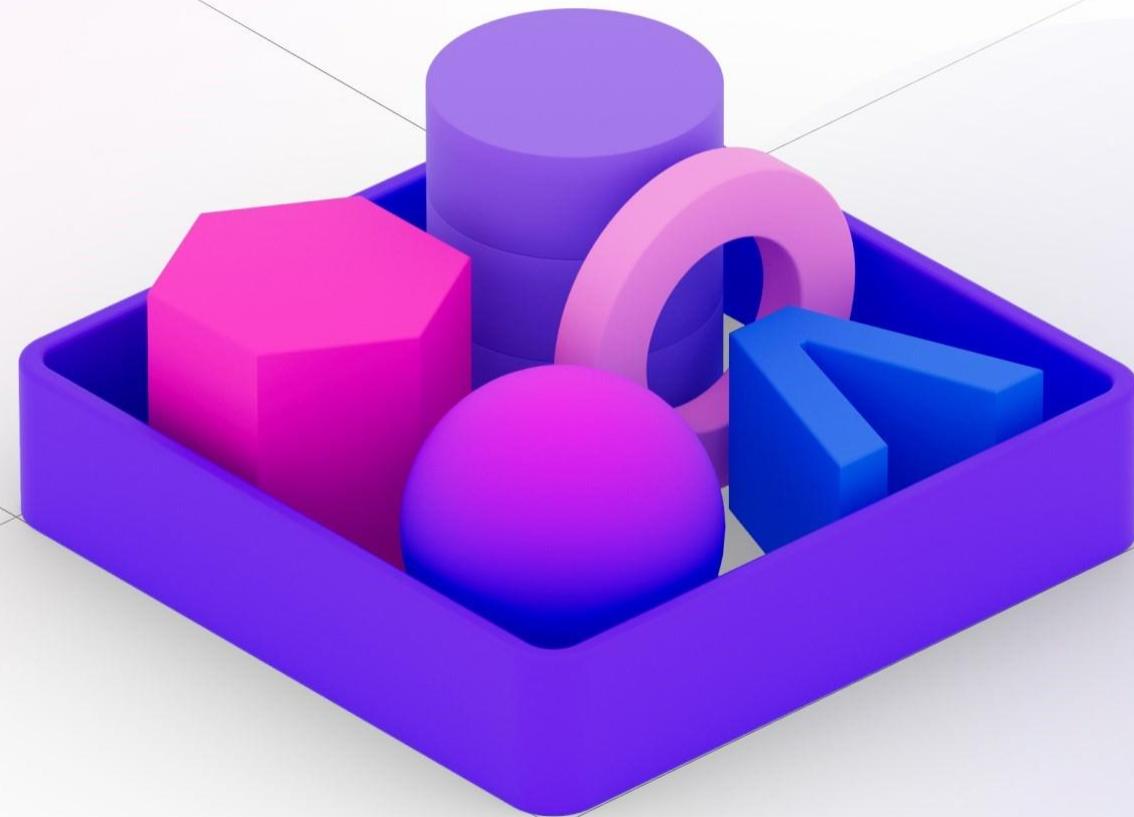


STUDY4

為 學 習 而 生

B Build School

.NET Conf TAIWAN

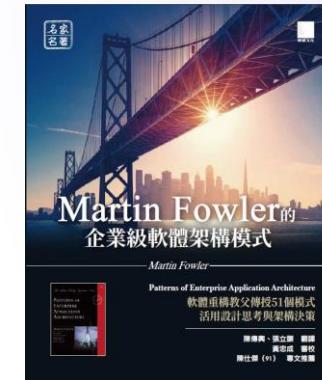


Visual Studio and Web API Tooling

陳傳興(Bruce Chen)

@Bruce

- SkillTree 兼任講師
- 任職於遠東金士頓科技
- 現任微軟最有價值專家
- 《ASP.NET MVC 4/5網站開發美學》合著
- 《MARTIN FOWLER的企業級軟體架構模式》譯者



Visual Studio 17.x 新(好)功能

Visual Studio Tooling





Visual Studio 2022 |

適用於 Windows 上 .NET 和 C++ 開發人員的最全方位 IDE，可用於建置 Web、雲端、桌面、行動應用程式、服務和遊戲。

預覽

提早取得主要版本中尚未提供的最新功能

[深入了解 →](#)



社群

功能強大的 IDE，免費供學生、開放原始碼參與者及個人使用

[免費下載](#)



Professional

最適合小型團隊的專業 IDE

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Enterprise

適合任何大小團隊的可調整、端對端解決方案

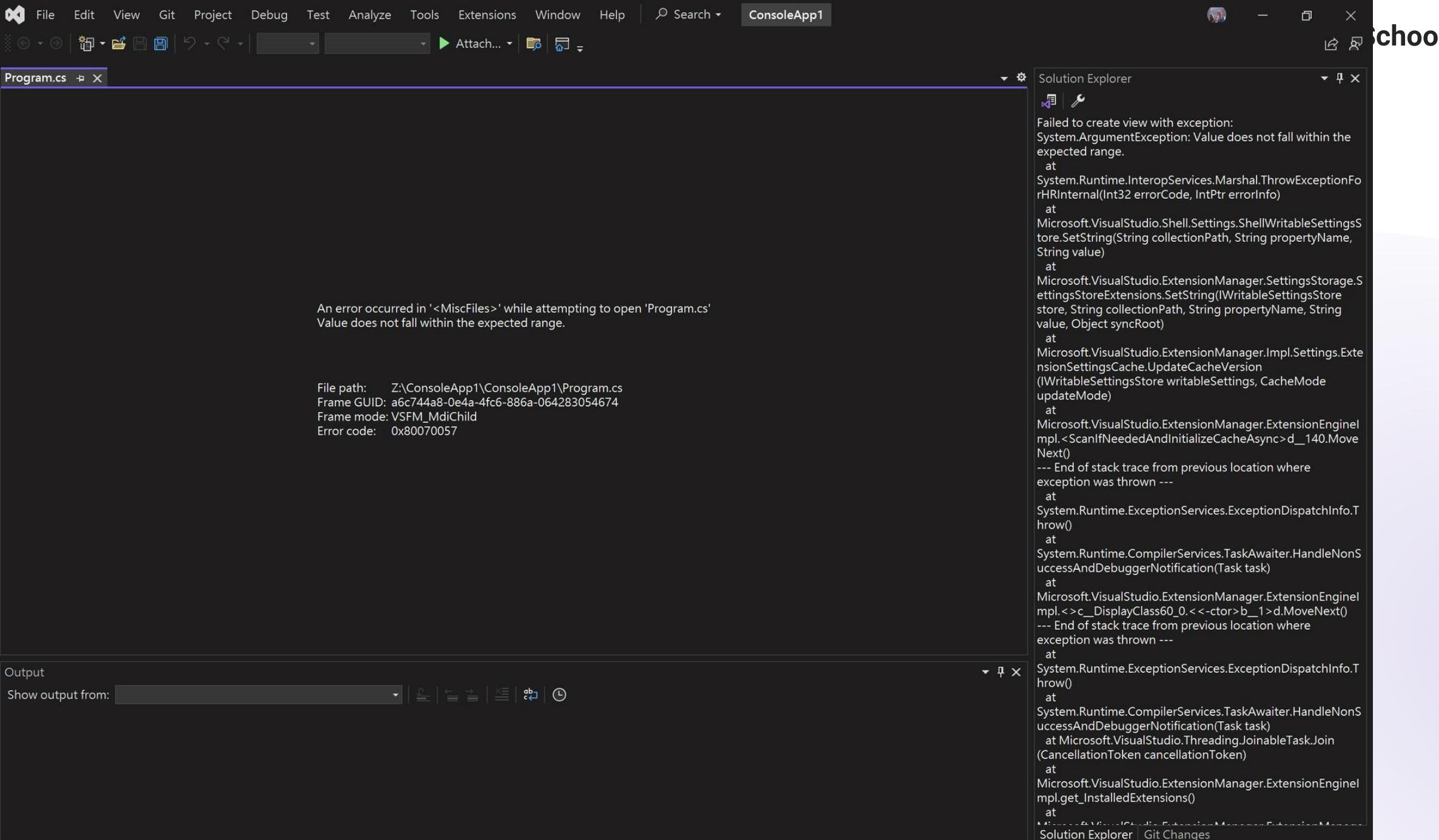
[免費試用](#)

[版本資訊 →](#)

[比較版本 →](#)

[如何離線安裝 →](#)

[授權條款 →](#)



Output

Show output from:

我們懷念它

The screenshot shows the Visual Studio Installer application window. The title bar reads "Visual Studio Installer". Below it, there are two tabs: "已安裝" (Installed) and "可用" (Available). The "已安裝" tab is underlined, indicating it is selected. The main content area displays a single item: "Visual Studio Enterprise 2022" version 17.8.2. A message above the item states "所有安裝都是最新的。" (All installations are up-to-date.) To the right of the item is a context menu with the following options: "修改(M)" (Modify), "啟動(L)" (Launch), "更多 ▾" (More), "修復(R)" (Repair), "解除安裝(U)" (Uninstall) which is highlighted with a blue border, "匯入組態(I)" (Import Settings), "匯出組態(E)" (Export Settings), and "更新設定(S)". On the far right of the screen, there is a sidebar titled "開發人員新聞" (Developer News) featuring several news items from Microsoft's developer blog. At the bottom right of the main content area, there is a note about getting help via Microsoft Developer Community or Visual Studio Support. The bottom right corner of the window also shows the build number "安裝程式版本 3.9.107.56113".

Visual Studio Installer

已安裝 可用

所有安裝都是最新的。

Visual Studio Enterprise 2022
17.8.2
可擴展，且適用於任何規模小組的全方位解決方案
版本資訊

修改(M)
啟動(L)
更多 ▾
修復(R)
解除安裝(U)
匯入組態(I)
匯出組態(E)
更新設定(S)

開發人員新聞

Scroll to expand document tabs
When you have lots of tabs open in Visual Studio,...
2023年12月4日

My favorite features in Visual Studio 17.8
It was a busy week for the Visual Studio team, pre...
2023年11月29日

Write Your Git Commits with GitHub Copilot
After spending hours on a bug fix or a feature up...
2023年11月28日

檢視更多 Microsoft 開發人員新聞...

需要協助嗎？查看 [Microsoft 開發人員社群](#) 或是
透過 [Visual Studio 支援](#) 與我們連絡。

安裝程式版本 3.9.107.56113

Developer News

The screenshot shows the Visual Studio Installer window. On the left, it displays the status "已安裝 可用" and a message stating "所有安裝都是最新的。". It lists "Visual Studio Enterprise 2022" version 17.8.2, with options to "修改(M)", "啟動(L)", or "更多 ▾". Below this, there's a link to "版本資訊". On the right, a sidebar titled "開發人員新聞" contains three articles:

- My favorite features in Visual Studio 17.8**
It was a busy week for the Visual Studio team, pre...
2023年11月29日
- Write Your Git Commits with GitHub Copilot**
After spending hours on a bug fix or a feature up...
2023年11月28日
- Community Feedback Building 17.8 & 17.9 Preview**
1
The Visual Studio team depends on community f...
2023年11月23日

At the bottom of the sidebar, there's a link to "檢視更多 Microsoft 開發人員新聞...". The footer of the window includes a note about community support and the installation version.

需要協助嗎? 查看 [Microsoft 開發人員社群](#) 或是
透過 [Visual Studio 支援](#) 與我們連絡。

安裝程式版本 3.9.107.56113

What's New?

The screenshot shows the Visual Studio 2022 interface with the 'What's New?' page open. The left sidebar lists various new features, and the main area displays four sections: 'Summary View for Compare and Diff', 'Create Pull Request Updates', 'Performance enhancements', and 'C++ Build Insights Functions View'. Each section includes a brief description and a screenshot or chart illustrating the feature.

What's New

- Summary View for Compare and Diff
- Create Pull Request Updates
- Performance enhancements
- C++ Build Insights Functions View
- Unreal Engine Snippets
- Unreal Engine Test Adapter
- Unreal Engine Reflection Macro Specifier Suggestions
- Case Preserving Find and Replace
- .NET Counters Tool in Debugging Scenario
- Size and alignment of a class, struct, and union inside Quick Info.
- Debug Linux App Services via Attach to Process
- .NET Counter Support for New Instruments via Meters API
- BenchmarkDotNet IDiagnosers
- Enhanced Theme Support for Breakpoint Settings Window
- Make Member Function Const
- Make Global Functions Static
- Sort #include Directives
- Structured Diagnostics

Visual Studio has been updated to 17.8 | Release Notes

This update is packed with an array of tools and features to improve every stage of software development. Select a topic to learn what's new.

Summary View for Compare and Diff

See only the changed sections in compare and diff views.

Create Pull Request Updates

You can now use Markdown descriptions and add your reviewers to your pull requests in Visual Studio.

