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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

Security Hotspot 18

Code Smell 212

Quick Fix 13

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

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

Identical expressions should not be used on both sides of a binary operator

Analyze your code

Bug Major cert

Using the same value on either side of a binary operator is almost always a mistake. In the case of logical operators, it is either a copy/paste error and therefore a bug, or it is simply wasted code, and should be simplified. In the case of bitwise operators and most binary mathematical operators, having the same value on both sides of an operator yields predictable results, and should be simplified.

### Noncompliant Code Example

```
if ( a == a ) { // always true
    do_z();
}
if ( a != a ) { // always false
    do_y();
}
if ( a == b && a == b ) { // if the first one is true, the second one is true
    do_x();
}
if ( a == b || a == b ) { // if the first one is true, the second one is true
    do_w();
}

if ( 5 / 5 ) { // always 1
    do_v();
}
if ( 5 - 5 ) { // always 0
    do_u();
}
```

### Exceptions

The following are ignored:

- The expression `1 << 1`
- When an increment or decrement operator is used, ex: `*p++ == *p++`
- Bitwise operators `|`, `&`, `^`
- Arithmetic operators `+`, `*`
- Assignment operators `=`, `+=`, `*=`

### See

- [CERT, MSC12-C](#) - Detect and remove code that has no effect or is never executed
- `{rule:cpp:S1656}` - Implements a check on `=`.

Available In:

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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>