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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
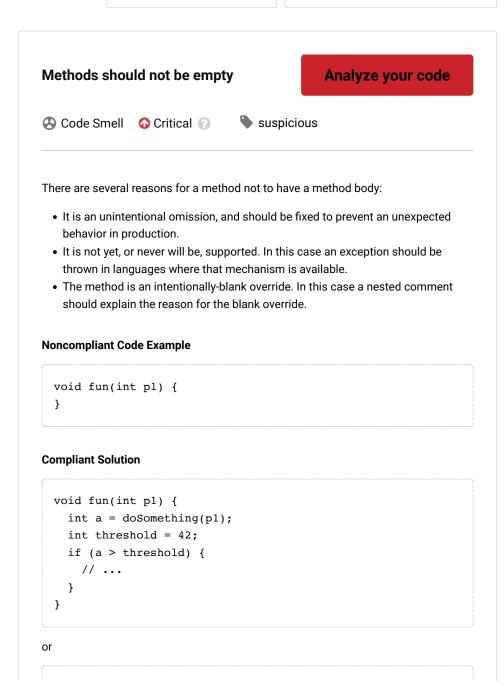
🐛 Bug

"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

Methods should not be empty

Analyze your code

⊗ Code Smell   🔄 Critical ⍰   🏷 suspicious

There are several reasons for a method not to have a method body:

- It is an unintentional omission, and should be fixed to prevent an unexpected behavior in production.
- It is not yet, or never will be, supported. In this case an exception should be thrown in languages where that mechanism is available.
- The method is an intentionally-blank override. In this case a nested comment should explain the reason for the blank override.

Noncompliant Code Example

```
void fun(int p1) {
}
```

Compliant Solution

```
void fun(int p1) {
    int a = doSomething(p1);
    int threshold = 42;
    if (a > threshold) {
        // ...
    }
}
```

or

```
void fun(int p1) {
    // Intentionally unimplemented...
}
```

Exceptions

This rule doesn't raise an issue for empty class constructors or destructors. For instance this is the only way to define user-defined default constructors.

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