

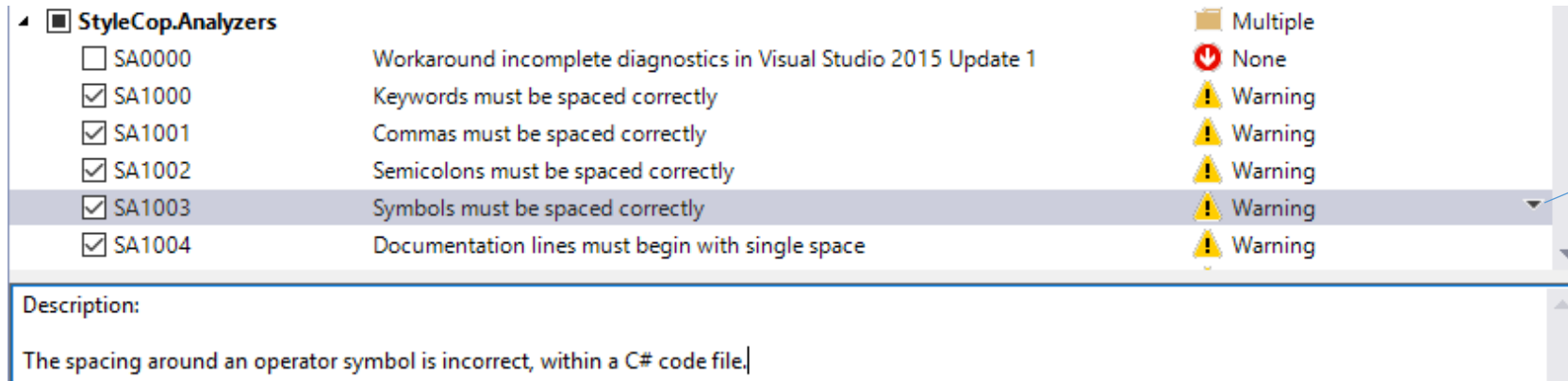
Configuring StyleCop

Cpt S 321

Washington State University

VS: Let's see what is our current configuration

- Right click on the **project** -> Properties -> Code Analysis
- Select the “Extended Design Guidelines Rules” (that's a good start!)
- Click on Open to see what rules are selected:



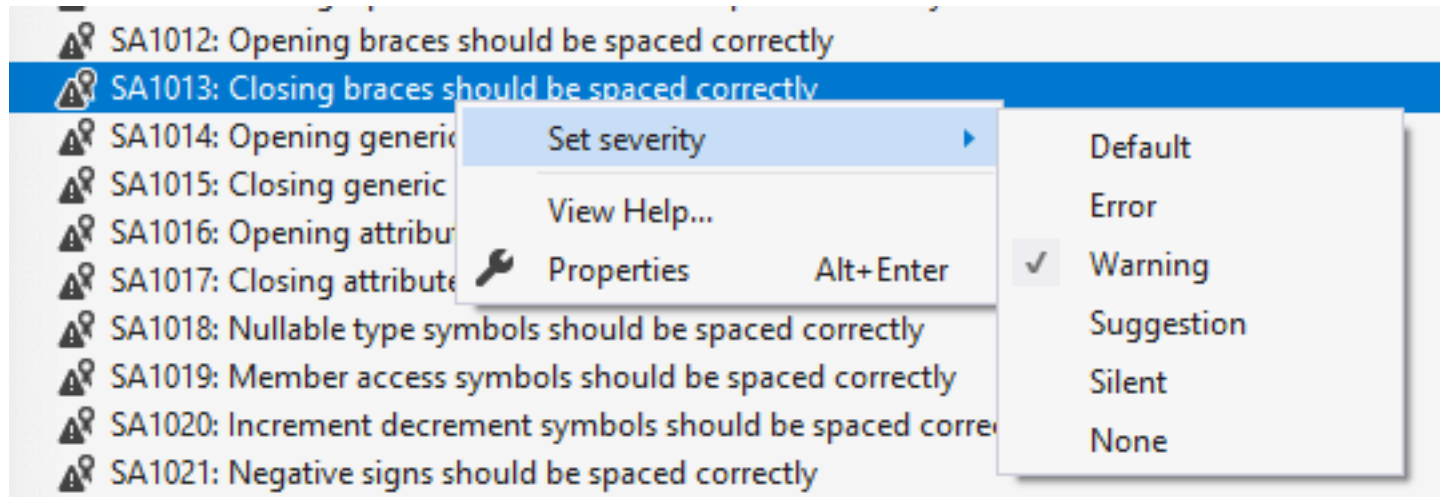
- Warning
- Error
- None
- Info
- Hidden
- Inherit

Don't forget to commit that one with your HWs!

