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

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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

"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

Lines starting with "#" should contain valid preprocessing directives

Analyze your code

Bug Major based-on-misra preprocessor

Preprocessing directives (lines that start with #) can be used to conditionally include or exclude code from compilation. Malformed preprocessing directives could lead to the exclusion or inclusion of more code than was intended. Therefore all preprocessing directives should be syntactically meaningful.

Noncompliant Code Example

```
#define AAA 2
...
int foo(void)
{
  int x = 0;
  ...

#ifndef AAA
  x = 1;
#else1  /* Noncompliant */
  x = AAA;
#endif

  ...
  return x;
}
```

Compliant Solution

```
#define AAA 2
...
int foo(void)
{
  int x = 0;
  ...

#ifndef AAA
  x = 1;
#else
  x = AAA;
#endif

  ...
  return x;
}
```

See

- MISRA C:2004, 19.16 - Preprocessing directives shall be syntactically meaningful even when excluded by preprocessor.
- MISRA C++:2008, 16-0-8 - If the # token appears as the first token on a line, then it shall be immediately followed by a preprocessing token.
- MISRA C:2012, 20.13 - A line whose first token is # shall be a valid preprocessing directive

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