Performance enhancements

Improved Windows PDB Breakpoint Binding and Enhanced C++ Unreal Engine Project IntelliSense Performance, among other enhancements.

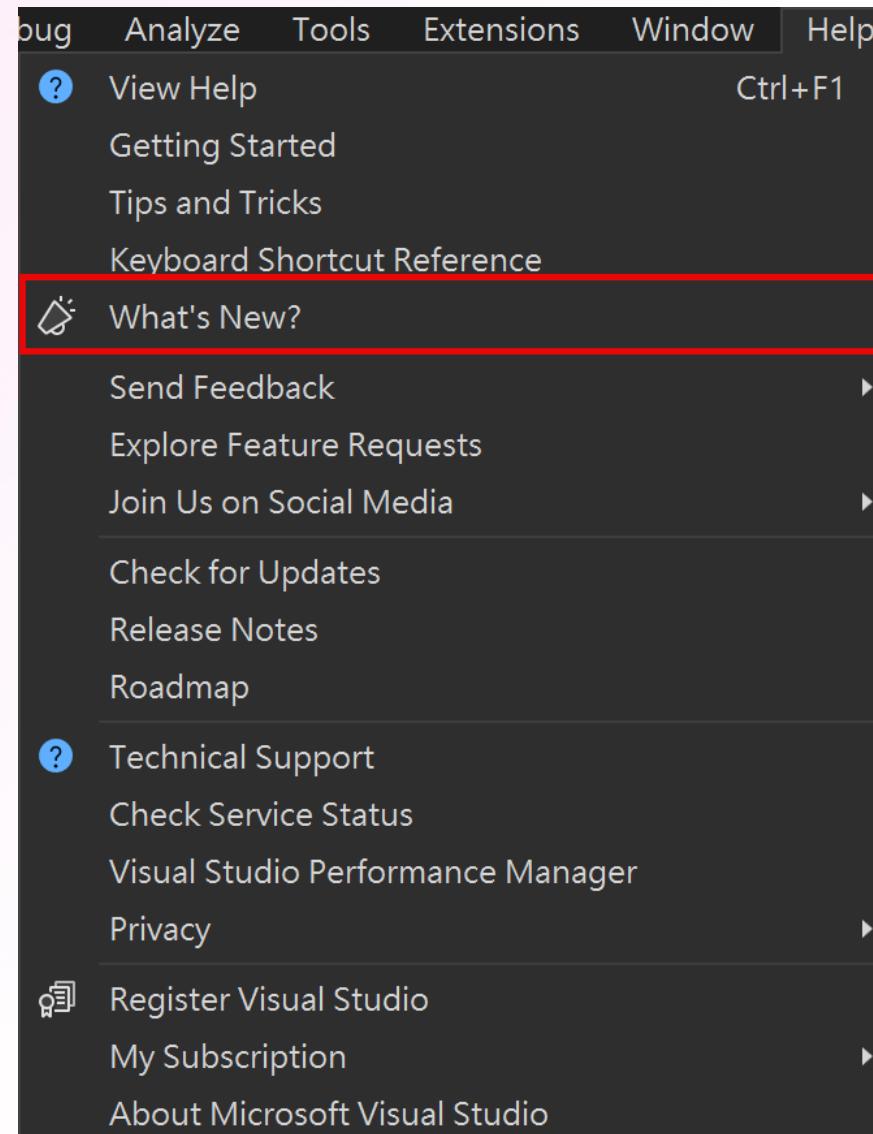
C++ Build Insights Functions View

View Function Generation Time with Build

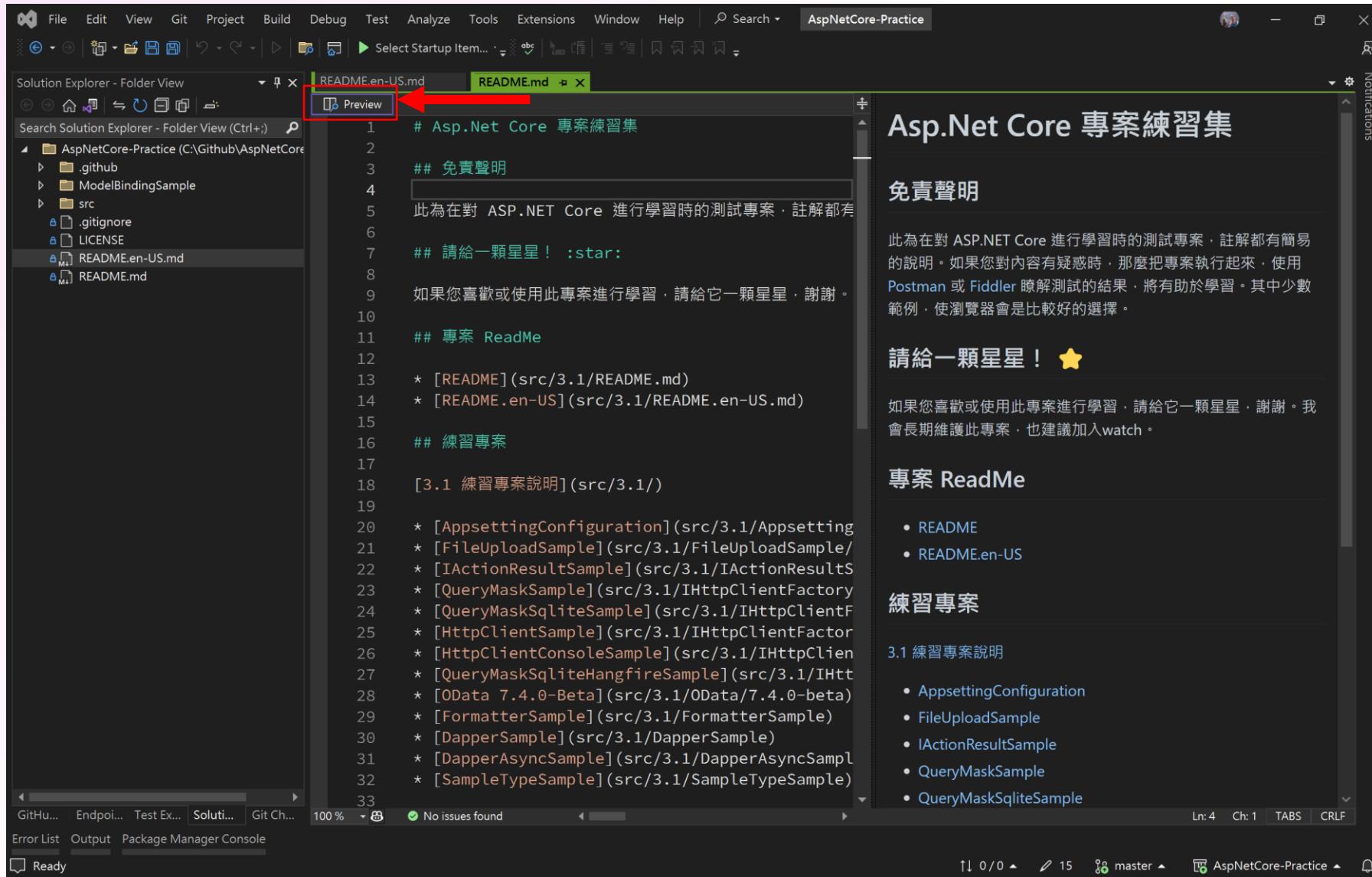
Ready

Select Repository ▾

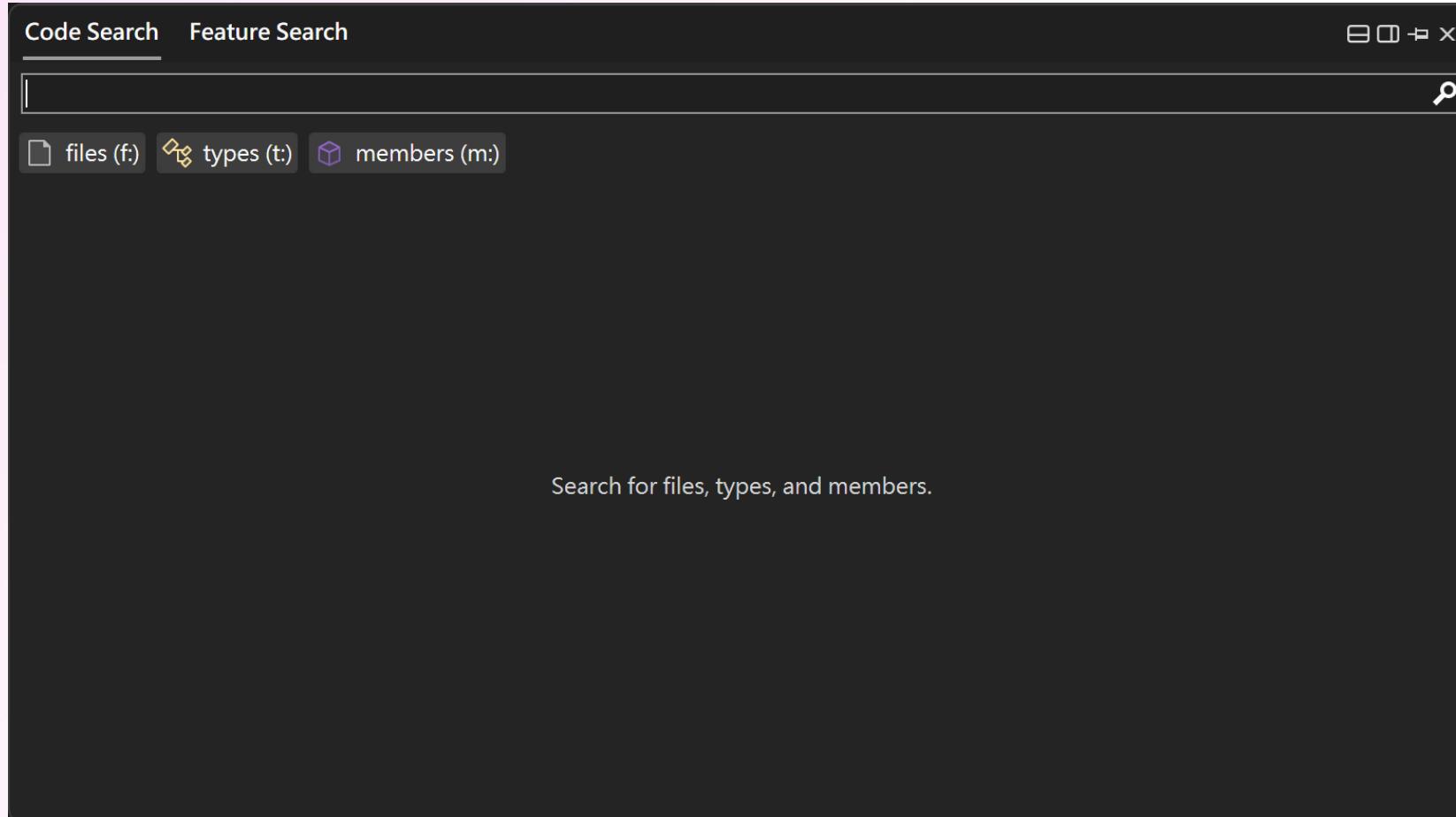
What's New?



