

C2X Proposal: WG14 N2508

Title: Free Positioning of Labels Inside Compound Statements (updates N2496)
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This provides updated wording changes for N2496 based on comments from the reflector. In particular, the syntax is made unambiguous and by introducing unlabeled statements as suggested by Joseph Myers and there is wording for the fallthrough attribute.

Suggested Wording Changes

6.8 Statements and blocks

Syntax

statement:
 labeled-statement
 unlabeled-statement

unlabeled-statement:
 compound-statement
 expression-statement
 selection-statement
 iteration-statement
 jump-statement

6.8.1 Labeled statements

Syntax

label:
 attribute-specifier-sequence_{opt} identifier :
 attribute-specifier-sequence_{opt} case constant-expression :
 attribute-specifier-sequence_{opt} default :

labeled-statement:
 ~~attribute-specifier-sequence_{opt} identifier :~~ **label** statement
 ~~attribute-specifier-sequence_{opt} case constant-expression :~~ **label** statement
 ~~attribute-specifier-sequence_{opt} default :~~ **label** statement

6.8.2 Compound statement

Syntax

compound-statement:
 { block-item-list opt }

block-item-list:
 block-item
 block-item-list block-item

block-item:
 declaration
 unlabeled-statement
 label

Semantics

A compound statement is a block. **A label shall be translated as if it were followed by a null statement.**

6.5.2.5 Compound literals

16 Note that if an iteration statement were used instead of an explicit goto and a ~~labeled-statement~~, the lifetime of the unnamed object would be ...

6.8.3 Expression and null statements

~~EXAMPLE 3 A null statement can also be used to carry a label just before the closing } of a compound statement~~

~~(the example code should also be removed)~~

6.8.4.2 The switch statement

5 ... Otherwise, if there is a default label, control jumps to the ~~labeled~~ statement **following the default label.** ...

6.8.6.2 The continue statement

(in the examples, the now needless semicolon can be removed)

Changes relative to N2408 “The fallthrough attribute” and N2482

6.7.11.2 Fallthrough attribute

Constraints

1 ... The next block item (6.8.2) that would be encountered after a fallthrough declaration shall be ~~a labeled statement whose label is~~ a case label or default label ~~for the same~~ **associated with the smallest enclosing** switch statement.

Optional Additional Change

6.11.X Labeled Statements

Labels outside of compound statements are an obsolescent feature.