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C++ static code analysis: Multiline blocks should be enclosed in curly braces

2 minutes

Curly braces can be omitted from a one-line block, such as with an `if` statement or `for` loop, but doing so can be misleading and induce bugs.

This rule raises an issue when the whitespacing of the lines after a one line block indicates an intent to include those lines in the block, but the omission of curly braces means the lines will be unconditionally executed once.

Note that this rule considers tab characters to be equivalent to 1 space. If you mix spaces and tabs you will sometimes see issues in code which look fine in your editor but are confusing when you change the size of tabs.

Noncompliant Code Example

```
if (condition)
  firstActionInBlock();
  secondAction();  // Noncompliant; executed unconditionally
thirdAction();

if (condition) firstActionInBlock(); secondAction();  // Noncompliant;
secondAction executed unconditionally

if (condition) firstActionInBlock();  // Noncompliant
  secondAction();  // Executed unconditionally

if (condition); secondAction();  // Noncompliant; secondAction
executed unconditionally

String str = null;
for (int i = 0; i < array.length; i++)
  str = array[i];
  doTheThing(str);  // Noncompliant; executed only on last array
element
```

Compliant Solution

```
if (condition) {
  firstActionInBlock();
  secondAction();
}
thirdAction();

String str = null;
for (int i = 0; i < array.length; i++) {
  str = array[i];
  doTheThing(str);
}
```

See

- MITRE, CWE-483 - Incorrect Block Delimitation