Markdown

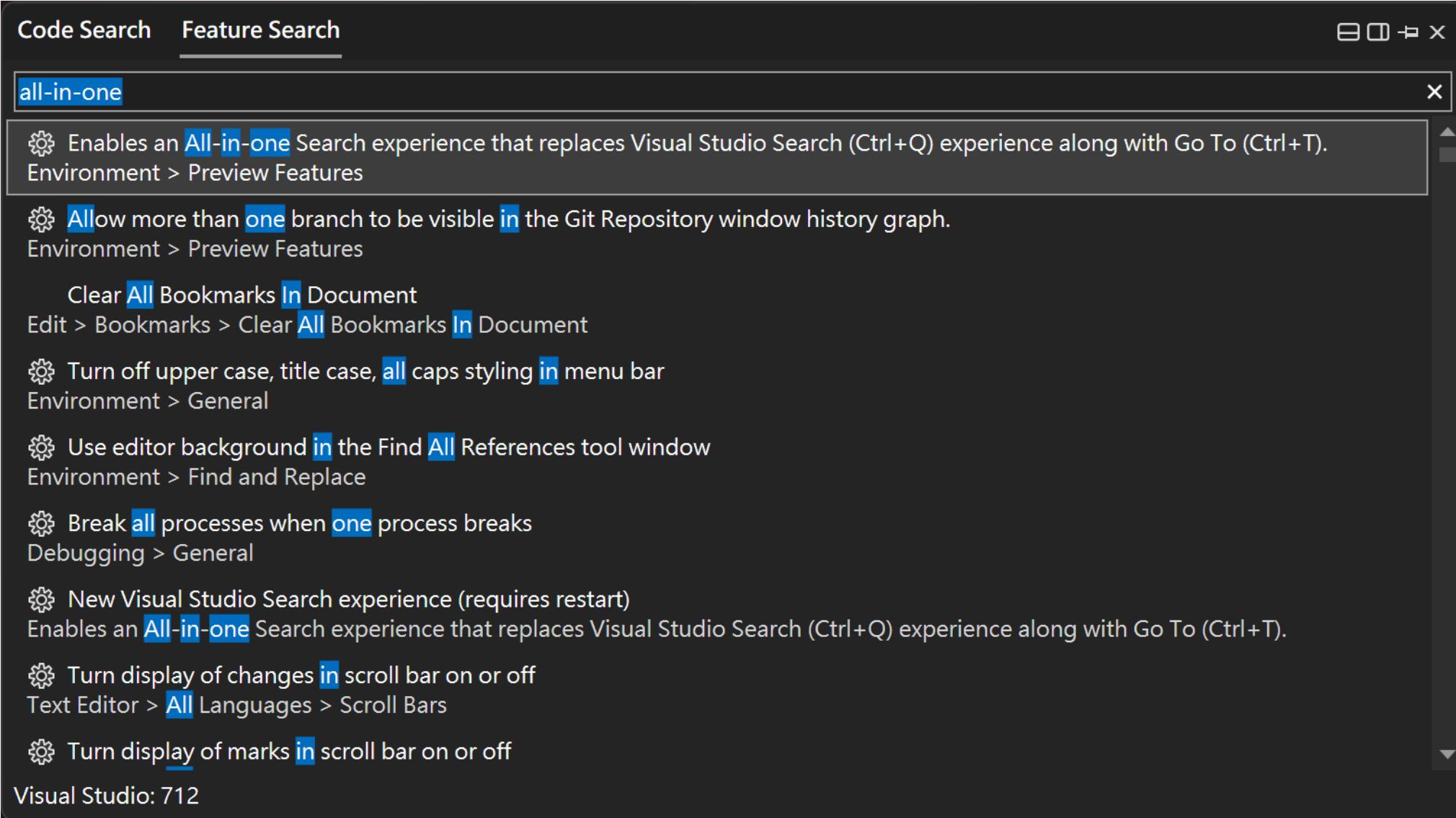


All-in-one Search



- Ctrl + T
- Ctrl + Q

All-in-one Search



The screenshot shows the 'Preview Features' window in Visual Studio. The search bar at the top has 'all-in-one' typed into it. Below the search bar, there is a list of features:

- Enables an All-in-one Search experience that replaces Visual Studio Search (Ctrl+Q) experience along with Go To (Ctrl+T).**
Environment > Preview Features
- Allow more than one branch to be visible in the Git Repository window history graph.**
Environment > Preview Features
- Clear All Bookmarks In Document**
Edit > Bookmarks > Clear All Bookmarks In Document
- Turn off upper case, title case, all caps styling in menu bar**
Environment > General
- Use editor background in the Find All References tool window**
Environment > Find and Replace
- Break all processes when one process breaks**
Debugging > General
- New Visual Studio Search experience (requires restart)**
Enables an All-in-one Search experience that replaces Visual Studio Search (Ctrl+Q) experience along with Go To (Ctrl+T).
- Turn display of changes in scroll bar on or off**
Text Editor > All Languages > Scroll Bars
- Turn display of marks in scroll bar on or off**

At the bottom of the window, it says 'Visual Studio: 712'.

Brace Pair Colorization

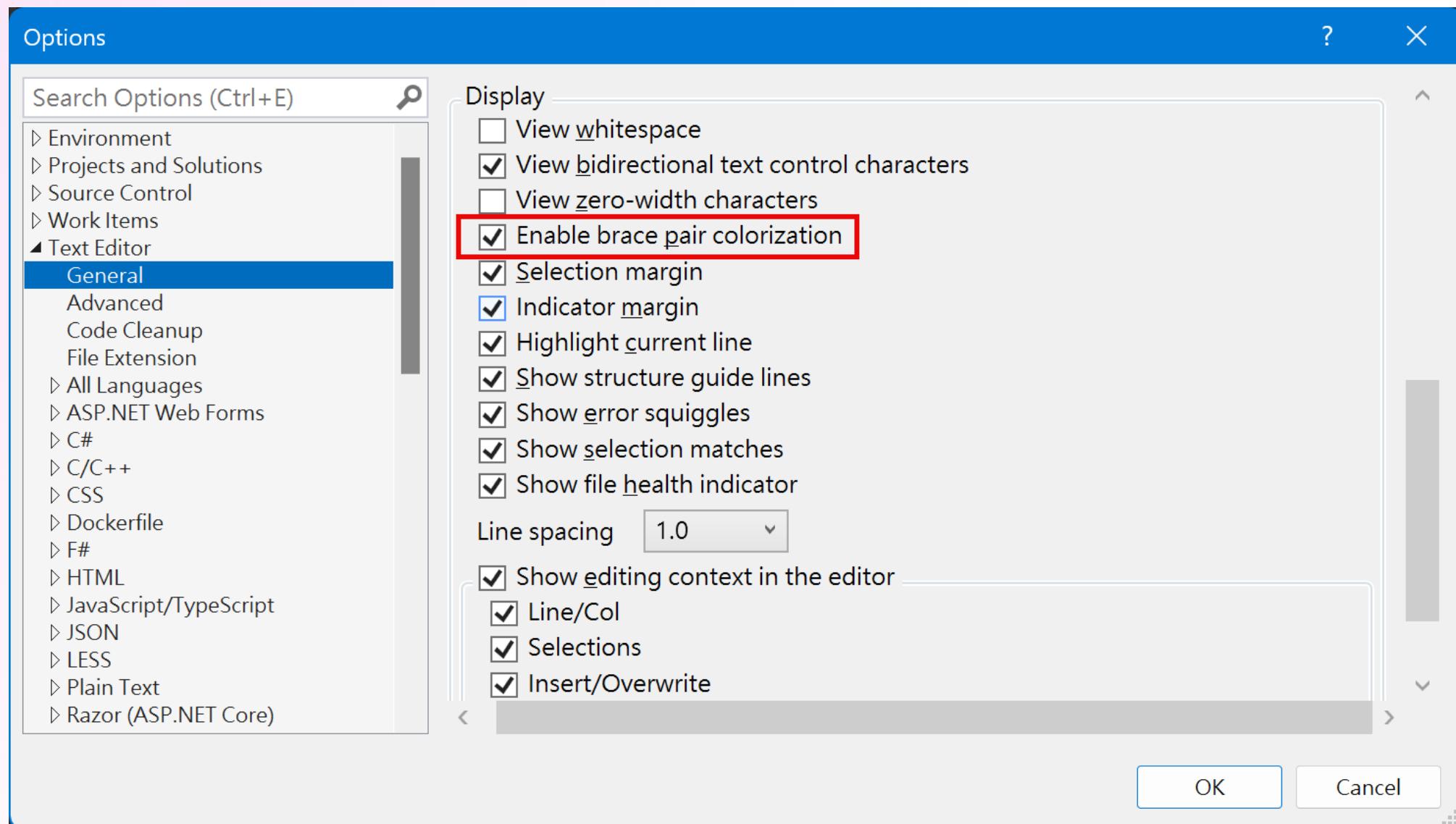
```
[HttpPost("{id}")]
0 references
public async Task<IActionResult> PutProduct(int id, Product product)
{
    if (id != product.ProductId)
    {
        return BadRequest();
    }

    _context.Entry(product).State = EntityState.Modified;

    try
    {
        await _context.SaveChangesAsync();
    }
    catch (DbUpdateConcurrencyException)
    {
        if (!ProductExists(id))
        {
            return NotFound();
        }
        else
        {
            throw;
        }
    }

    return NoContent();
}
```

Brace Pair Colorization



狀況題

Program.cs ✘ X

C# consoleApp

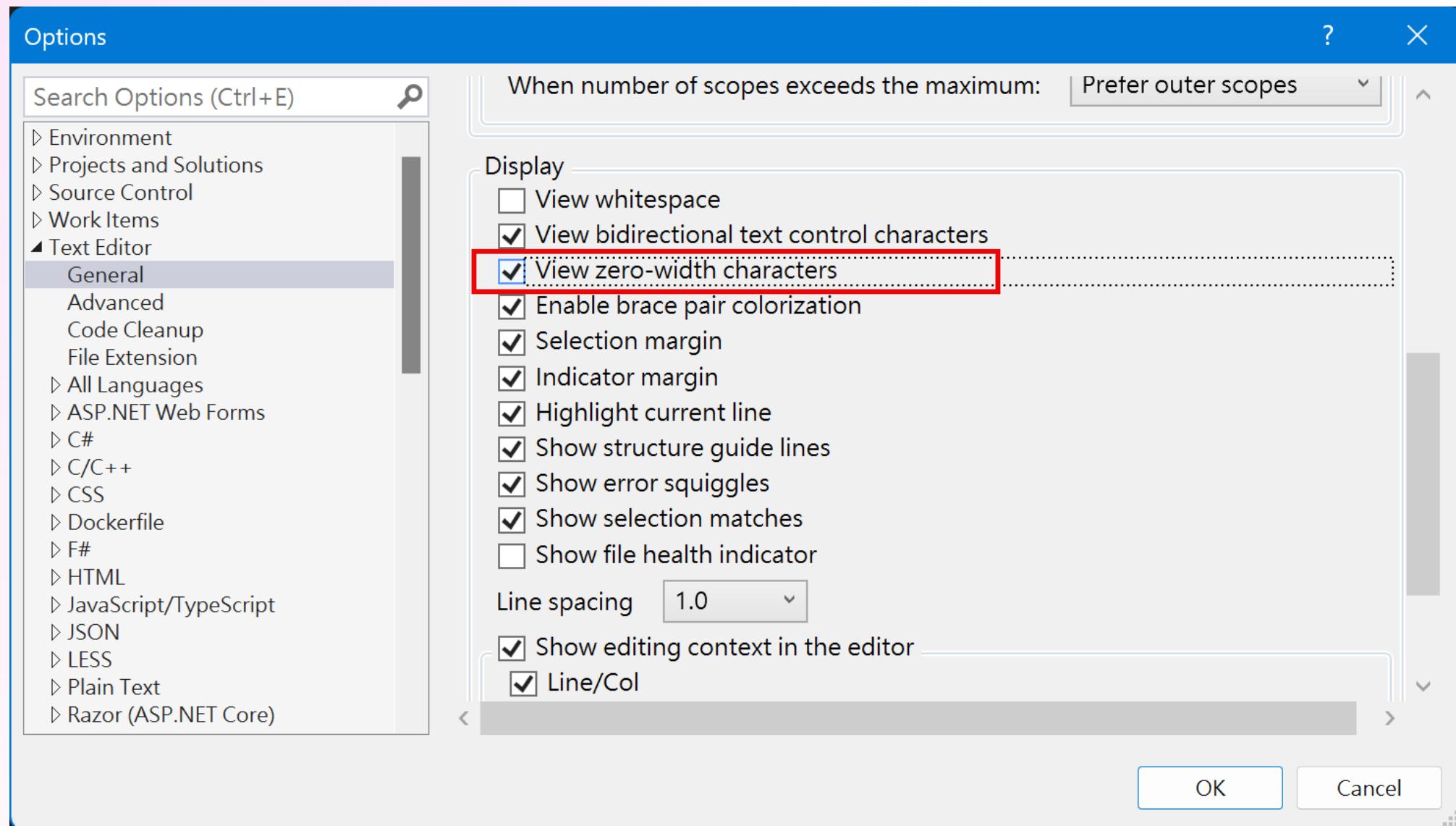
```
{ 1 // See https://aka.ms/new-console-template for more information
 2 Console.WriteLine("Hi" == "Hi");
 3 Console.WriteLine("Hi" == "Hi");
 4
```