- Any change will result in the creation of a new rule set file that will be used for the project

VS: Our current configuration - alternative

- Go to the **project** -> Dependencies -> Analyzers -> StyleCop.Analyzers
- You can change the default configuration by: Click right on a rule -> Set severity (Select “None” to disable a rule)



Don't forget to commit
that one with your HWs!

- Any change will result in the creation of a new .editorconfig file that will be used for the project

WARNING! (Both VS and Rider)

- Ideally, you will **NOT** change the default configuration
 - We are learning how to code with well accepted standards so our goal is to comply with the default configuration
- Situations where it is **acceptable to change the default configuration**:
 - There are two contradicting rules so you must select one and unselect the other
 - You have a very strong opinion that a selected warning is not a good practice and you are able to make a case (the justification must be included in your GitLab readme)

The different areas of rules

- <https://github.com/DotNetAnalyzers/StyleCopAnalyzers/blob/master/DOCUMENTATION.md>

Special Rules (SA0000-)

Rules which provide special functionality like workarounds, configuration errors, etc.

Spacing Rules (SA1000-)

Rules which enforce spacing requirements around keywords and symbols in the code.

Readability Rules (SA1100-)

Rules which ensure that the code is well-formatted and readable.

Ordering Rules (SA1200-)

Rules which enforce a standard ordering scheme for code contents.

Naming Rules (SA1300-)

Rules which enforce naming requirements for members, types, and variables.

Maintainability Rules (SA1400-)

Rules which improve code maintainability.

Layout Rules (SA1500-)

Rules which enforce code layout and line spacing.

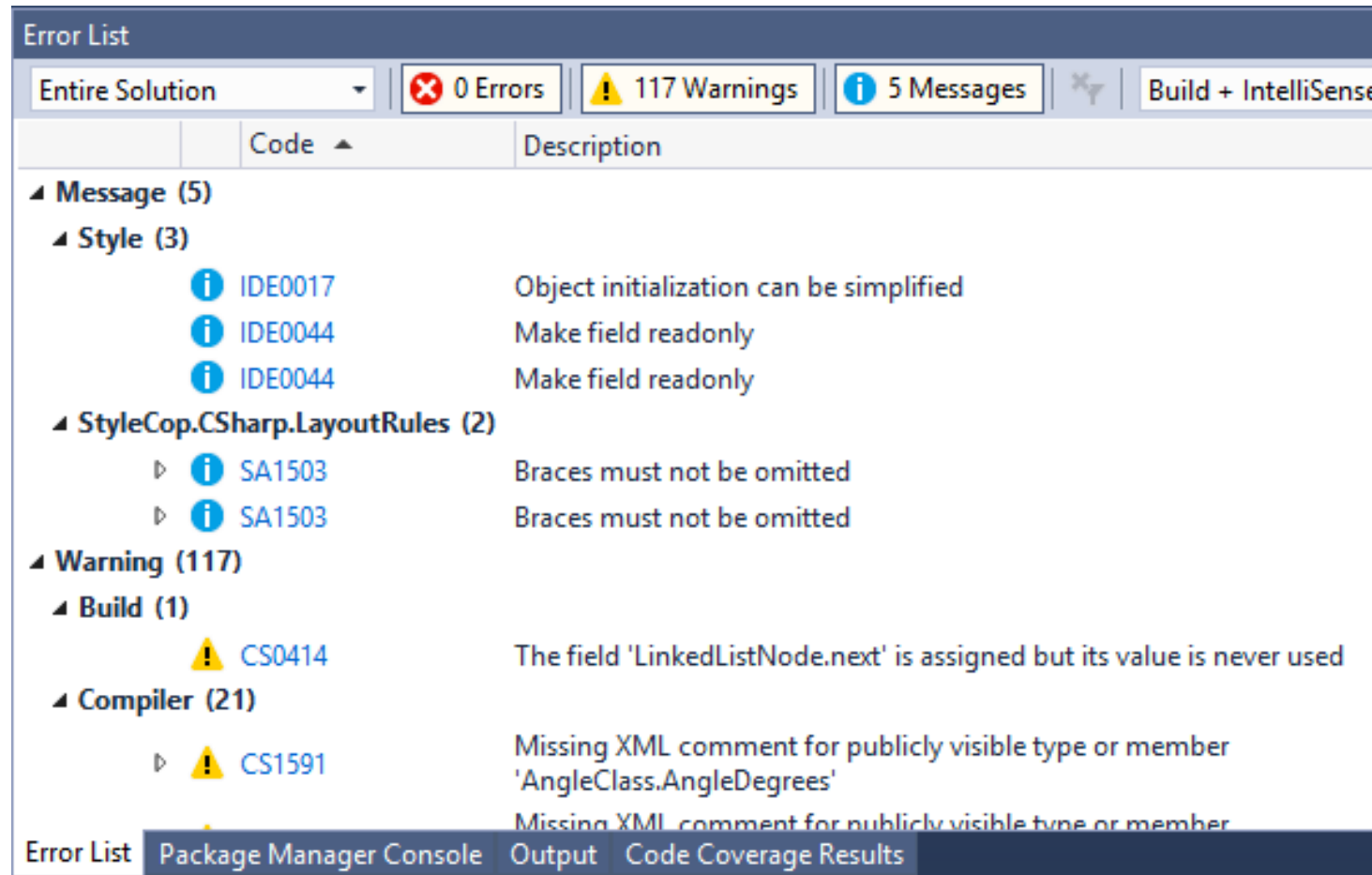
Documentation Rules (SA1600-)

