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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 578 | Vulnerability 13 | Bug 111 | Security Hotspot 18 | Code Smell 436 | Quick Fix 68

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

Assigning to an optional should directly target the optional

Bug

Result of the standard remove algorithms should not be ignored

Bug

"std::scoped_lock" should be created with constructor arguments

Bug

Objects should not be sliced

Bug

Immediately dangling references should not be created

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

Track "TODO" and "FIXME" comments that do not contain a reference to a person

Analyze your code

Code Smell   Minor   convention

TODO and FIXME comments are typically intended to be short-lived; they are placeholders and reminders that programmers leave for themselves. Unfortunately, even with the best of intentions, those comments are not always acted on and removed in a timely manner. Thus, they can become mysterious, lingering cruft in a code base, reducing both readability and understand-ability.

This rule flags all FIXME and TODO comments that do not have an attribution matching the specified regular expression immediately after the FIXME or TODO. Ideally, such comments will also contain information about what needs to be fixed or done, but this rule does not enforce that.

Noncompliant Code Example

Using the default regular expression: `[  ]*\([ _a-zA-Z0-9@.]+\)`:

```
// TODO
```

Compliant Solution

```
// TODO(ganncamp) per the business partners, more checks need
```

Available In:

sonarlint | sonarcloud | sonarqube Developer Edition

Bug

"std::move" and "std::forward" should not be confused

Bug

A call to "wait()" on a "std::condition_variable" should have a condition

Bug

A pointer to a virtual base class shall only be cast to a pointer to a derived class by means of dynamic_cast

Bug

Functions with "noreturn" attribute should not return

Bug

RAII objects should not be temporary

Bug

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

Bug

"memcpy", "memmove", and "memset" should only be called with pointers to trivially copyable types

Bug

"std::auto_ptr" should not be used

Bug

Destructors should be "noexcept"

Bug