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# Objective C static code analysis

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

All rules 315

Vulnerability 10

Bug 75

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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

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

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

Unary minus should not be applied to an unsigned expression

Analyze your code

Bug Major based-on-misra

Applying the unary minus operator to an unsigned variable or expression will always yield another unsigned expression. More plainly, in some cases the operation itself is meaningless, and in some other cases the result will be unexpected. In all cases it is bad practice. Therefore the unary minus operator should not be applied to unsigned variables or expressions.

### Noncompliant Code Example

```
uint8_t a = -1U;
int32_t b = -a; // Noncompliant; b is assigned -255
uint32_t c = 1U;
int64_t d = -c; // Noncompliant; d is assigned MAX_UINT
```

### Exceptions

This rule ignores `-1U` because it is commonly used as shorthand for `MAX_UINT`.

### See

- MISRA C:2004, 12.9 - The unary minus operator shall not be applied to an expression whose underlying type is unsigned.
- MISRA C++:2008, 5-3-2 - The unary minus operator shall not be applied to an expression whose underlying type is unsigned.
- MISRA C:2012, 10.1 - Operands shall not be of an inappropriate essential type

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<div>Freed memory should not be used</div> <div> Bug</div>
<div>Memory locations should not be released more than once</div> <div> Bug</div>
<div>Memory access should be explicitly bounded to prevent buffer overflows</div> <div> Bug</div>
<div>Printf-style format strings should not lead to unexpected behavior at runtime</div> <div> Bug</div>
<div>Recursion should not be infinite</div> <div> Bug</div>
<div>Resources should be closed</div> <div> Bug</div>
<div>Hard-coded credentials are security-sensitive</div> <div> Security Hotspot</div>
<div>"goto" should jump to labels declared later in the same function</div> <div> Code Smell</div>
<div>Only standard forms of the "defined" directive should be used</div> <div> Code Smell</div>
<div>Switch labels should not be nested inside non-switch blocks</div> <div> Code Smell</div>