Rules which verify the content and formatting of code documentation.

Alternative Rules (SX0000-)

Rules which offer a non-standard extension to the default StyleCop behavior.

VS: Organize your error list in a way that make sense to you

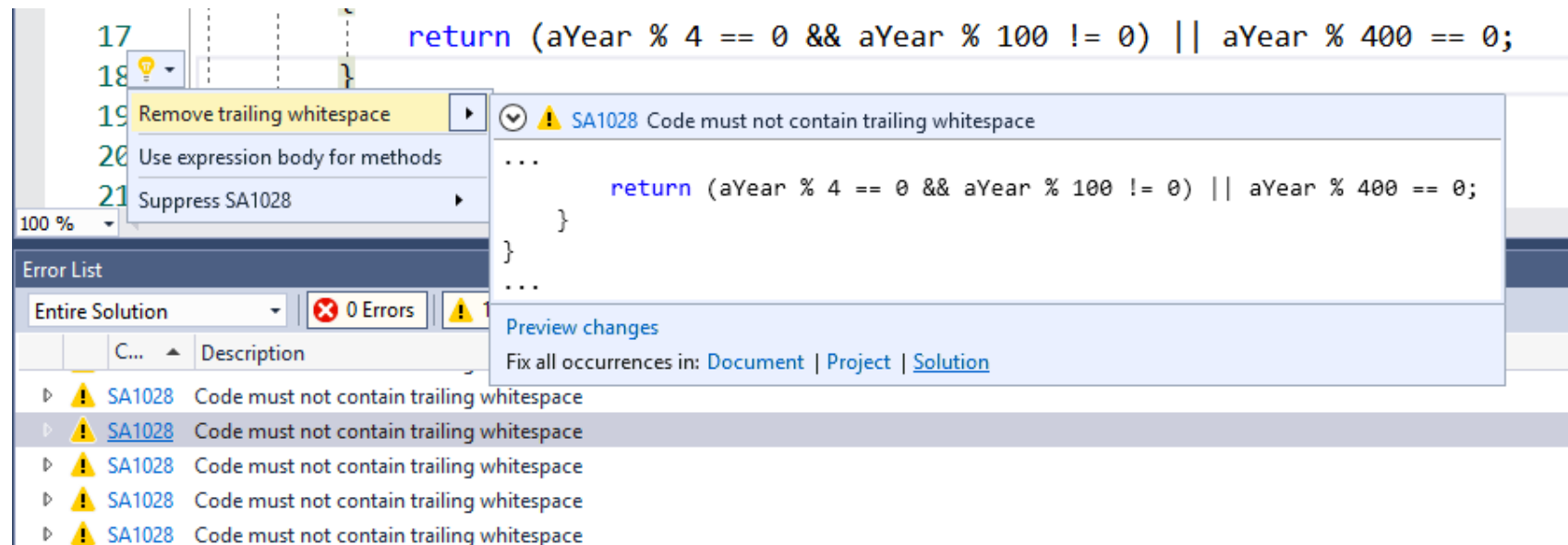


Click right in the error list view and explore:

