

## C Operator Precedence Table

This page lists C operators in order of *precedence* (highest to lowest). Their *associativity* indicates in what order operators of equal precedence in an expression are applied.

| Operator   | Description   | Associativity |
|--|---|---------------|
| ()<br>[]<br>.<br>-><br>++ --                               | Parentheses (function call)<br>Brackets (array subscript)<br>Member selection via object name<br>Member selection via pointer<br>Postfix increment/decrement  | left-to-right |
| ++ --<br>+ -<br>! ~<br>( <i>type</i> )<br>*<br>&<br>sizeof | Prefix increment/decrement<br>Unary plus/minus<br>Logical negation/bitwise complement<br>Cast (convert value to temporary value of <i>type</i> )<br>Dereference<br>Address (of operand)<br>Determine size in bytes on this implementation | right-to-left |
| * / %  | Multiplication/division/modulus   | left-to-right |
| + -  | Addition/subtraction  | left-to-right |
| << >>  | Bitwise shift left, Bitwise shift right   | left-to-right |
| < <=<br>> >=   | Relational less than/less than or equal to<br>Relational greater than/greater than or equal to  | left-to-right |
| == !=  | Relational is equal to/is not equal to  | left-to-right |
| &  | Bitwise AND   | left-to-right |
| ^  | Bitwise exclusive OR  | left-to-right |
|  | Bitwise inclusive OR  | left-to-right |
| &&   | Logical AND   | left-to-right |
|  | Logical OR  | left-to-right |
| ? :  | Ternary conditional   | right-to-left |
| =<br>+= -=<br>*= /=<br>%= &=<br>^=  =<br><<= >>=           | Assignment<br>Addition/subtraction assignment<br>Multiplication/division assignment<br>Modulus/bitwise AND assignment<br>Bitwise exclusive/inclusive OR assignment<br>Bitwise shift left/right assignment                                 | right-to-left |
| ,  | Comma (separate expressions)  | left-to-right |