)
117 {
118     if (id != product.Id)
119     {
120         return BadRequest();
121     }
122
123     var existingProduct = products.Where(p => p.Id == id);
124     products = products.Except(existingProduct).ToList();
125
126     products.Add(product);
127
128     return products;
129 }
130
131
132
133
134
135
136
137 }
```

115 % No issues found

Solution Explorer Properties

Toolbox Server Explorer

Search Solution Explorer (Ctrl+~)

Solution Explorer (WebApi) (1 of 1 project)

- WebApi
 - Connected Services
 - Dependencies
 - Properties
 - Controllers
 - Models
 - Product.cs
 - appsettings.json
 - Program.cs
 - Startup.cs

Diagnostic Tools

Package Manager Console Web Publish Activity Error List Output

Ln 130 Col 10 Ch 10 INS

Ready Add to Source Control

Postman

File Edit View Help

New Import Runner + ... My Workspace Invite No Environment Comments (0) Sign In

Filter History Collections APIs Save Responses Clear all Today POST http://localhost:58938/api/products Untitled Request POST http://localhost:58938/api/products Send Save Params Authorization Headers (9) Body (1) Pre-request Script Tests Settings Cookies Code Beautify

POST http://localhost:58938/api/products

Body (1)

```
1 {  
2   "id": 444444,  
3   "name": "The GrillMaster 2020",  
4   "description": "Få en personlig grillmaster hem till dig som fixar maten åt dig",  
5   "price": 2999  
6 }
```

Body Cookies Headers (6) Test Results Status: 201 Created Time: 175ms Size: 814 B Save Response

Pretty Raw Preview Visualize JSON

```
1 [  
2   {  
3     "id": 1006368,  
4     "name": "Austin and Barbeque AABQ Wifi Food Thermometer",  
5     "description": "Termometer med WiFi för en optimal innertemperatur",  
6     "price": 399  
7   },  
8   {  
9     "id": 1009334,  
10    "name": "Andersson Elektrisk Tändare ECL 1.1",  
11    "description": "Elektrisk stormsäker tändare helt utan gas och bränsle",  
12    "price": 89  
13  },  
14  {  
15    "id": 1002266,  
16    "name": "Weber Non-Stick Spray",  
17    "description": "BBQ-oljespray som motverkar att råvaror fastnar på gallret",  
18    "price": 99  
19  },  
20  {  
21    "id": 444444,  
22    "name": "The GrillMaster 2020",  
23    "description": "Få en personlig grillmaster hem till dig som fixar maten åt dig",  
24    "price": 2999  
25  }]
```