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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

"memcmp" 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

"pthread_mutex_t" should not be consecutively locked or unlocked twice

Analyze your code

Bug Blocker symbolic-execution multi-threading

Mutexes are synchronization primitives that allow to manage concurrency.

- *non recursive mutexes* are targeted by this rule. They can be locked/unlocked only once. Any locking/unlocking sequence that contains two consecutive identical operations leads to an undefined behaviour.
- *recursive mutexes* are not target by this rule. They can be locked several times and unlocked several times as long as the number of locks/unlocks is the same.

This rule raises an issue when a `pthread_mutex_t` is locked or unlocked several times in a row. We assume that all `pthread_mutex_t` are non-recursive (this is the most common case).

Noncompliant Code Example

```
pthread_mutex_t mtx1;

void bad1(void)
{
  pthread_mutex_lock(&mtx1);
  pthread_mutex_lock(&mtx1);
}

void bad2(void)
{
  pthread_mutex_unlock(&mtx1);
  pthread_mutex_unlock(&mtx1);
}
```

Compliant Solution

```
pthread_mutex_t mtx1;

void ok(void)
{
  pthread_mutex_lock(&mtx1);
  pthread_mutex_unlock(&mtx1);
}
```

See

- The Open Group pthread_mutex_init, pthread_mutex_destroy

Available In:
sonarcloud | sonarqube Developer Edition

Freed memory should not be used

Bug

Memory locations should not be released more than once

Bug

Memory access should be explicitly bounded to prevent buffer overflows

Bug

Printf-style format strings should not lead to unexpected behavior at runtime

Bug

Recursion should not be infinite

Bug

Resources should be closed

Bug

Hard-coded credentials are security-sensitive

Security Hotspot

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

Code Smell

Only standard forms of the "defined" directive should be used

Code Smell

Switch labels should not be nested inside non-switch blocks

Code Smell