- “**Grouping**” and
- “**Show Columns**”

VS: Fixing problems

1. Double-click on the warning/error to go on the source code line – the problematic part of the line will be underlined
2. Bring your cursor to the beginning of the line; a lightbulb will appear – click on the arrow to see possible **automatic fixes**
3. Fix the warning/error either by selecting one of the automatic fixes or by manually changing the code



VS and Rider: stylecop.json

- Specify project-specific text, such as the name of the company, author name, and the structure to use for copyright headers
 - For this class, we want to have your name and WSU ID
- Fine-tune the behavior of certain rules
- Check the following slides to learn how to **create and configure this file**

VS: Add stylecop.json configuration – option 1

- The easiest way to add a **stylecop.json** configuration file to a new project is using a code fix provided by the project.
 - To invoke the code fix, open any file where SA1633 is reported and press Ctrl+. to bring up the Quick Fix menu.
 - From the menu, select **Add StyleCop settings file to the project.**

Add stylecop.json configuration – option 2

- Add the following in your project:
<https://github.com/DotNetAnalyzers/StyleCopAnalyzers/blob/master/StyleCop.Analyzers/stylecop.json>
- Then enable it (in Visual Studio 2017 and 2019; check [here](#) for other versions):
 1. Select the file in **Solution Explorer**.
 2. Right click -> **Properties** -> set the value for **Build Action** to:
 - For most projects: "**AdditionalFiles**" or "**C# analyzer additional file**"

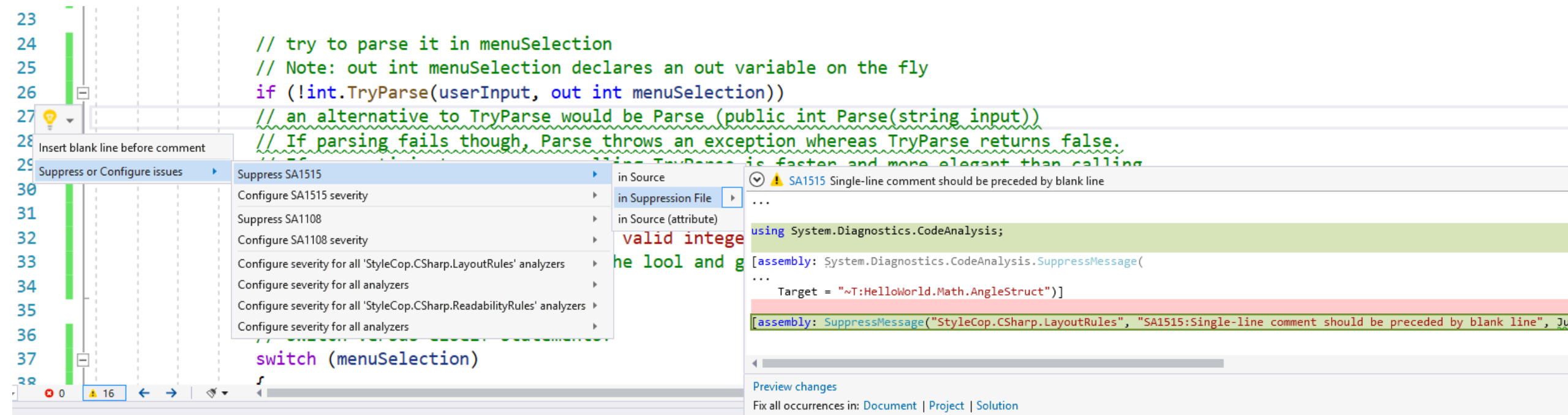
An example of how to configure the stylecop.json

```
{  
  // ACTION REQUIRED: This file was automatically added to your project, but it will not take effect until additional steps are taken to enable it. See the  
  // following page for additional information: https://github.com/DotNetAnalyzers/StyleCopAnalyzers/blob/master/documentation/EnableConfiguration.md  
  
  "$schema": "https://raw.githubusercontent.com/DotNetAnalyzers/StyleCopAnalyzers/master/StyleCop.Analyzers/StyleCop.Analyzers/Settings/stylecop.schema.json",  
  "settings": {  
    "documentationRules": {  
      "companyName": "Venera Arnaoudova",  
      "copyrightText": "Copyright (c) {companyName}. All rights reserved.",  
      "documentPrivateElements": true,  
      "documentPrivateFields": true  
    },  
    "orderingRules": {  
      "usingDirectivesPlacement": "outsideNamespace"  
    }  
  }  
}
```

