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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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"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

"goto" should jump to labels declared later in the same function

Analyze your code

 Code Smell  Blocker  based-on-misra pitfall

Unconstrained use of `goto` can lead to programs that are extremely difficult to comprehend and analyse. For C++, it can also lead to the program exhibiting unspecified behavior.

However, in many cases a total ban on `goto` requires the introduction of flags to ensure correct control flow, and it is possible that these flags may themselves be less transparent than the `goto` they replace.

Therefore, the restricted use of `goto` is allowed where that use will not lead to semantics contrary to developer expectations. "Back" jumps are prohibited, since they can be used to create iterations without using the well-defined iteration statements supplied by the core language.

### Noncompliant Code Example

```
int f() {
    int j = 0;
L1:
    ++j;
    if (10 == j) {
        goto L2;           // forward jump ignored
    }
    // ...
    goto L1;               // Noncompliant
L2:
    return ++j;
}
```

### Compliant Solution











```
int f() {
    for (int j = 0; j < 11; j++) {
        // ...
    }
    return ++j;
}
```

### See

- MISRA C++:2008, 6-6-2 - The goto statement shall jump to a label declared later in the same function body
- MISRA C:2012, 15.2 - The goto statement shall jump to a label declared later in the same function

Available In:

sonarcloud  sonarqube  Developer Edition

|   |
|---|
| <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>          |