# Boolean expressions

**On this page**

## Fixed values

Only two values will be accepted / returned: **`true`** and **`false`**.

## Logical operators

The following logical operators can be used for linking logical terms in an expression, i.e., terms that return a boolean value type (**true** or **false**).

| Operator | Meaning | Precedence |
|---|---|---|
| **`NOT or !`** | logical negation | 1 (highest) |
| **`AND or &`** | logical conjunction | 2 |
| **`OR or \|`** | logical disjunction | 3 |
| **`XOR`** | exclusive or, i.e., **`a XOR b`** is equivalent to **`a AND !b OR !a AND b`** | 3 |
| **`IMPLIES or IMP`** | logical implication, i.e., **`a IMPLIES b`** is equivalent to **`!a OR b`** | 4 |
| **`XNOR or EQV`** | logical equivalence, i.e., **`a EQV b`** is equivalent to **`a IMPLIES b AND b IMPLIES a`** | 4 (lowest) |

Logical connectives are case insensitive, i.e., they can also be written in lower case: **`or, and, not, xor, implies, imp, eqv`** and **`xnor`**.

## Conditional operator: ? **:** (IF, THEN, ELSE)

The conditional operator **`? :`** is a powerful operator to construct conditional expressions.

> The conditional operator basically allows you to construct the following expression: **IF** boolean _expression **true THEN** term_1 **ELSE** term_2.
>
> The format to be used is: <boolean_expression> ? <term_1> : <term_2>
>
> Both **term_1** and **term_2** need to be of the same **data type** (**boolean, number, string, issue list, string list** or **number list**).

### Examples of using the conditional operator

| Expression | Output |
|---|---|
| **`{...duedate} != null ? ({...duedate} - {...currentDateTime}) / {HOUR} : 0`** | **If** the **Due Date** is **`not null`**, this function will return the number of **hours from the current date-time** to **Due Date**, otherwise it will return **`0`** . |
| **`timePart({...currentDateTime}, LOCAL) > 21:00 AND timePart({...currentDateTime}, LOCAL) < 7:00 ? "Night" : "Day"`** | **If** the current time is **between 21:00 and 7:00** this function will return "**`Night`**" , otherwise it will return "**`Day`**". |

## Examples

| Input | Output |
|---|---|
| **`%{...somefield} = "Yes"`** | **`True`** if the value of the field is "Yes", otherwise **`False`**. |
| **`%{...somefield1} != null AND %{...somefield2} = null`** | **`True`** only if **{...somefield1}** field **has a value** and field **{...somefield2}** does **NOT have a value**. |

| | |
|---|---|
| **`datePart({...duedate}, LOCAL) > datePart({...currentDateTime}, LOCAL)`** | **`True`** only if **Due Date** (field code **{...duedate}**) is later than **Current date** (field code **{...currentDateTime}**) in server's local timezone. |