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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

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Functions should not be declared at block scope

Analyze your code

😖 Code Smell   🔺 Major ⑦   🏷 misra-c++2008 misra-c2004

A function declared at block scope will refer to a member of the enclosing namespace, and so the declaration should be explicitly placed at the namespace level.

Additionally, where a declaration statement could either declare a function or an object, the compiler will choose to declare the function. To avoid potential developer confusion over the meaning of a declaration, functions should not be declared at block scope.

Noncompliant Code Example

```
class A {
};

void fun() {
  void nestedFun();  // Noncompliant; declares a function in

  A a();      // Noncompliant; declares a function at block s
}
```

See

- MISRA C:2004, 8.6 - Functions shall be declared at file scope
- MISRA C++:2008, 3-1-2 - Functions shall not be declared at block scope

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