Microsoft Visual Studio Debug X + | ▾

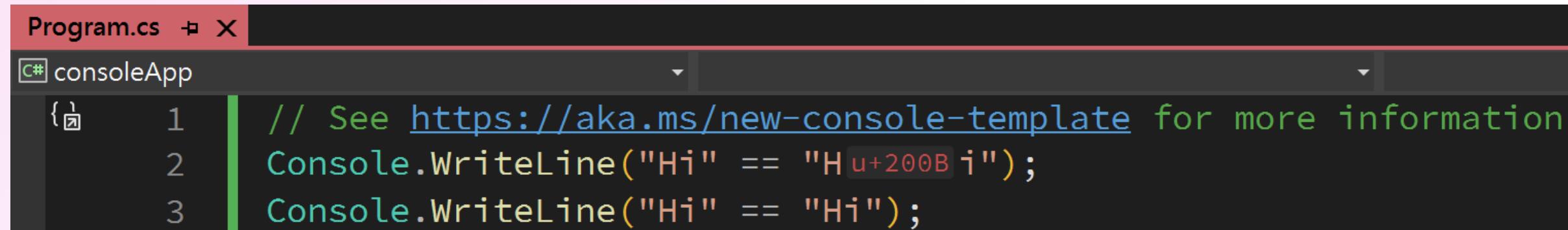
False
True



zero width characters (好功能)



zero width characters

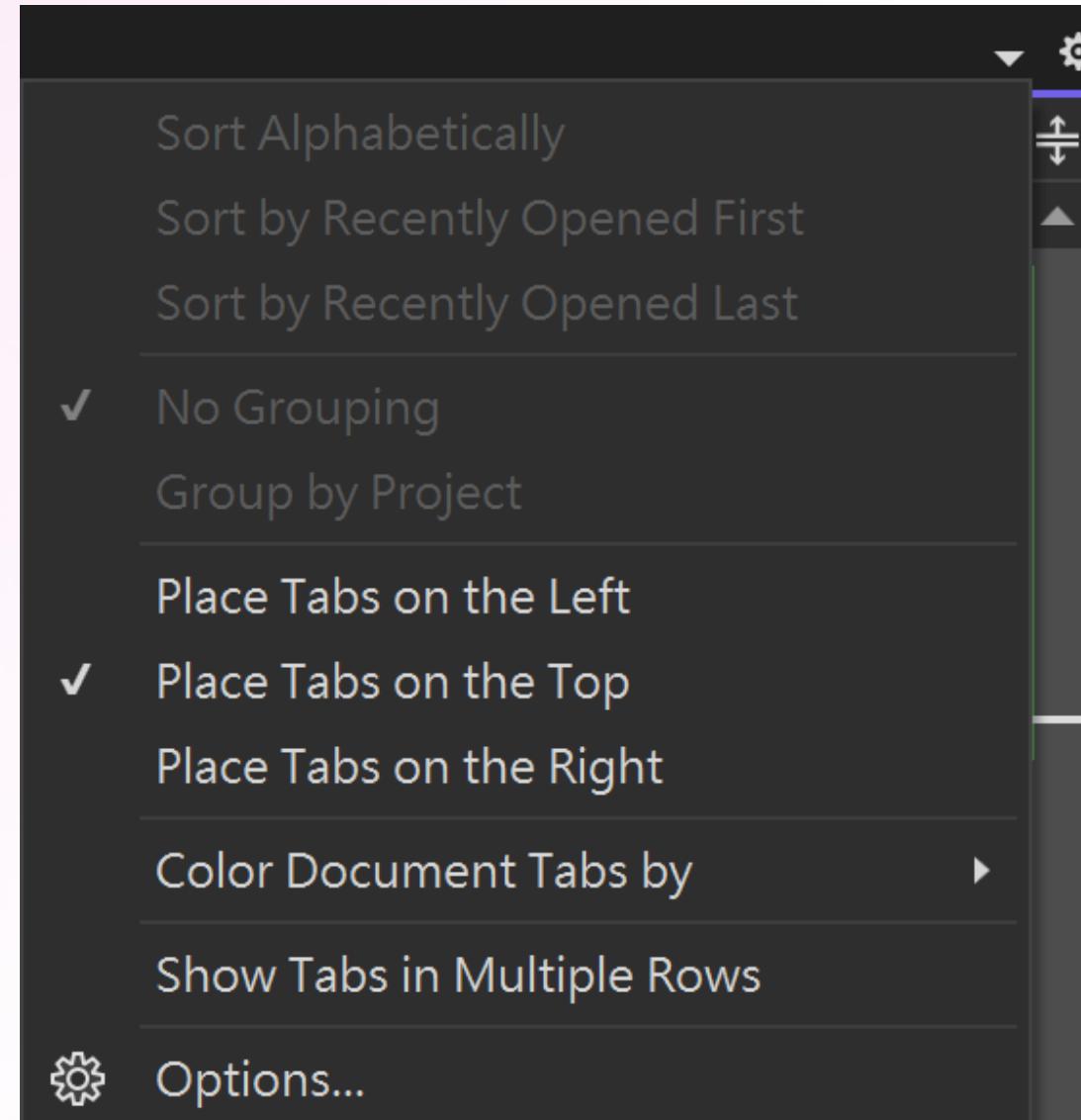


A screenshot of a C# console application window titled "Program.cs". The code contains three lines of C# code:

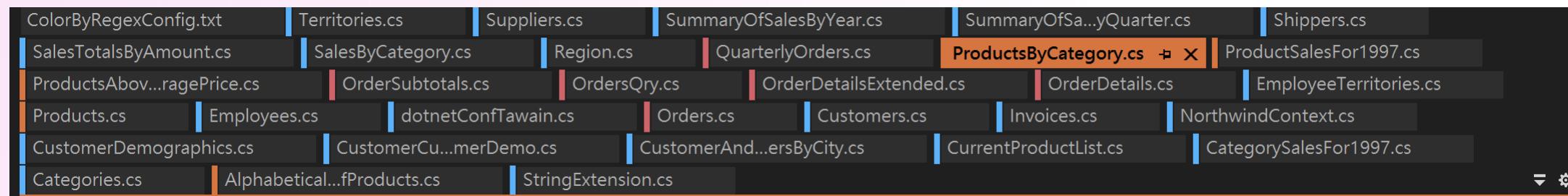
```
{\n1 // See https://aka.ms/new-console-template for more information\n2 Console.WriteLine("Hi" == "H\u200B i");\n3 Console.WriteLine("Hi" == "Hi");
```

The character at index 5 of the string "Hi" in the second line is a zero-width space (U+200B), which is highlighted with a red box. The strings "H\u200B i" and "Hi" are compared using the equality operator ==.

Tabs



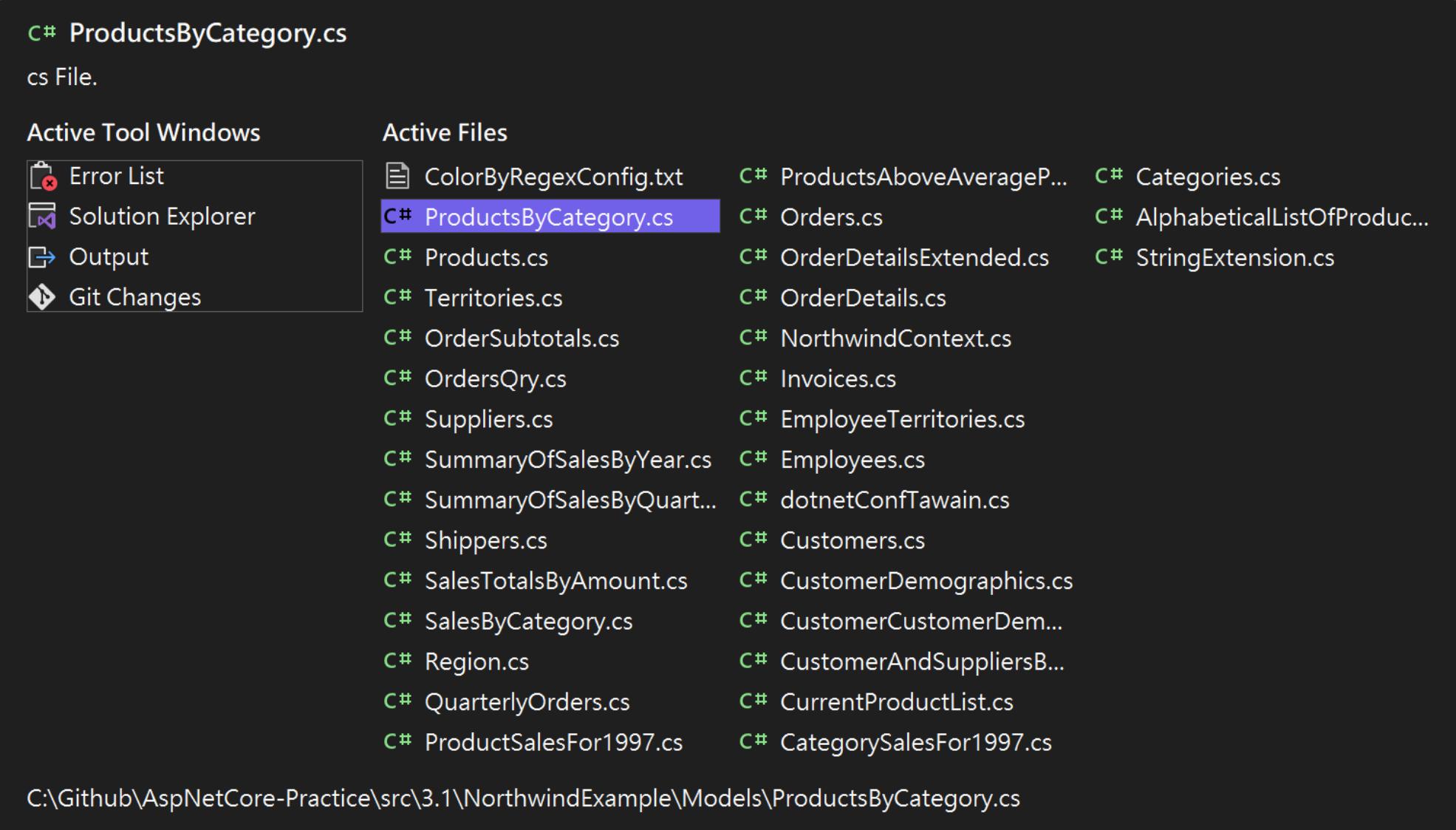
Tab by Regex



^.*Order.*\$

^.*Products.*\$

Ctrl + Tab



The screenshot shows a Visual Studio interface with a dark theme. In the top left, there's a message: "C# ProductsByCategory.cs cs File.". Below it, the "Active Tool Windows" pane lists "Error List", "Solution Explorer" (which is highlighted with a blue selection bar), "Output", and "Git Changes". To the right, the "Active Files" pane lists numerous C# files from the Northwind database project, including "ColorByRegexConfig.txt", "ProductsAboveAverageP...", "Categories.cs", "AlphabeticalListOfProdu...", "StringExtension.cs", and many others. The file "ProductsByCategory.cs" is also listed in this pane. At the bottom, the full path "C:\Github\AspNetCore-Practice\src\3.1\NorthwindExample\Models\ProductsByCategory.cs" is visible.

C# ProductsByCategory.cs
cs File.

Active Tool Windows

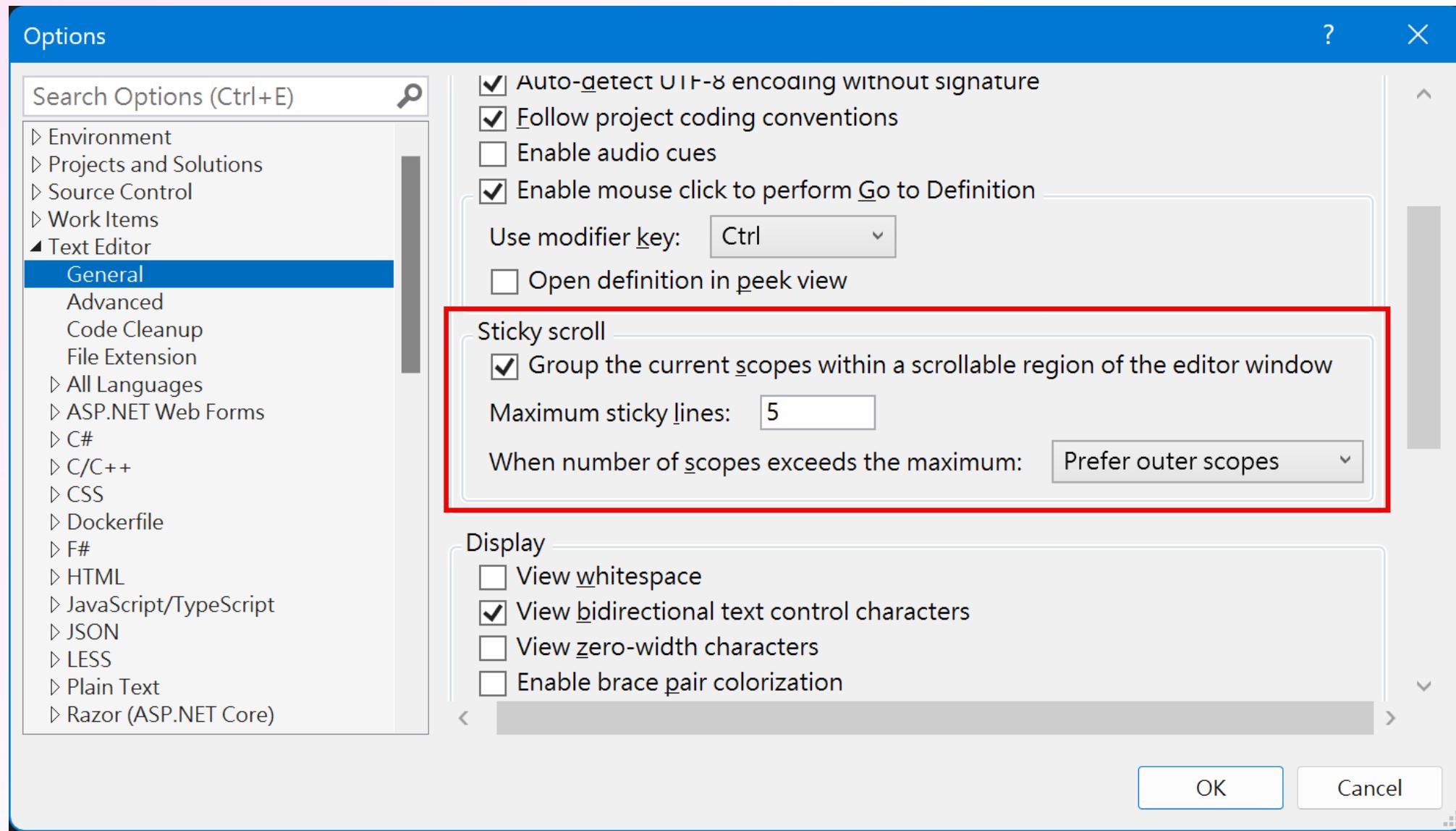
- Error List
- Solution Explorer
- Output
- Git Changes

