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C# static code analysis

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

All rules 409 | Vulnerability 34 | Bug 76 | Security Hotspot 28 | Code Smell 271 | Quick Fix 52

Tags

Search by name...

"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

An abstract class should have both abstract and concrete methods

Analyze your code

Code Smell | Minor | convention

The purpose of an abstract class is to provide some heritable behaviors while also defining methods which must be implemented by sub-classes.

A `class` with no abstract methods that was made `abstract` purely to prevent instantiation should be converted to a concrete `class` (i.e. remove the `abstract` keyword) with a `protected` constructor.

A `class` with only `abstract` methods and no inheritable behavior should be converted to an `interface`.

Noncompliant Code Example

```
public abstract class Animal //Noncompliant; should be an in
{
  abstract void Move();
  abstract void Feed();
}

public abstract class Color //Noncompliant; should be concre
{
  private int red = 0;
  private int green = 0;
  private int blue = 0;

  public int GetRed()
  {
    return red;
  }
}
```

Compliant Solution

```
public interface Animal
{
  void Move();
  void Feed();
}

public class Color
{
  private int red = 0;
  private int green = 0;
  private int blue = 0;

  protected Color()
  {}

  public int GetRed()
  {
```

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

```
    return red;
  }
}

public abstract class Lamp
{
  private bool switchLamp = false;

  public abstract void Glow();

  public void FlipSwitch()
  {
    switchLamp = !switchLamp;
    if (switchLamp)
    {
      Glow();
    }
  }
}
```

Available In:

sonarlint | sonarcloud | sonarqube