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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 **311**

Vulnerability **13**

Bug **74**

Security Hotspot **18**

Code Smell **206**

Quick Fix **14**

Tags

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"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

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

Bug

### Types and variables should be declared in separate statements

Analyze your code

Code Smell Minor ? cppcoreguidelines confusing

It is possible in the same statement, to declare a user-defined type (class, struct, union or enum) followed by variable declarations of this type. But mixing more than one concern in a single statement is confusing for maintainers.

This rule raises an issue when a variable is declared at the end of a user-defined type declaration statement.

#### Noncompliant Code Example

```
struct Container { int size; } container; // Noncompliant
```

#### Compliant Solution

```
struct Container { int size; };
Container container;
```

#### See

- [C++ Core Guidelines C.7](#) - Don't define a class or enum and declare a variable of its type in the same statement

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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