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C#

C# static code analysis

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

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"protected" members
Code Smell

Underscores should be used to make large numbers readable
Code Smell

"ToString()" calls should not be redundant
Code Smell

"==" should not be used when "Equals" is overridden
Code Smell

An abstract class should have both abstract and concrete methods
Code Smell

Multiple variables should not be declared on the same line
Code Smell

Culture should be specified for "string" operations
Code Smell

"switch" statements should have at least 3 "case" clauses
Code Smell

break statements should not be used except for switch cases
Code Smell

String literals should not be duplicated
Code Smell

Files should contain an empty newline at the end
Code Smell

Unused "using" should be removed
Code Smell

Disposable types should declare finalizers

Analyze your code

Code Smell Major

This rule raises an issue when a disposable type contains fields of the following types and does not implement a finalizer:

- `System.IntPtr`
- `System.UIntPtr`
- `System.Runtime.InteropService.HandleRef`

Noncompliant Code Example

```
using System;
using System.Runtime.InteropServices;

namespace MyLibrary
{
  public class Foo : IDisposable // Noncompliant: Doesn't ha
  {
    private IntPtr myResource;
    private bool disposed = false;

    protected virtual void Dispose(bool disposing)
    {
      if (!disposed)
      {
        // Dispose of resources held by this instance.
        FreeResource(myResource);
        disposed = true;

        // Suppress finalization of this disposed instance.
        if (disposing)
        {
          GC.SuppressFinalize(this);
        }
      }
    }

    public void Dispose() {
      Dispose(true);
    }
  }
}
```

Compliant Solution

```
using System;
using System.Runtime.InteropServices;

namespace MyLibrary
{
  public class Foo : IDisposable
```

A close curly brace should be located at the beginning of a line

Code Smell

Tabulation characters should not be used

Code Smell

Methods and properties should be named in PascalCase

Code Smell

Track uses of in-source issue suppressions

Code Smell

```
  {
    private IntPtr myResource;
    private bool disposed = false;

    protected virtual void Dispose(bool disposing)
    {
      if (!disposed)
      {
        // Dispose of resources held by this instance.
        FreeResource(myResource);
        disposed = true;

        // Suppress finalization of this disposed instance.
        if (disposing)
        {
          GC.SuppressFinalize(this);
        }
      }
    }

    ~Foo()
    {
      Dispose(false);
    }
  }
}
```

See

- Related: {rule:csharpsquid:S3881} - "IDisposable" should be implemented correctly

Available In:

sonarlint | sonarcloud | sonarqube