How to improve your coding standards using StyleCop

This article explains how to use StyleCop tool to improve C# coding standards and to maintain consistency throughout the project.

14 Jul 2013

Introduction

It's always a good practice to keep a check on the coding standards used in the project irrespective of the number of developers involved in it. It not only helps in readability and understanding but saves lots of time and resources in the maintenance phase as well. StyleCop is such a **FREE** .NET tool which enforces a consistent style to be used in the project.

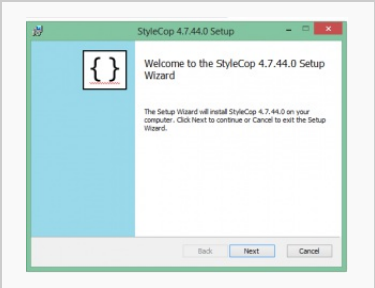
Note: As mentioned here, StyleCop tool can be used to check C# development guidelines only. It can't be used to check XAML guidelines.

Prerequisites

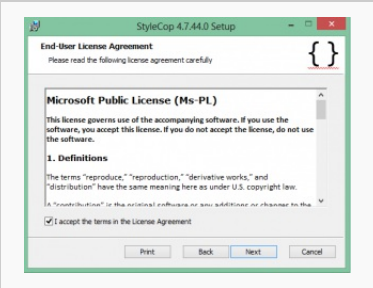
- Windows Phone development environment
- StyleCop

Installing StyleCop

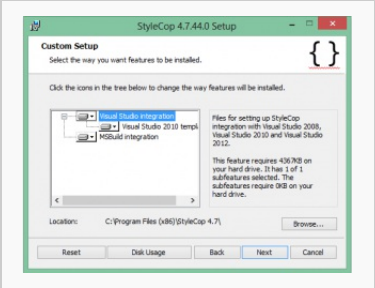
StyleCop can be downloaded from here after which you need to install it.



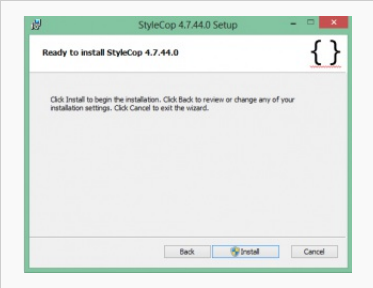
Installation Step 1



Installation Step 2



Installation Step 3



Installation Step 4

Writing sample code

To showcase the usage of *StyleCop*, we need some piece of written code. We are writing a simple function which will show a `MessageBox` to the user.

The code snippet is as below.

```
using System;
using System.Collections.Generic;
using System.Linq;
using System.Net;
using System.Windows;
using System.Windows.Controls;
using System.Windows.Navigation;
using Microsoft.Phone.Controls;
using Microsoft.Phone.Shell;
using StyleCopUsage.Resources;

namespace StyleCopUsage
{
    public partial class MainPage : PhoneApplicationPage
    {
        // Constructor
        public MainPage()
        {
            InitializeComponent();
            greetVisitor();
        }

        private void greetVisitor()
        {
            MessageBox.Show("Hello, Visitor!");
```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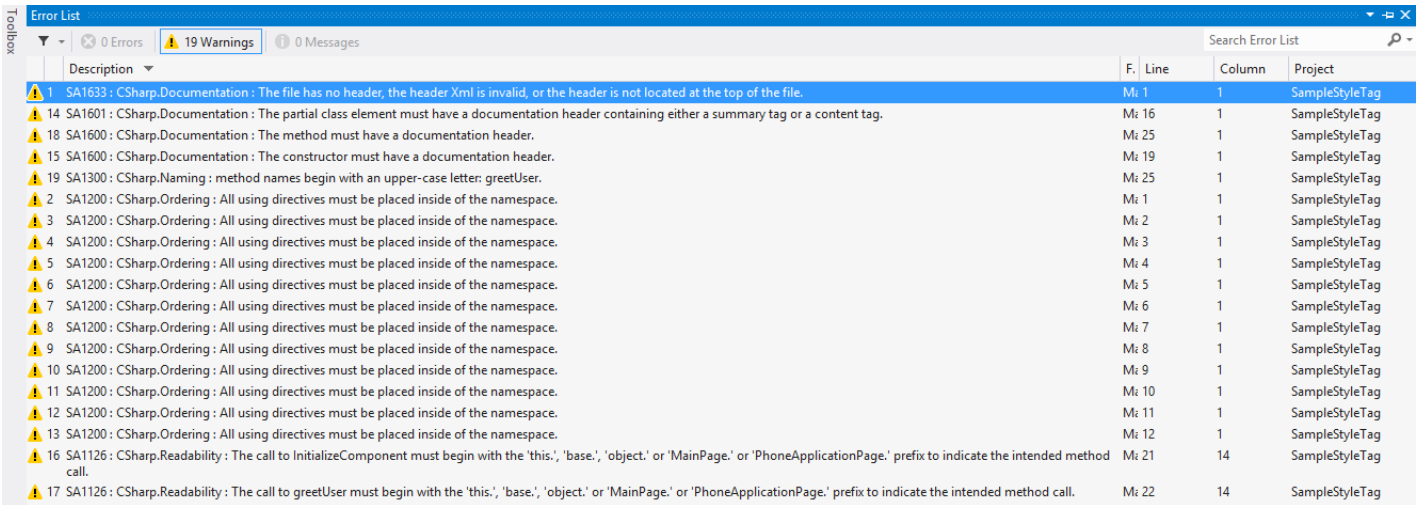
```
        }
    }
}
```

