MATLAB Function Reference

Logical Operators: Short-circuit && ||

Logical operations, with short-circuiting capability

Syntax

Description

The symbols `&&` and || are the logical `AND` and `OR` operators used to evaluate logical expressions. Use `&&` and || in the evaluation of compound expressions of the form

```
expression_1 && expression_2
```

where `expression_1` and `expression_2` each evaluate to a scalar logical result.

The `&&` and || operators support short-circuiting. This means that the second operand is evaluated only when the result is not fully determined by the first operand. See Short-Circuit Operators in the MATLAB documentation for a discussion on short-circuiting with `&&` and ||.

> **Note** Always use the `&&` and || operators when short-circuiting is required. Using the elementwise operators (`&` and |) for short-circuiting can yield unexpected results.

Examples

In the following statement, it doesn't make sense to evaluate the relation on the right if the divisor, `b`, is zero. The test on the left is put in to avoid generating a warning under these circumstances:

```
x = (b ~= 0) && (a/b > 18.5)
```

By definition, if any operands of an `AND` expression are `false`, the entire expression must be `false`. So, if `(b ~= 0)` evaluates to `false`, MATLAB assumes the entire expression to be `false` and terminates its evaluation of the expression early. This avoids the warning that would be generated if MATLAB were to evaluate the operand on the right.

See Also

`all`, `any`, `find`, `logical`, `xor`, `true`, `false`

Logical Operators: Elementwise & | ~

Relational Operators < > <= >= == ~=

◀ Logical Operators: Elementwise & | ~ Special Characters [ ] ( ) {} = ' . ... , ; : % ! @ ▶