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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

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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

Identifiers should not be longer than 31 characters

Analyze your code

 Code Smell  Major  based-on-misra cert

In addition to being difficult to use, too-long variable names can limit code portability. The ISO standard requires that variable, type, function and label names be no more than 31 characters long.

Note that 31 characters is an upper bound, rather than a length recommendation. Shorter names are better, as long as they're still communicative.

Noncompliant Code Example

```
int this_is_a_very_long_identifier_that_definitely_should_be_
```

Compliant Solution

```
int reasonable_identifier = 0;
```

See

- MISRA C:2004, 5.1 - Identifiers (internal and external) shall not rely on the significance of more than 31 character.
- [CERT, DCL23-C](#). - Guarantee that mutually visible identifiers are unique

Available In:

sonarlint

| sonarcloud

| sonarqube

Developer Edition

 Bug
<p>"std::move" and "std::forward" should not be confused</p>  Bug
<p>A call to "wait()" on a "std::condition_variable" should have a condition</p>  Bug
<p>A pointer to a virtual base class shall only be cast to a pointer to a derived class by means of dynamic_cast</p>  Bug
<p>Functions with "noreturn" attribute should not return</p>  Bug
<p>RAII objects should not be temporary</p>  Bug
<p>"memcmp" should only be called with pointers to trivially copyable types with no padding</p>  Bug
<p>"memcpy", "memmove", and "memset" should only be called with pointers to trivially copyable types</p>  Bug
<p>"std::auto_ptr" should not be used</p>  Bug
<p>Destructors should be "noexcept"</p>  Bug