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C static code analysis

Unique rules to find Bugs, Vulnerabilities, Security Hotspots, and Code Smells in your C code

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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

"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

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

Empty statements should be removed

Analyze your code

Code Smell | Minor | based-on-misra cert unused

Empty statements, i.e. `;`, are usually introduced by mistake, for example because:

- It was meant to be replaced by an actual statement, but this was forgotten.
- There was a typo which lead the semicolon to be doubled, i.e. `;;`.

Noncompliant Code Example

```
void doSomething() {
  ;                                                    // 1
}
```

Compliant Solution

```
void doSomething() {
}
```

Exceptions

In the case of empty expanded macro and in the case of 2 consecutive semi-colons when one of the two is part of a macro-definition then the issue is not raised.

Example:

```
#define A(x) x;
#define LOG(x)

void fun() {
  A(5);
  LOG(X);
}
```

See

- MISRA C:2004, 14.3 - Before preprocessing, a null statement shall only occur on a line by itself; it may be followed by a comment provided that the first character following the null statement is a white-space character.
- MISRA C++:2008, 6-2-3 - Before preprocessing, a null statement shall only occur on a line by itself; it may be followed by a comment, provided that the first character following the null statement is a white-space character.
- CERT, MSC12-C. - Detect and remove code that has no effect or is never executed
- CERT, MSC51-J. - Do not place a semicolon immediately following an if, for, or while condition
- CERT, EXP15-C. - Do not place a semicolon on the same line as an if, for, or while statement

Available In:

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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