Active Files

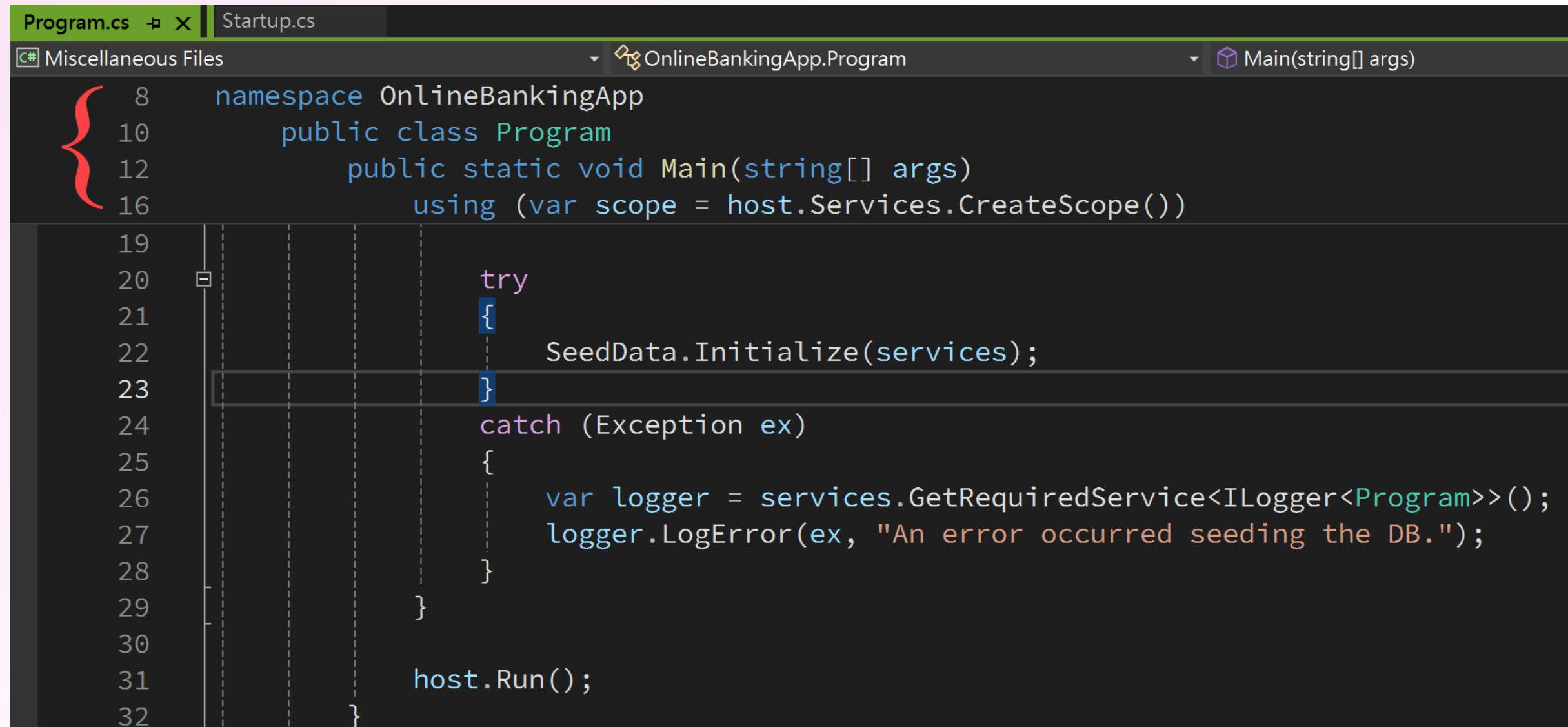
- ColorByRegexConfig.txt
- C# ProductsAboveAverageP...
- C# Categories.cs
- C# AlphabeticalListOfProdu...
- C# StringExtension.cs
- Orders.cs
- OrderDetailsExtended.cs
- OrderDetails.cs
- NorthwindContext.cs
- Invoices.cs
- EmployeeTerritories.cs
- Employees.cs
- dotnetConfTawain.cs
- Customers.cs
- CustomerDemographics.cs
- CustomerCustomerDem...
- CustomerAndSuppliersB...
- CurrentProductList.cs
- CategorySalesFor1997.cs
- Products.cs
- Territories.cs
- OrderSubtotals.cs
- OrdersQry.cs
- Suppliers.cs
- SummaryOfSalesByYear.cs
- SummaryOfSalesByQuart...
- Shippers.cs
- SalesTotalsByAmount.cs
- SalesByCategory.cs
- Region.cs
- QuarterlyOrders.cs
- ProductSalesFor1997.cs

C:\Github\AspNetCore-Practice\src\3.1\NorthwindExample\Models\ProductsByCategory.cs

Sticky Scroll



Sticky Scroll

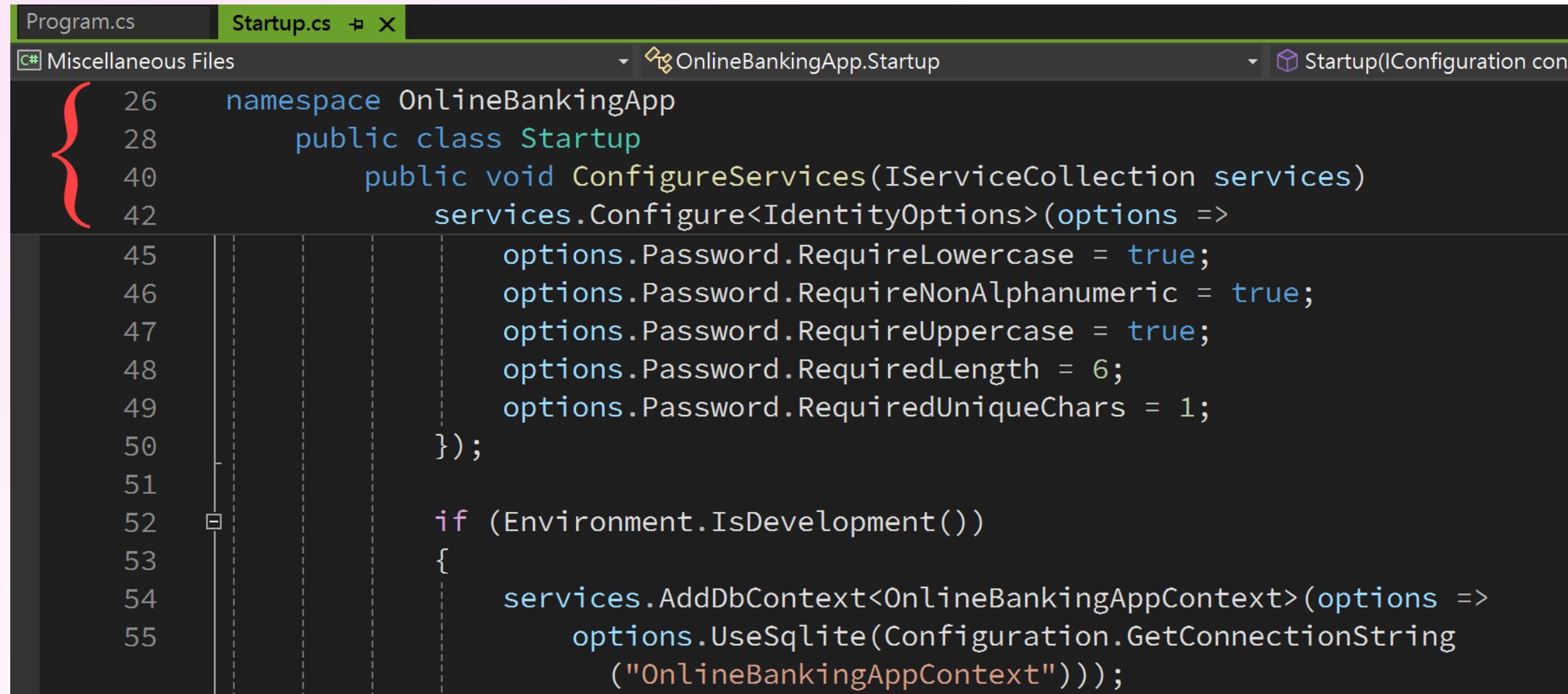


Program.cs ✘ X | Startup.cs

C# Miscellaneous Files OnlineBankingApp.Program Main(string[] args)

```
8  namespace OnlineBankingApp
10 public class Program
12     public static void Main(string[] args)
16         using (var scope = host.Services.CreateScope())
19
20         try
21             {
22                 SeedData.Initialize(services);
23             }
24         catch (Exception ex)
25         {
26             var logger = services.GetRequiredService<ILogger<Program>>();
27             logger.LogError(ex, "An error occurred seeding the DB.");
28         }
29
30
31         host.Run();
32     }
```

Sticky Scroll



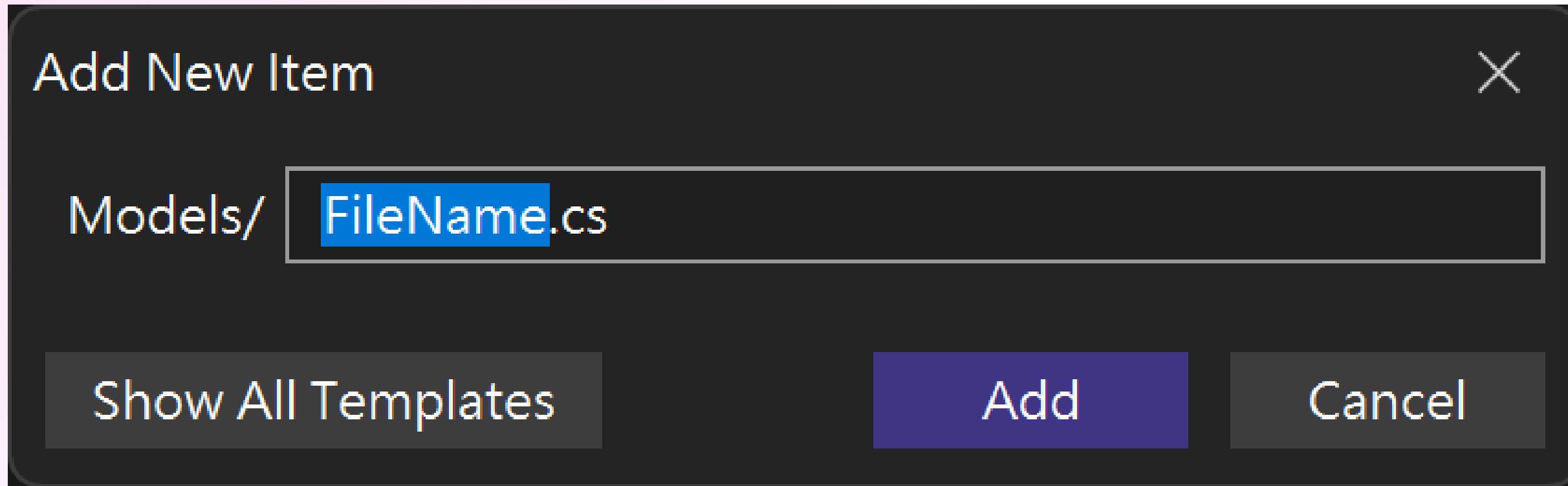
The screenshot shows a code editor interface with a dark theme. The top navigation bar has tabs for "Program.cs" and "Startup.cs" (which is currently selected), along with a close button. Below the tabs, there's a breadcrumb navigation bar showing the project structure: "Miscellaneous Files" → "OnlineBankingApp.Startup" → "Startup(IConfiguration con".