If we try to build/run this sample piece of code then it will compile/run successfully.

Running StyleCop

We will now run `StyleCop` to check if there are any C# development constraints we haven't met and if yes, then how many? To run *StyleCop*, simply right click on any page inside the application and choose **Run StyleCop** option or go through **Tools>>Run StyleCop**.

The results of the *StyleCop* tool can be viewed in the form of *Warnings* in the *Error List* window as shown below.



You can see, we have 19 `StyleCop warnings` in our project consisting of just one file and one very simple function. All these warnings are showing that we've not met the guidelines of C# development. Now you can imagine how many warnings would be there in our regular average projects and how much uneasy it would be for any other developer who used to follow C# guidelines immensely. The situation even gets worse when we(the developers), at times, need to deposit our source code to our clients as it puts a negative impression on them.

Removing StyleCop Warnings

The `StyleCop warnings` can be removed easily when read. So, after removing most of the *StyleCop* warnings our code looks like shown below.

```
// -----------------------------------------------------------------------
// <copyright file="MainPage.xaml.cs" company="Sample Company">
//     sample rights
// </copyright>
// <author>Pooja Arora</author>
// -----------------------------------------------------------------------

namespace StyleCopUsage
{
    using System;
    using System.Collections.Generic;
    using System.Linq;
    using System.Net;
    using System.Windows;
    using System.Windows.Controls;
    using System.Windows.Navigation;
    using Microsoft.Phone.Controls;
    using Microsoft.Phone.Shell;
    using StyleCopUsage.Resources;

    public partial class MainPage : PhoneApplicationPage
    {
        // Constructor
        public MainPage()
        {
            this.InitializeComponent();
            this.GreetVisitor();
        }

        private void GreetVisitor()
        {
            MessageBox.Show("Hello, Visitor!");
        }
    }
}
```

The remaining warnings are shown below.

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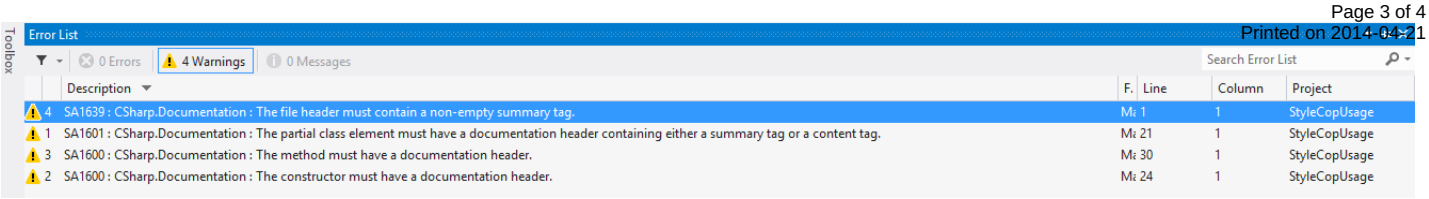
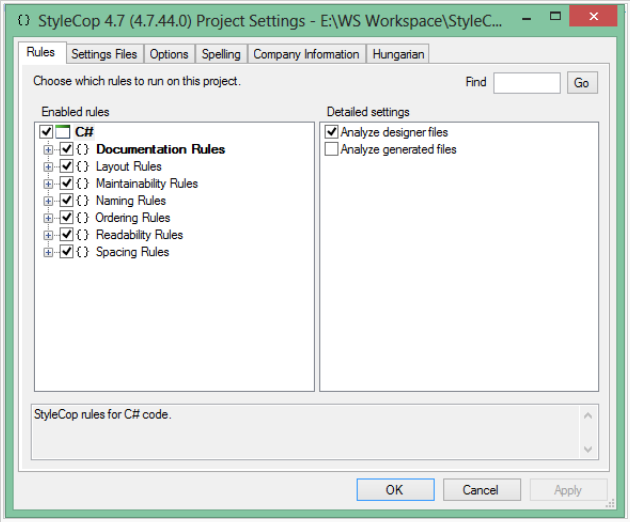


