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C static code analysis

Unique rules to find Bugs, Vulnerabilities, Security Hotspots, and Code Smells in your 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

XML parsers should not be vulnerable to XXE attacks
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

"typedef" names should be unique identifiers

Analyze your code

Code Smell | Major | based-on-misra suspicious

Reusing a `typedef` name either as another `typedef` name or for any other purpose may lead to developer confusion.

The same `typedef` shall not be duplicated anywhere in the project, even if the declarations are identical.

Note that where the type definition is made in a header file, and that header file is included in multiple source files, this rule is not violated.

Noncompliant Code Example

```
{
  typedef unsigned char uint8_t;
}

{
  typedef unsigned char uint8_t; // Noncompliant, redefinitio
}

{
  unsigned char uint8_t; // Noncompliant, reuse of uint8_t fo
}
```

Compliant Solution

```
typedef unsigned char uint8_t;
{
}

{
}

{
  unsigned char myChar;
}
```

See

- MISRA C:2004, 5.3 - A typedef name shall be a unique identifier.
- MISRA C++:2008, 2-10-3 - A typedef name (including qualification, if any) shall be a unique identifier.

Available In:

sonarlint | sonarcloud | sonarqube Developer Edition

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