The main code editor area displays the "Startup.cs" file. The code is as follows:

```
26  namespace OnlineBankingApp
28      public class Startup
30          public void ConfigureServices(IServiceCollection services)
32              services.Configure<IdentityOptions>(options =>
33                  options.Password.RequireLowercase = true;
34                  options.Password.RequireNonAlphanumeric = true;
35                  options.Password.RequireUppercase = true;
36                  options.Password.RequiredLength = 6;
37                  options.Password.RequiredUniqueChars = 1;
38              });
39
40              if (Environment.IsDevelopment())
41              {
42                  services.AddDbContext<OnlineBankingAppContext>(options =>
43                      options.UseSqlite(Configuration.GetConnectionString
44                          ("OnlineBankingAppContext")));
45              }
46
47          }
48
49      }
50
51      public void Configure(IApplicationBuilder app, IWebHostEnvironment env)
52      {
53          if (env.IsDevelopment())
54          {
55              app.UseDeveloperExceptionPage();
56          }
57          else
58          {
59              app.UseExceptionHandler("/Error");
60              app.UseHsts();
61          }
62
63          app.UseHttpsRedirection();
64          app.UseStaticFiles();
65
66          app.UseRouting();
67
68          app.UseAuthorization();
69
70          app.UseEndpoints(endpoints =>
71              endpoints.MapControllerRoute(
72                  name: "default",
73                  pattern: "{controller=Home}/{action=Index}/{id?}");
74          );
75      }
76  }
```

A red vertical brace is placed on the left side of the code, spanning from line 26 to line 50, highlighting the configuration of IdentityOptions. The code editor features horizontal and vertical scroll bars, and the background is dark with syntax highlighting.

Quick Add (Ctrl + Shift + A)



可含目錄階層

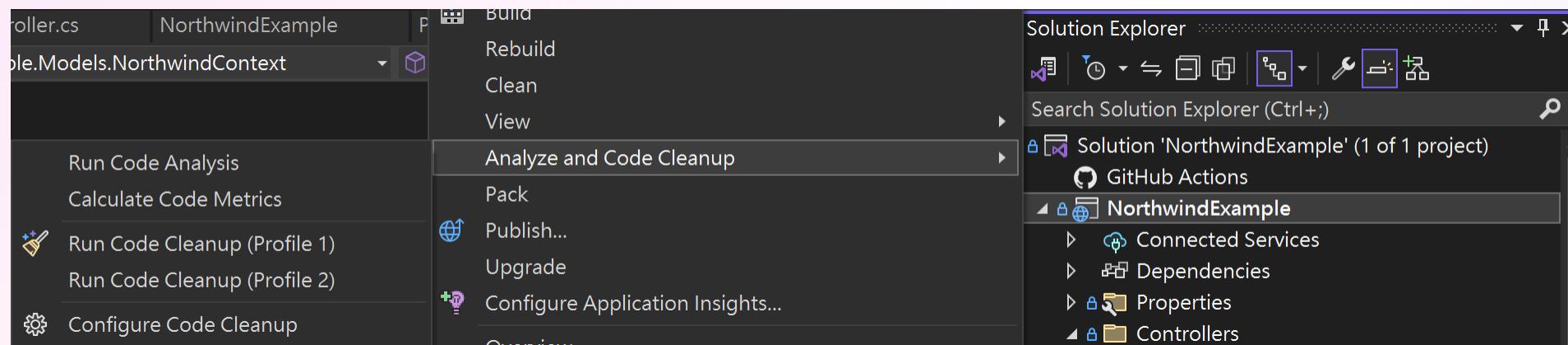
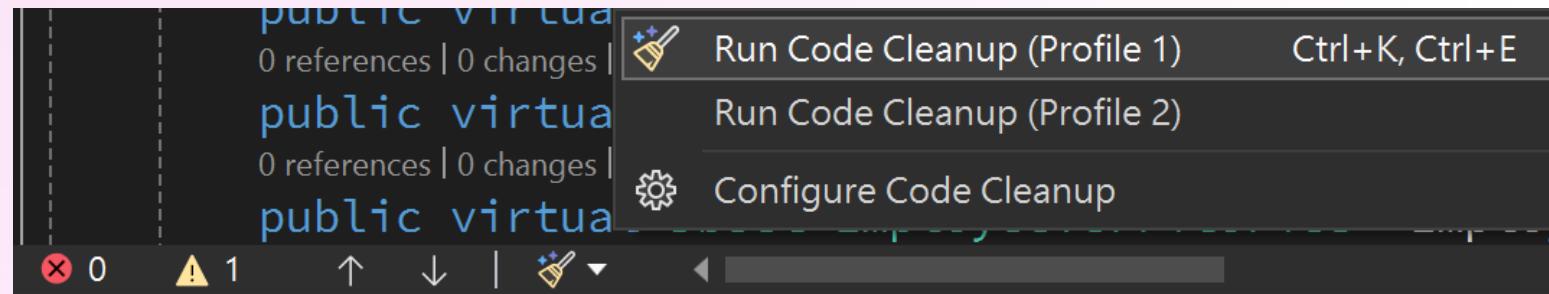
Compare with Solution Explorer

The screenshot shows a Visual Studio interface comparing two C# files: `AcceptedAtActionResult.cs` and `AcceptedAtRouteResult.cs`. The left pane displays a list of files under the `Microsoft.AspNetCore.Mvc` namespace, with `AcceptedAtActionResult.cs` highlighted. A context menu is open over this file, showing options like Open, Run Tests, and Compare Selected. The right pane shows the code editor with the `Compare` tool active, displaying the differences between the two selected files. The status bar at the bottom indicates 9 changes, -24, and +20.

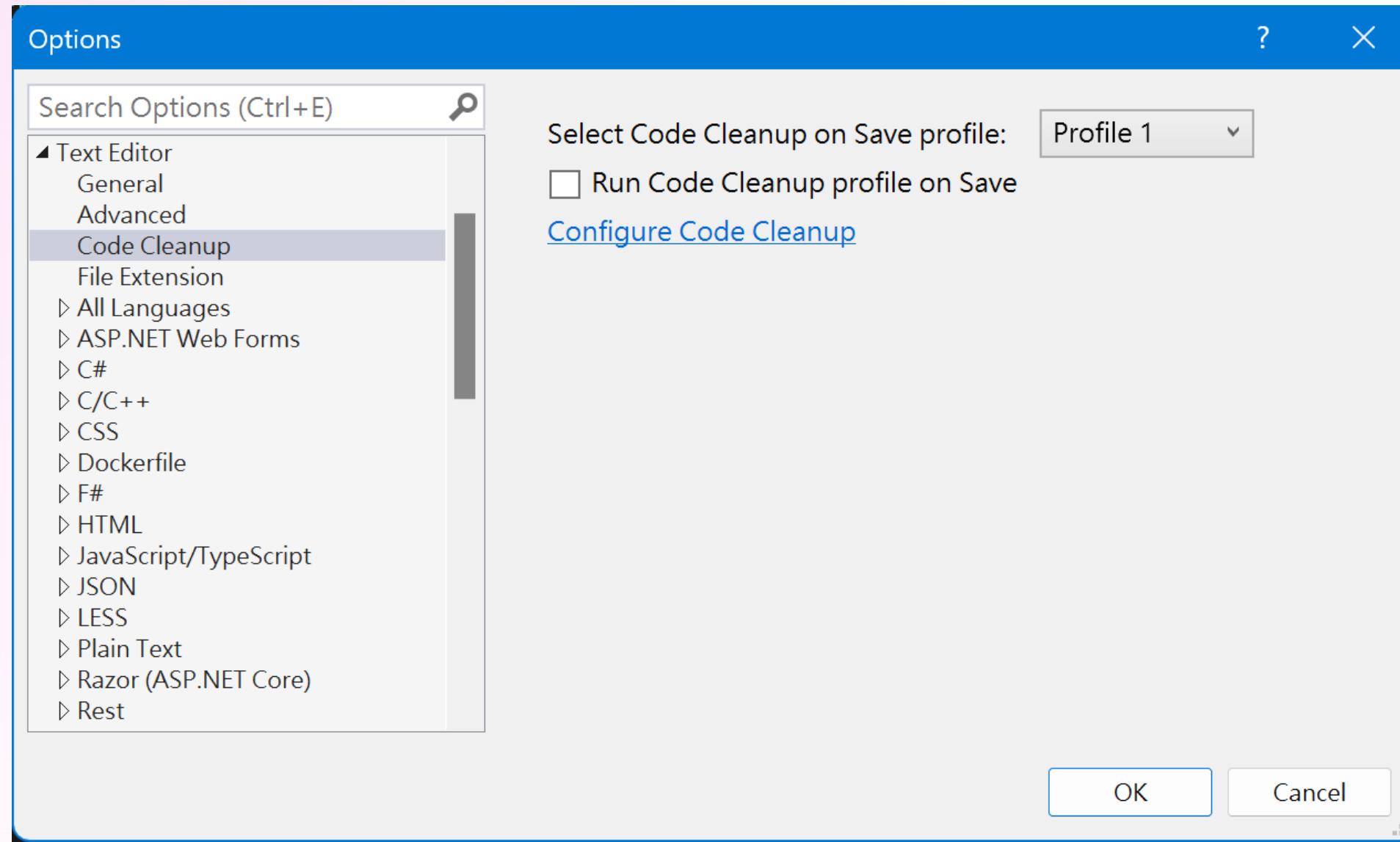
```
// Licensed to the .NET Foundation under  
// The .NET Foundation licenses this file  
// in the License.md file.  
// You may obtain a copy of the License at  
// http://dotnetfoundation.org/licenses/LICENSE.txt  
// When you distribute this code, you must include the full license and not  
// change, modify, or remove the reference in the header.  
// When you redistribute modified versions of this file, you must  
// include history information in each modified file as required by  
// the .NET Foundation License.  
// You must not distribute this file in a way that suggests  
// you are the original author.  
using Microsoft.AspNetCore.Http;  
using Microsoft.AspNetCore.Mvc.Core;  
using Microsoft.AspNetCore.Mvc.Infrastructure;  
using Microsoft.AspNetCore.Mvc.Routing;  
using Microsoft.AspNetCore.Routing;  
using Microsoft.Extensions.DependencyInjection;  
  
namespace Microsoft.AspNetCore.Mvc;  
  
/// <summary>  
/// An <see cref="ActionResult"/> that returns the response  
/// with the specified status code.  
/// </summary>  
[DefaultStatusCode(DefaultStatusCode)]  
  
public class AcceptedAtActionResult : ObjectResult  
{  
    private const int DefaultStatusCode = 200;  
  
    /// <summary>  
    /// Initializes a new instance of the  
    /// provided.  
    /// </summary>  
    /// <param name="actionName">The name  
    /// <param name="controllerName">The name  
    /// <param name="routeValues">The route  
    /// <param name="value">The value to  
    /// public AcceptedAtActionResult(  
        string? actionName,  
        string? controllerName,  
        object? value,  
        Dictionary<string, object> routeValues  
    )  
    {  
        if (actionName != null)  
            StatusCode = 201;  
        else if (controllerName != null)  
            StatusCode = 202;  
        else if (value != null)  
            StatusCode = 203;  
        else if (routeValues != null)  
            StatusCode = 204;  
        else  
            StatusCode = 205;  
    }  
}
```

```
// Licensed to the .NET Foundation under  
// The .NET Foundation licenses this file  
// in the License.md file.  
// You may obtain a copy of the License at  
// http://dotnetfoundation.org/licenses/LICENSE.txt  
// When you distribute this code, you must include the full license and not  
// change, modify, or remove the reference in the header.  
using Microsoft.AspNetCore.Http;  
using Microsoft.AspNetCore.Mvc.Core;  
using Microsoft.AspNetCore.Mvc.Infrastructure;  
using Microsoft.AspNetCore.Mvc.Routing;  
using Microsoft.AspNetCore.Routing;  
using Microsoft.Extensions.DependencyInjection;  
  
namespace Microsoft.AspNetCore.Mvc;  
  
/// <summary>  
/// An <see cref="ActionResult"/> that returns the response  
/// with the specified status code.  
/// </summary>  
[DefaultStatusCode(DefaultStatusCode)]  
  
public class AcceptedAtRouteResult : ObjectResult  
{  
    private const int DefaultStatusCode = 200;  
  
    /// <summary>  
    /// Initializes a new instance of the  
    /// provided.  
    /// </summary>  
    /// <param name="routeValues">The route  
    /// <param name="value">The value to  
    /// public AcceptedAtRouteResult(  
        object? value,  
        Dictionary<string, object> routeValues  
    )  
    {  
        if (value != null)  
            StatusCode = 201;  
        else if (routeValues != null)  
            StatusCode = 202;  
        else  
            StatusCode = 203;  
    }  
}
```