More on: <https://github.com/DotNetAnalyzers/StyleCopAnalyzers/blob/master/documentation/Configuration.md>

VS: Exceptions to the rules: GlobalSuppressions.cs

- An example:



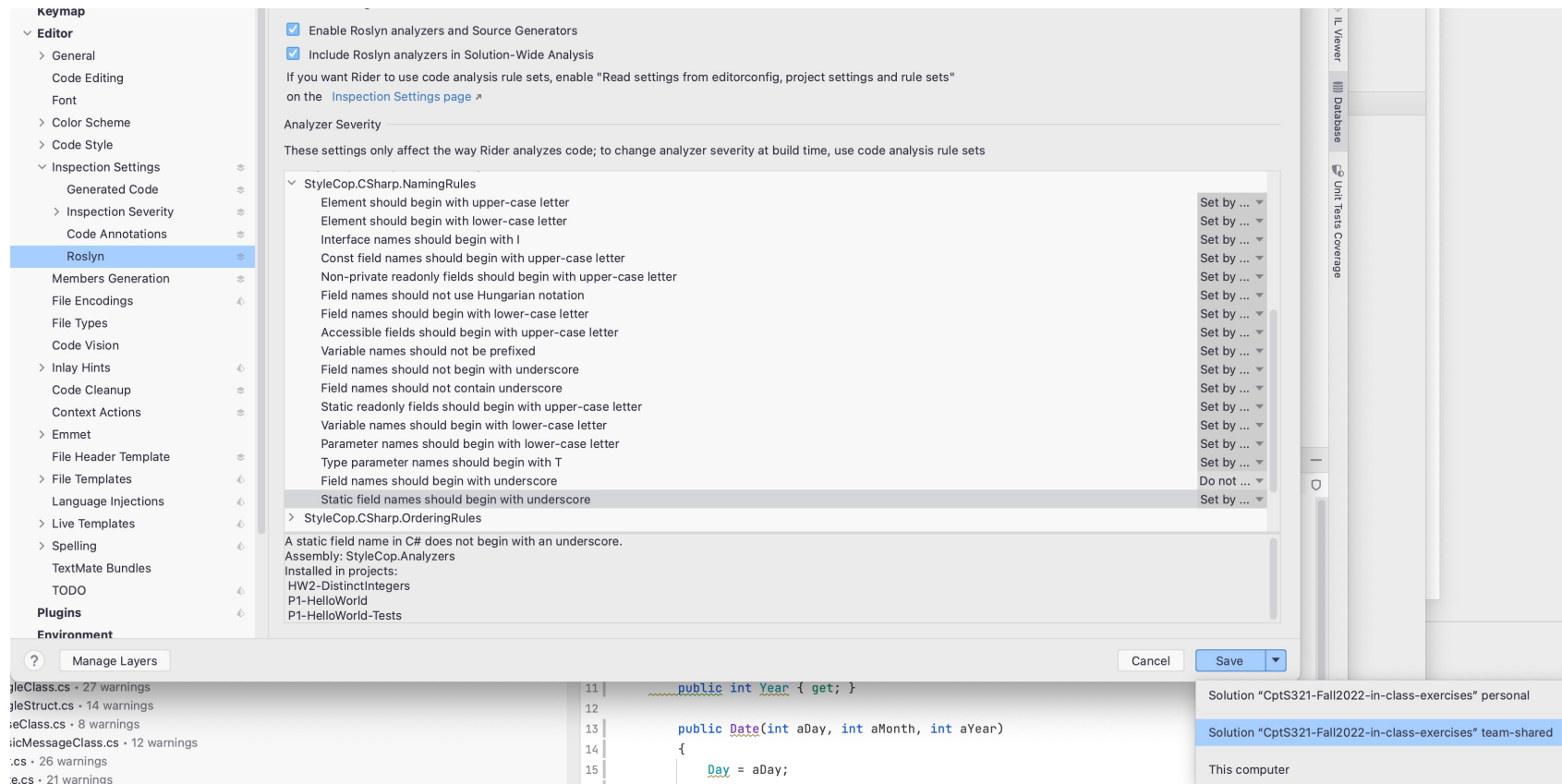
- Justification is very important! You must explain the rationale behind making an exception.

