

MATLAB Logical Operators

Logical Operators

- Logical operator: uses logical values as operands (typically in conjunction w/ relational operators)

- Basic syntax:

relation1 logicalOperator relation2

- Result: MATLAB `logical` (Boolean)

- `false` (0)
- `true` (1)

Operator	Description
<	Less than
<=	Less than or equal to
>	Greater than
>=	Greater than or equal to
==	Equal to
~=	Not equal to

Operator	Description
&	AND. True if both <code>relation1</code> and <code>relation2</code> are true.
&&	Short-circuit AND. True if both <code>relation1</code> and <code>relation2</code> are true.
	OR. True if either <code>relation1</code> or <code>relation2</code> are true.
	Short-circuit OR. True if either <code>relation1</code> or <code>relation2</code> are true.
~	NOT. Converts a true to false (and vice versa)

Logical Operators

- Short-circuiting: `relation2` is evaluated only if result is not fully determined by `relation1`

- Example:

```
(1 > 2) && (1 > 5)
```

- Use short-circuiting for scalars

Operator	Description
<code>&</code>	AND. True if both <code>relation1</code> and <code>relation2</code> are true.
<code>&&</code>	Short-circuit AND. True if both <code>relation1</code> and <code>relation2</code> are true.
<code> </code>	OR. True if either <code>relation1</code> or <code>relation2</code> are true.
<code> </code>	Short-circuit OR. True if either <code>relation1</code> or <code>relation2</code> are true.
<code>~</code>	NOT. Converts a true to false (and vice versa)