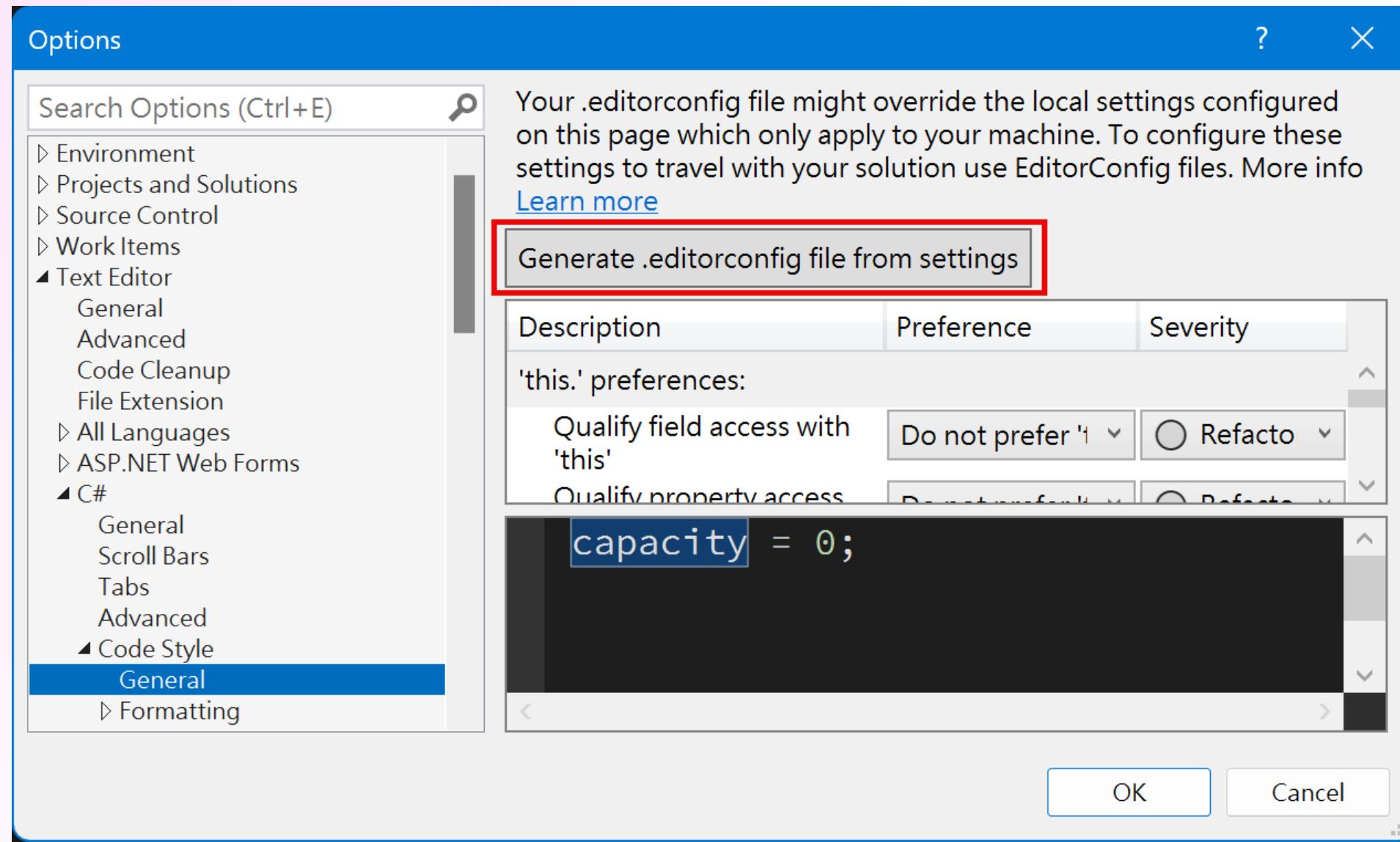
Code Cleanup (Ctrl+K, Ctrl+E)



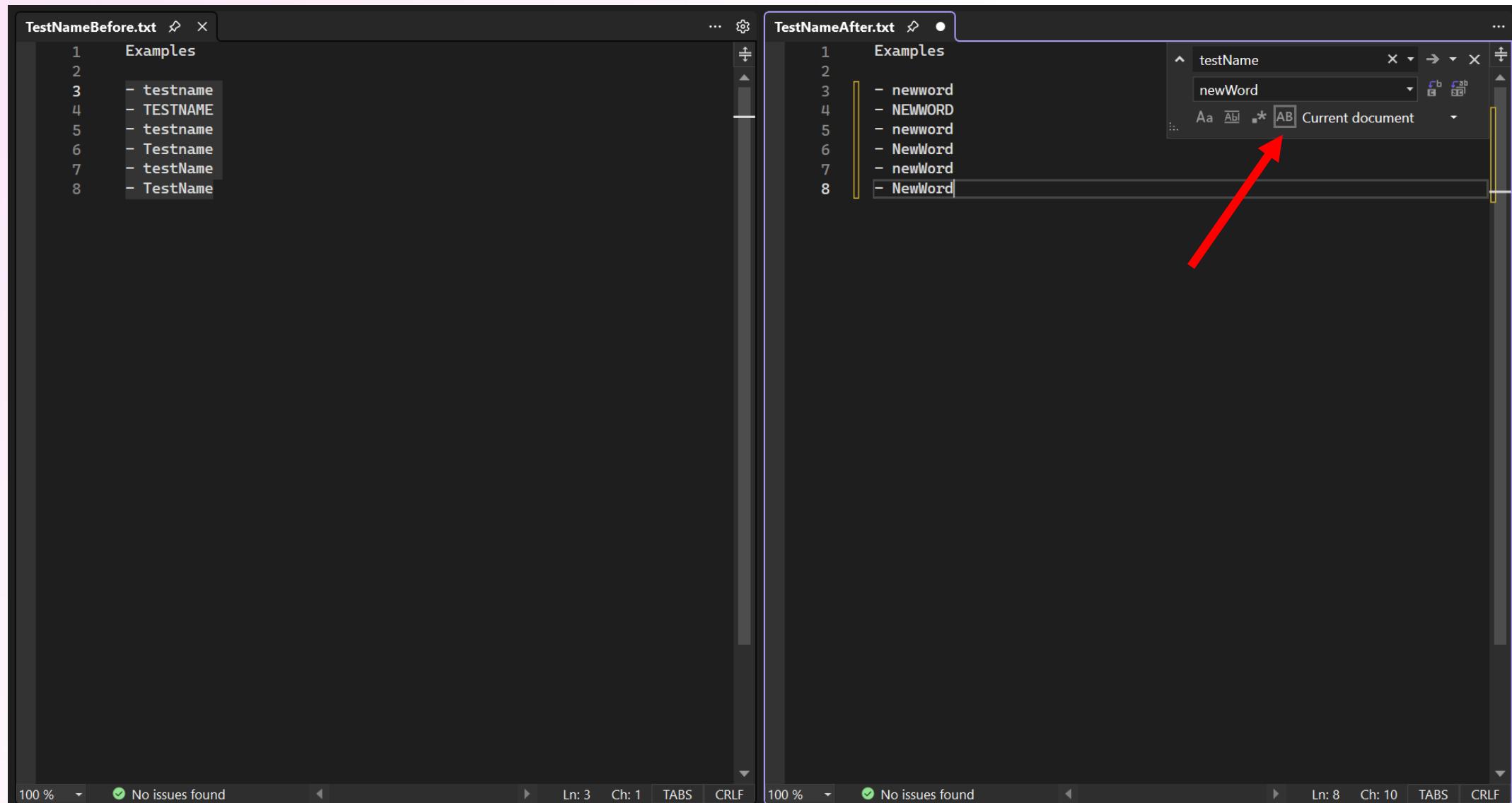
Code Cleanup (Ctrl+K, Ctrl+E)



Generate .editorconfig file



大小寫保留尋找和取代



The screenshot shows two side-by-side text editor windows demonstrating a search and replace operation.

Left Window (TestNameBefore.txt):

```
1 Examples
2
3 - testname
4 - TESTNAME
5 - testname
6 - Testname
7 - testName
8 - TestName
```

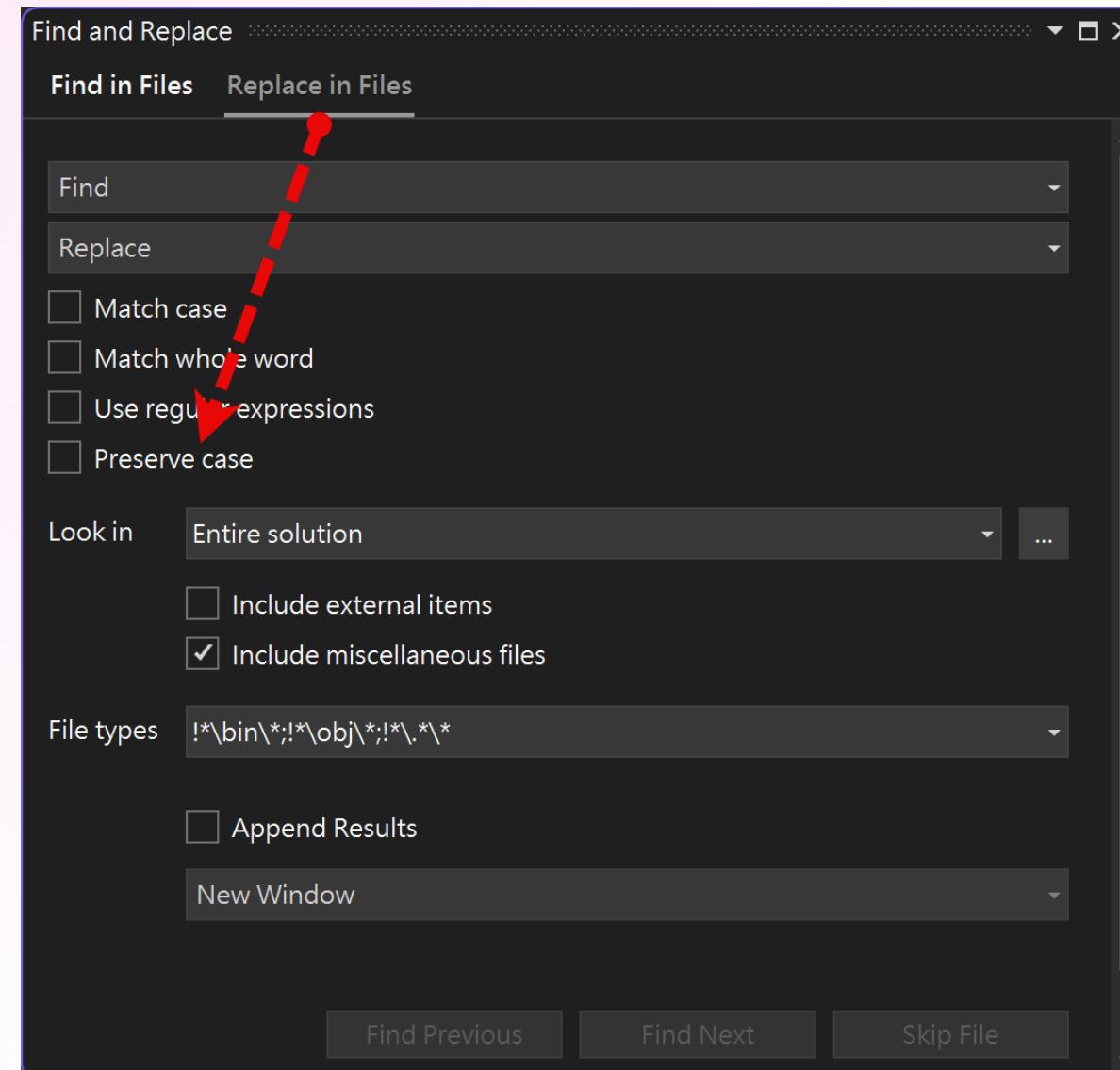
Right Window (TestNameAfter.txt):

```
1 Examples
2
3 - newword
4 - NEWWORD
5 - newword
6 - NewWord
7 - newWord
8 - NewWord
```

A red arrow points to the "Current document" dropdown in the search and replace dialog of the right window, indicating the scope of the replacement.

Both windows show the status bar at the bottom with "No issues found".

大小寫保留尋找和取代



GitHub Examples (Alt + O)

```
services.AddScoped<NorthwindContext>();
```

```
services.AddC
```

ⓘ (extension) IServiceCollection IServiceCollection.AddScoped<NorthwindContext>() (+ 1 overload)
Adds a scoped service of the type specified in NorthwindContext to the specified IServiceCollection.

Returns:

A reference to this instance after the operation has completed.

