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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

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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

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

"switch" statements should cover all cases

Analyze your code

Code Smell Major suspicious

For completeness, a `switch` over the values of an `enum` must either address each value in the `enum` or contain a `default` case. `switch` statements that are not over `enum` must end with a `default` case.

This rule is a more nuanced version of {rule:cpp:S131}. Use {rule:cpp:S131} if you want to require a `default` case for every `switch` even if it already handles all enumerators of an `enum`. Otherwise, use this rule.

Noncompliant Code Example

```
typedef enum {APPLE, GRAPE, KIWI} fruit;

void example(fruit f, int i) {
  switch (f) {  // Noncompliant; no case for KIWI
    case APPLE:
      //...
    case GRAPE:
      //...
    case 3: // Noncompliant; case value not in enum
      // ...
  }

  switch (i) { // Noncompliant; no default
    case 0:
      // ...
    case 1:
      // ...
  }
}
```

Compliant Solution

```
typedef enum {APPLE, GRAPE, KIWI} fruit;

void example(fruit f) {
  switch (f) {
    case APPLE:
      //...
    case GRAPE:
      //...
    default:
      // ...
  }

  switch (i) {
    case 0:
      // ...
    case 1:
      // ...
    default:
      // ...
  }
}
```

or

```
typedef enum {APPLE, GRAPE, KIWI} fruit;
```

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

```
void example(fruit f) {
  switch (f) {
    case APPLE:
      //...
    case GRAPE:
      //...
    case KIWI:
      //...
  }

  switch (i) {
    case 0:
    case 1:
      // ...
    default:
      // ...
  }
}
```

See

- C++ Core Guidelines - Enum.2 - Use enumerations to represent sets of related named constants

See Also

- {rule:cpp:S131}

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