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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

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

Relational and subtraction operators should not be used with pointers to different arrays

Analyze your code

Bug Critical cppcoreguidelines based-on-misra

Attempting to make a comparison between pointers using >, >=, < or <= will produce undefined behavior if the two pointers point to different arrays.

Additionally, directly comparing two arrays for equality or inequality has been deprecated in C++.

However, equality or inequality between an array and a pointer is still valid

Noncompliant Code Example

```
void f1 ( )
{
  int a1[ 10 ];
  int a2[ 10 ];
  int * p1 = a1;
  if ( p1 < a2 ) // Non-compliant, p1 and a2 point to differe
  {
  }
  if ( p1 - a2 > 0 ) // Non-compliant, p1 and a2 point to dif
  {
  }
  if ( a1 == a2) // Non-compliant (in C++). Comparing differe
  {
  }
}
```

Compliant Solution

```
void f1 ( )
{
  int a1[ 10 ];
  int * p1 = a1;
  if ( p1 < a1 ) // Compliant, p1 and a1 point to the same ar
  {
  }
  if ( p1 - a1 > 0 )  // Compliant, p1 and a1 point to the sa
  {
  }
  if ( p1 == a2 ) // Compliant, comparing a pointer and an ar
  {
  }
}
```

See

- MISRA C:2004, 17.3 - >, >=, <, <= shall not be applied to pointer types except where they point to the same array.
- MISRA C++:2008, 5-0-18 - >, >=, <, <= shall not be applied to objects of pointer type, except where they point to the same array.
- C++ Core Guidelines ES.62 - Don't compare pointers into different arrays

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