C# static code analysis

Unique rules to find Bugs, Vulnerabilities, Security Hotspots, and Code Smells in your C# code

Code Smell

Types and methods should not have too many generic parameters

Code Smell

Write-only properties should not be used

Code Smell

Exceptions should not be thrown from property getters

Code Smell

Unused type parameters should be removed

Code Smell

Parameters should be passed in the correct order

Code Smell

Two branches in a conditional structure should not have exactly the same implementation

Code Smell

Unused assignments should be removed

Code Smell

Tests should not be ignored

Code Smell

"switch" statements should not have too many "case" clauses

Code Smell

Sections of code should not be commented out

Code Smell

Unused method parameters should be removed

Code Smell

Windows Forms entry points should be marked with STAThread

Analyze your code

Bug Major winforms pitfall

When an assembly uses Windows Forms (classes and interfaces from the `System.Windows.Forms` namespace) its entry point should be marked with the `STAThreadAttribute` to indicate that the threading model should be "Single-Threaded Apartment" (STA) which is the only one supported by Windows Forms.

This rule raises an issue when the entry point (`static void Main` method) of an assembly using Windows Forms is not marked as STA.

Noncompliant Code Example

```
using System;
using System.Windows.Forms;

namespace MyLibrary
{
    public class MyForm: Form
    {
        public MyForm()
        {
            this.Text = "Hello World!";
        }

        public static void Main()  // Noncompliant
        {
            var form = new MyForm();
            Application.Run(form);
        }
    }
}
```

Compliant Solution

```
using System;
using System.Windows.Forms;

namespace MyLibrary
{
    public class MyForm: Form
    {
        public MyForm()
        {
            this.Text = "Hello World!";
        }

        [STAThread]
        public static void Main()
        {
            var form = new MyForm();
            Application.Run(form);
```

Empty arrays and collections should be returned instead of null

Code Smell

Unused private types or members should be removed

Code Smell

Track uses of "FIXME" tags

Code Smell

"Obsolete" attributes should include explanations

Code Smell

Assignments should not be made

```
            }
        }
    }
```

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