Secrets
ABAP
Apex
C
C++
CloudFormation
COBOL
C#
CSS
Flex
Go
HTML
Java
JavaScript
Kotlin
Kubernetes
Objective C
PHP
PL/I
PL/SQL
Python
RPG
Ruby
Scala
Swift
Terraform
Text
TypeScript
T-SQL
VB.NET
VB6
XML

C static code analysis

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

All rules 311 | Vulnerability 13 | Bug 74 | Security Hotspot 18 | Code Smell 206 | Quick Fix 14

Tags

Search by name...

"memset" should not be used to delete sensitive data
Vulnerability

POSIX functions should not be called with arguments that trigger buffer overflows
Vulnerability

XML parsers should not be vulnerable to XXE attacks
Vulnerability

Function-like macros should not be invoked without all of their arguments
Bug

The address of an automatic object should not be assigned to another object that may persist after the first object has ceased to exist
Bug

"pthread_mutex_t" should be unlocked in the reverse order they were locked
Bug

"pthread_mutex_t" should be properly initialized and destroyed
Bug

"pthread_mutex_t" should not be consecutively locked or unlocked twice
Bug

Functions with "noreturn" attribute should not return
Bug

"memcmp" should only be called with pointers to trivially copyable types with no padding
Bug

"for" loop stop conditions should be invariant

Analyze your code

Code Smell | Major | based-on-misra pitfall

A `for` loop stop condition should test the loop counter against an invariant value (i.e. one that is true at both the beginning and ending of every loop iteration). Ideally, this means that the stop condition is set to a local variable just before the loop begins.

Stop conditions that are not invariant are slightly less efficient, as well as being difficult to understand and maintain, and likely lead to the introduction of errors in the future.

This rule tracks three types of non-invariant stop conditions:

- When the loop counters are updated in the body of the `for` loop
- When the stop condition depend upon a method call
- When the stop condition depends on an object property, since such properties could change during the execution of the loop.

Noncompliant Code Example

```
for (int i = 0; i < 10; i++) {
  ...
  i = i - 1; // Noncompliant
  ...
}

for (int i = 0; i < getMaximumNumber(); i++) {  // Noncomplia
}
```

Compliant Solution

```
for (int i = 0; i < 10; i++) {
  ...
}
int stopCondition = getMaximumNumber();
for (int i = 0; i < stopCondition; i++) {
}
```

See

- MISRA C:2004, 13.6 - Numeric variables being used within a *for* loop for iteration counting shall not be modified in the body of the loop.
- MISRA C++:2008, 6-5-3 - The *loop-counter* shall not be modified within *condition* or *statement*.

Available In:

sonarlint | sonarcloud | sonarqube Developer Edition

Stack allocated memory and non-owned memory should not be freed

Bug

Closed resources should not be accessed

Bug

Dynamically allocated memory should be released

Bug

Freed memory should not be used