C# static code analysis

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

Code Smell

URI properties should not be strings
Code Smell

URI return values should not be strings
Code Smell

URI Parameters should not be strings
Code Smell

Custom attributes should be marked with "System.AttributeUsageAttribute"
Code Smell

Assemblies should explicitly specify COM visibility
Code Smell

Assemblies should be marked as CLS compliant
Code Smell

"Generic.List" instances should not be part of public APIs
Code Smell

Collections should implement the generic interface
Code Smell

Generic event handlers should be used
Code Smell

Event Handlers should have the correct signature
Code Smell

"Assembly.GetExecutingAssembly" should not be called
Code Smell

Arguments of public methods should

Fields that are only assigned in the constructor should be "readonly"

Analyze your code

Code Smell | Major | Quick Fix | confusing

`readonly` fields can only be assigned in a class constructor. If a class has a field that's not marked `readonly` but is only set in the constructor, it could cause confusion about the field's intended use. To avoid confusion, such fields should be marked `readonly` to make their intended use explicit, and to prevent future maintainers from inadvertently changing their use.

Noncompliant Code Example

```
public class Person
{
    private int _birthYear;  // Noncompliant

    Person(int birthYear)
    {
        _birthYear = birthYear;
    }
}
```

Compliant Solution

```
public class Person
{
    private readonly int _birthYear;

    Person(int birthYear)
    {
        _birthYear = birthYear;
    }
}
```

Exceptions

- Fields with attributes are ignored.
- Fields of type `struct` that are not primitive or pointer types are also ignored because of possible unwanted behavior.

See

- Mutating readonly structs

Available In:

sonarlint | sonarcloud | sonarqube

be validated against null

Code Smell

Value types should implement "IEquatable<T>"

Code Smell

Finalizers should not be empty

Code Smell

"[ExpectedException]" should not be used

Code Smell

"this" should not be exposed from constructors