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## Java static code analysis

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

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Abstract class names should comply with a naming convention

Code Smell

Strings literals should be placed on the left side when checking for equality

Code Smell

Files should contain an empty newline at the end

Code Smell

Source code should be indented consistently

Code Smell

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

Code Smell

Close curly brace and the next "else", "catch" and "finally" keywords should be on two different lines

Code Smell

Close curly brace and the next "else", "catch" and "finally" keywords should be located on the same line

Code Smell

An open curly brace should be located at the beginning of a line

Code Smell

An open curly brace should be located at the end of a line

Code Smell

Tabulation characters should not be used

Code Smell

Functions should not be defined with a variable number of arguments

Code Smell

"this" should not be exposed from constructors

Analyze your code

Code Smell

Major

multi-threading cert suspicious

In single-threaded environments, the use of `this` in constructors is normal, and expected. But in multi-threaded environments, it could expose partially-constructed objects to other threads, and should be used with caution.

The classic example is a class with a static list of its instances. If the constructor stores `this` in the list, another thread could access the object before it's fully-formed. Even when the storage of `this` is the last instruction in the constructor, there's still a danger if the class is not `final`. In that case, the initialization of subclasses won't be complete before `this` is exposed.

This rule raises an issue when `this` is assigned to any globally-visible object in a constructor, and when it is passed to the method of another object in a constructor

Noncompliant Code Example

```
public class Monument {

    public static final List<Monument> ALL_MONUMENTS = new Arr
    // ...

    public Monument(String location, ...) {
        ALL_MONUMENTS.add(this); // Noncompliant; passed to a m

        this.location = location;
        // ...
    }
}
```

Exceptions

This rule ignores instances of assigning `this` directly to a static field of the same class because that case is covered by {rule:java:S3010}.

See

- [CERT, TSM01-J](#). - Do not let the this reference escape during object construction
- [CERT, TSM03-J](#). - Do not publish partially initialized objects

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