

# ISNULL Function

The `ISNULL` function tests whether a column of values contains null values. For input column references, this function returns `true` or `false`.

- The `NULL` function generates null values. See *NULL Function*.
- Null values are different from missing values.
  - To test for missing values, see *ISMISSING Function*.

**Wrangle vs. SQL:** This function is part of Wrangle , a proprietary data transformation language. Wrangle is not SQL. For more information, see *Wrangle Language*.

## Basic Usage

```
isnull(Qty)
```

**Output:** Returns `true` if the value in the `Qty` column is null.

## Syntax and Arguments

```
isnull(column_string)
```

Argument	Required?	Data Type	Description
column_string	Y	string	Name of column or string literal to be applied to the function

For more information on syntax standards, see *Language Documentation Syntax Notes*.

### column\_string

Name of the column or string literal to be tested for null values.

- Missing literals or column values generate missing string results.
- Multiple columns and wildcards are not supported.

### Usage Notes:

Required?	Data Type	Example Value
Yes	String literal or column reference	myColumn

### Valid data type strings:

When referencing a data type within a transform, you can use the following strings to identify each type:

**NOTE:** In Wrangle transforms, these values are case-sensitive.

**NOTE:** When specifying a data type by name, you must use the String value listed below. The Data Type value is the display name for the type.

Data Type	String
String	'String'
Integer	'Integer'
Decimal	'Float'
Boolean	'Bool'
Social Security Number	'SSN'
Phone Number	'Phone'
Email Address	'Emailaddress'
Credit Card	'Creditcard'
Gender	'Gender'
Object	'Map'
Array	'Array'
IP Address	'Ipaddress'
URL	'Url'
HTTP Code	'Httpcodes'
Zip Code	'Zipcode'
State	'State'
Date / Time	'Datetime'

## Examples

**Tip:** For additional examples, see *Common Tasks*.

### Example - Type check functions

This example illustrates how various type checking functions can be applied to your data.

#### Functions:

Item	Description
VALID Function	Tests whether a set of values is valid for a specified data type and is not a null value.
ISMISMATCHED Function	Tests whether a set of values is not valid for a specified data type.
ISMISSING Function	The ISMISSING function tests whether a column of values is missing or null. For input column references, this function returns <code>true</code> or <code>false</code> .
ISNULL Function	The ISNULL function tests whether a column of values contains null values. For input column references, this function returns <code>true</code> or <code>false</code> .
NULL Function	The NULL function generates null values.

#### Source:

Some source values that should match the State and Integer data types:

State	Qty
CA	10
OR	-10
WA	2.5
ZZ	15
ID	
	4

**Transformation:**

**Invalid State values:** You can test for invalid values for State using the following:

<b>Transformation Name</b>	New formula
<b>Parameter: Formula type</b>	Single row formula
<b>Parameter: Formula</b>	ISMISMATCHED (State, 'State')

The above transform flags rows 4 and 6 as mismatched.

**NOTE:** A missing value is not valid for a type, including String type.

**Invalid Integer values:** You can test for valid matches for Qty using the following:

<b>Transformation Name</b>	New formula
<b>Parameter: Formula type</b>	Single row formula
<b>Parameter: Formula</b>	(ISVALID (Qty, 'Integer') && (Qty > 0))
<b>Parameter: New column name</b>	'valid_Qty'

The above transform flags as valid all rows where the Qty column is a valid integer that is greater than zero.

**Missing values:** The following transform tests for the presence of missing values in either column:

<b>Transformation Name</b>	New formula
<b>Parameter: Formula type</b>	Single row formula
<b>Parameter: Formula</b>	(ISMISSING(State)    ISMISSING(Qty))
<b>Parameter: New column name</b>	'missing_State_Qty'

After re-organizing the columns using the move transform, the dataset should now look like the following:

State	Qty	mismatched_State	valid_Qty	missing_State_Qty
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CA	10	false	true	false
OR	-10	false	false	false
WA	2.5	false	false	false
ZZ	15	true	true	false
ID		false	false	true
	4	false	true	true

Since the data does not contain null values, the following transform generates null values based on the preceding criteria:

<b>Transformation Name</b>	New formula
<b>Parameter: Formula type</b>	Single row formula
<b>Parameter: Formula</b>	((mismatched_State == 'true')    (valid_Qty == 'false')    (missing_State_Qty == 'true')) ? NULL() : 'ok'
<b>Parameter: New column name</b>	'status'

You can then use the ISNULL check to remove the rows that fail the above test:

<b>Transformation Name</b>	Filter rows
<b>Parameter: Condition</b>	Custom formula
<b>Parameter: Type of formula</b>	Custom single
<b>Parameter: Condition</b>	ISNULL('status')
<b>Parameter: Action</b>	Delete matching rows

### Results:

Based on the above tests, the output dataset contains one row:

State	Qty	mismatched_State	valid_Qty	missing_State_Qty	status
CA	10	false	true	false	ok