Configuring the solution?

- Make sure StyleCop.Analyzers is **activated/installed** for all projects in your solution (Right click on solution -> Manage packages for the solution -> Installed -> All projects must be selected)
- Move the .ruleset file in the solution (next to the .sln file)
- Add the .ruleset file to the solution (Right click on solution -> Add -> Existing item -> <select your .ruleset file>)
- Then: <https://docs.microsoft.com/en-us/visualstudio/code-quality/how-to-configure-code-analysis-for-a-managed-code-project?view=vs-2017>

Rider: StyleCop config

- Follow the default configuration (JetBrains Rider -> Preferences...-> Editor -> Inspection Settings -> Roslyn)
- Any change should be saved as “Team Shared” and a file .sln.DotSettings will be created and needs to be committed to the repo.

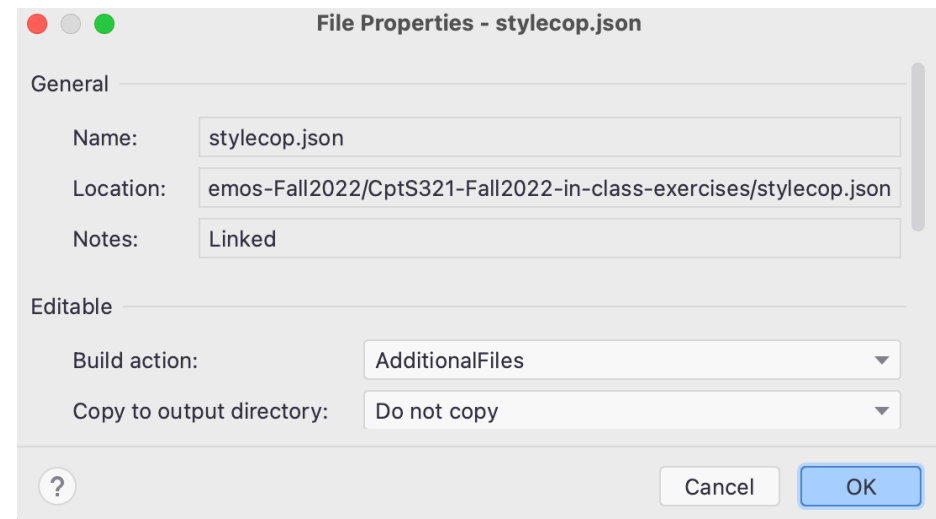


Rider: StyleCop.json

- For the .json file, add it to the folder where the solution is and do one of the following options below:

- Option 1: edit the .csproj file for each project to add the following line:
<AdditionalFiles
 Include="../stylecop.json" />
- Option 2: Right click on the project -> Add -> "Add existing item" and select the .json file -> Add link. Then right click on the file -> Properties and change "Build action" to "AdditionalFiles"

```
<ItemGroup>  
  <AdditionalFiles Include="../stylecop.json" />  
  <PackageReference Include="StyleCop.Analyzers" Version="1.1.118">
```



IMPORTANT

- For **ALL HWs**:
 - You must commit the **3 configuration files**:
 - **Copyright configuration file**
 - **stylecop.json** - mandatory
 - **Custom configuration files for rules** - mandatory only if you have changed default configuration
 - **VS**: **.ruleset** OR **.editorconfig** file
 - **Rider**: **.sln.DotSettings** file (mandatory if you have changed default configuration)
 - **Exceptions for specific instances of the rules**
 - **VS**: **GlobalSuppressions.cs** (mandatory if you have made exceptions; if you haven't made exceptions this file does not exist)
 - **Rider**: does not allow exceptions in configuration files so nothing to commit
- You must **resolve all errors and warnings** of your configuration **before you submit your HWs!**

Warnings for missing documentation comments

- Make sure to activate **XML Documentation Generation** in the project settings under **Debug | AnyCPU** and **Release | AnyCPU** for **ALL Projects** in your Solution and the warning will be displayed in the IDE