This method ge

ences | 0 changes | 0 autho

ic void Config

GitHub Examples and Documentation (Alt+O)

GitHub Examples (Alt + O)



The screenshot shows the GitHub Examples extension interface for Visual Studio. The title bar says "AddScoped examples". Below it, a section titled "IServiceCollection.AddScoped Method" shows a method overload from Microsoft.Extensions.DependencyInjection.IServiceCollecti... and a GitHub example. The example code for "Example 1" is:

```
public static IServiceCollection AddHeiCaptchaExtension(this IServiceCollection services)
{
    if (services == null)
    {
        throw new ArgumentNullException(nameof(services));
    }

    services.AddScoped<SecurityCodeHelper>();
    return services;
}
```

The file path shown is "gebiWangshushu/Hei.Captcha/HeiCaptchaExtension.cs". Below this, another example is shown:

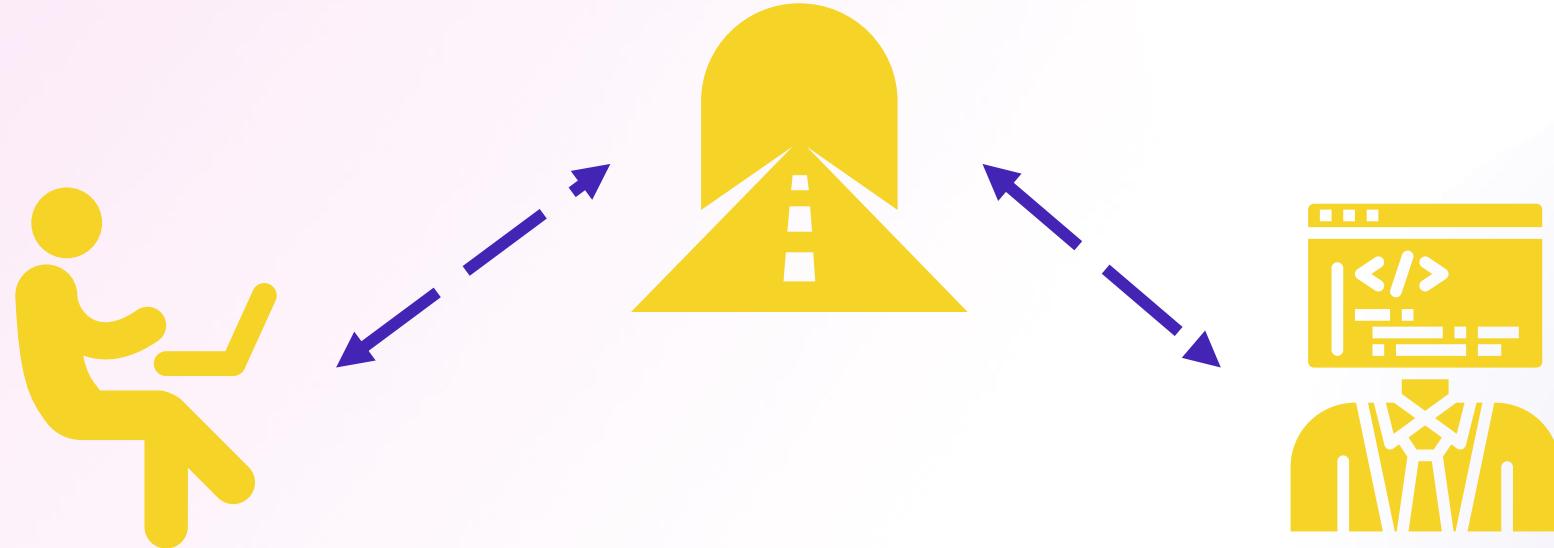
```
public ValidTest()
{
    var services = new ServiceCollection();
    services.AddScoped< IRepositorySample>();
    services.EnableAop(x =>
    {
        x.EnableParameterAspect();
    });
    _serviceProvider = services.BuildSe...
```

狀況題

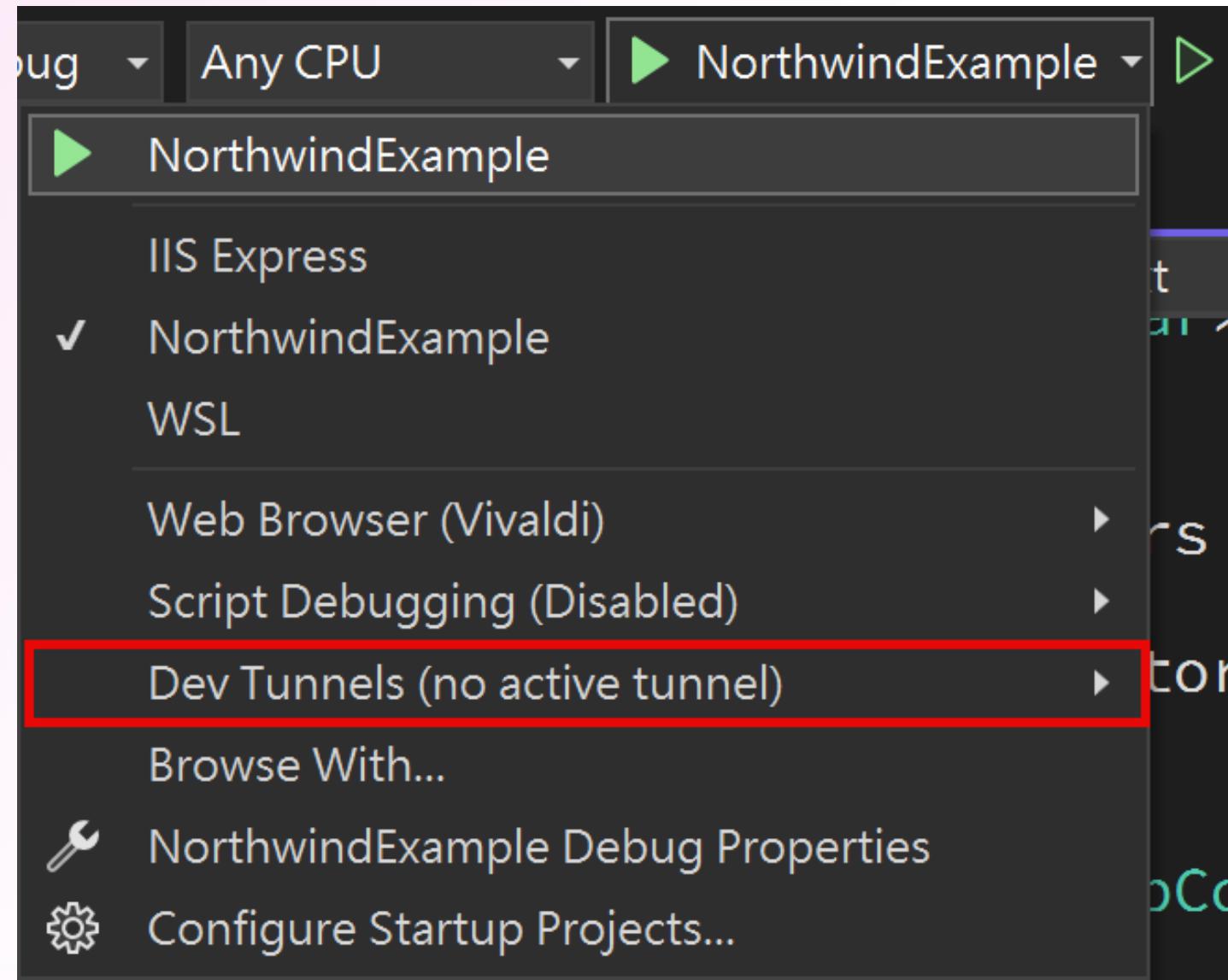
應用程式的使用者，可否直接連線至你**開發機**進行測試？



Dev tunnel



Dev tunnel



Tunnel Type

Type	Desc
Temporary	每次啟動 Visual Studio 時，暫存通道都會取得新的 URL。
Persistent	每次啟動 Visual Studio 時，持續性通道都會取得相同的 URL。

Access

Access	Desc
Private	只有你能連線
Organizational	同一組織的帳戶可以連線
Public	公開連線

Dev tunnel

Dev Tunnels									
Active	Name	Status	Tunnel Type	Access	Tunnel URL	Account	Created	Remove	Manage Tunnel
✓	dotnetconf2023Taiwan	Stopped	Temporary	Public	Tunnel not started		12/5/2023 3:39 PM	×	⚙️ 0 ports used

F5 or Ctrl + F5

Dev Tunnels									
Active	Name	Status	Tunnel Type	Access	Tunnel URL	Account	Created	Remove	Manage Tunnel
✓	dotnetconf2023Taiwan	Started	Temporary	Public	View		12/5/2023 3:39 PM	×	⚙️ 1 ports used

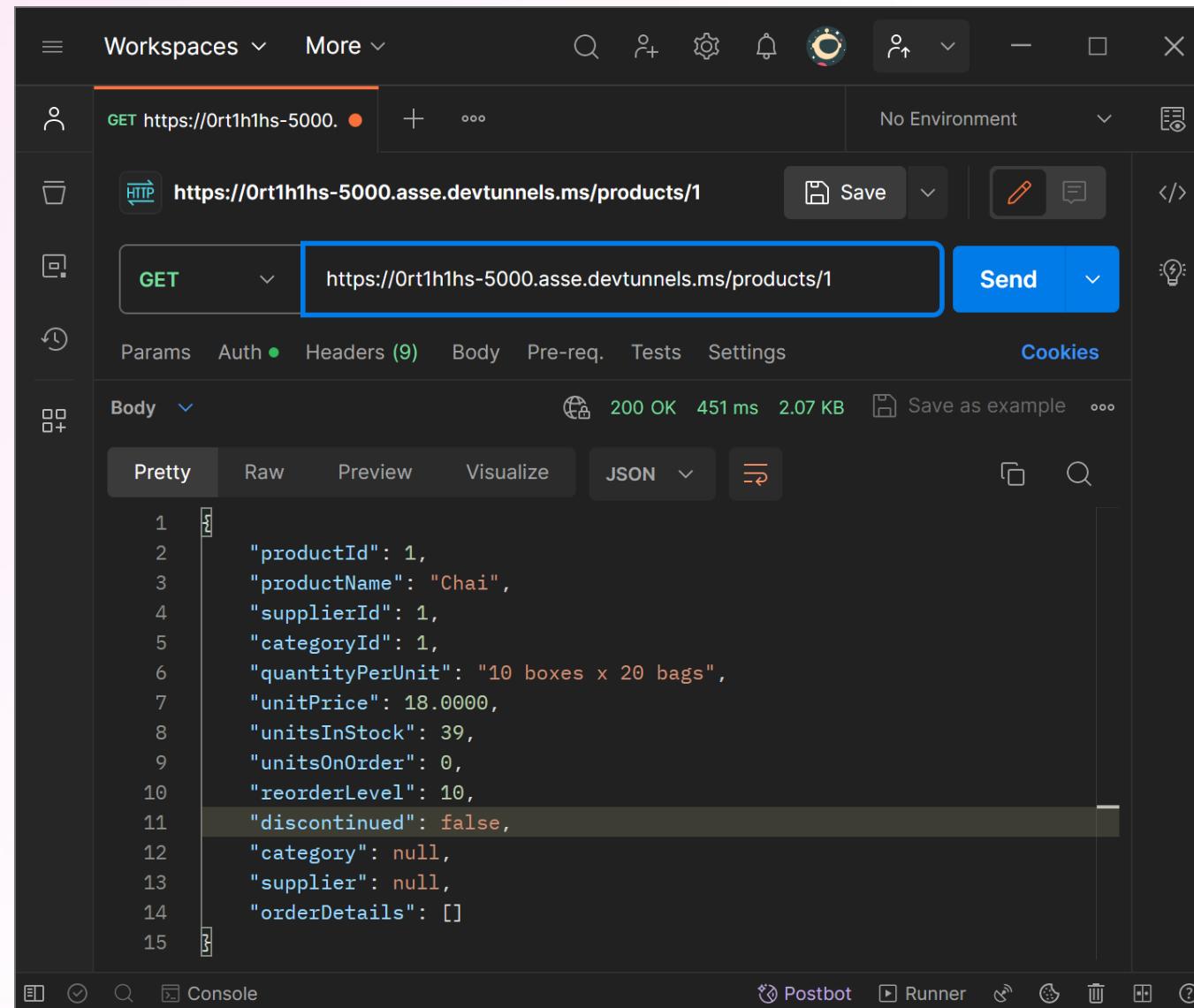
Dev tunnels limits

Dev tunnels limits

The following limits apply to dev tunnels  . The limits reset monthly.

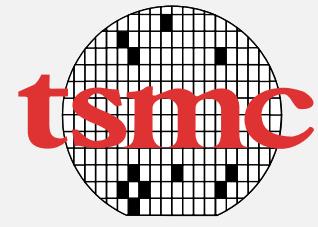
Resource	Limit
Bandwidth	2 GB per user
Tunnels	5 per user
Active connections	20 per port
Ports	10 per tunnel
HTTP request rate	1500/min per port
Data transfer rate	Up to 20 MB/s per tunnel
Max web-forwarding HTTP request body size	16 MB

Dev tunnel

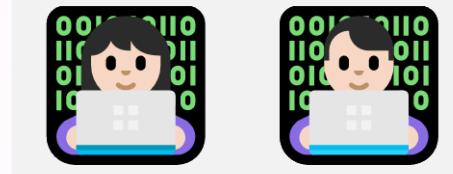


特別感謝

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以及各位參與活動的你們