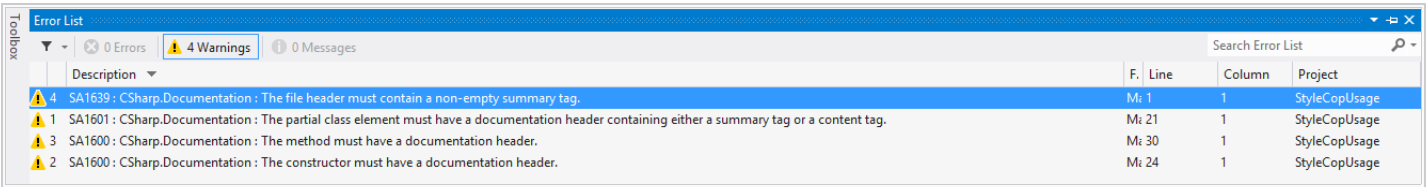
StyleCop Settings

We have an option to remove some or all of the predefined settings set by *StyleCop*. These `settings` can be accessed by selecting the project in the `Solution Explorer` window, right clicking and choosing *StyleCop* Settings. By default all the settings are applied but we can modify them as per our project's/time's requirement.



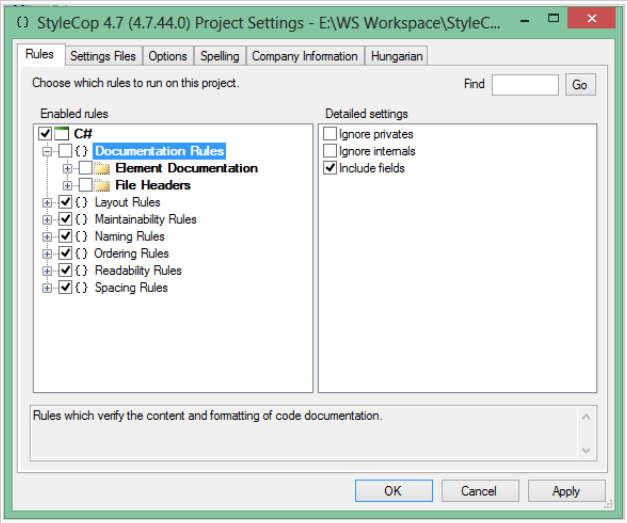
Default view of StyleCop Settings

Assuming we don't want to handle below mentioned kind of `warnings`.



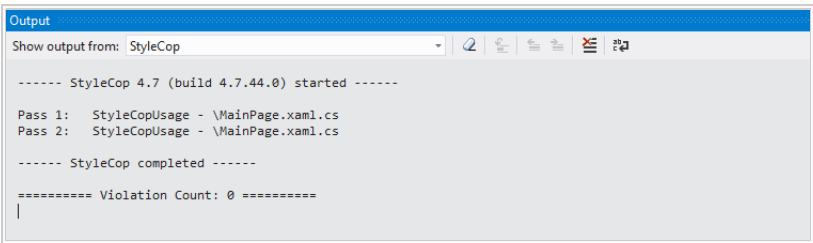
Remaining StyleCop warnings

For this, we can deselect the relevant check box(s) from the *StyleCop* **Settings** as shown below.



Modifying StyleCop Settings

After applying above settings, if we again try to re run *StyleCop*, we will see all the `warnings` have been removed.



No warnings

Summary

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This way we can keep a check that all of us (developers) met with the C# development guidelines using *StyleCop* tool while making Windows Phone apps.

References

- http://stylecop.codeplex.com/documentation

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