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C# static code analysis

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

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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

"Equals" and the comparison operators should be overridden when implementing "IComparable"

Analyze your code

Code Smell Minor

When you implement `IComparable` or `IComparable<T>` on a class you should also override `Equals(object)` and overload the comparison operators (==, !=, <, <=, >, >=). That's because the CLR cannot automatically call your `CompareTo` implementation from `Equals(object)` or from the base comparison operator implementations. Additionally, it is best practice to override `GetHashCode` along with `Equals`.

This rule raises an issue when a class implements `IComparable` without also overriding `Equals(object)` and the comparison operators.

Noncompliant Code Example

```
public class Foo: IComparable  // Noncompliant
{
  public int CompareTo(object obj) { /* ... */ }
}
```

Compliant Solution

```
public class Foo: IComparable
{
  public int CompareTo(object obj) { /* ... */ }
  public override bool Equals(object obj)
  {
    var other = obj as Foo;
    if (object.ReferenceEquals(other, null))
    {
      return false;
    }
    return this.CompareTo(other) == 0;
  }
  public int GetHashCode() { /* ... */ }
  public static bool operator == (Foo left, Foo right)
  {
    if (object.ReferenceEquals(left, null))
    {
      return object.ReferenceEquals(right, null);
    }
    return left.Equals(right);
  }
  public static bool operator > (Foo left, Foo right)
  {
    return Compare(left, right) > 0;
  }
  public static bool operator < (Foo left, Foo right)
  {
    return Compare(left, right) < 0;
  }
  public static bool operator != (Foo left, Foo right)
```

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 !(left == right);
  }
}
```

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