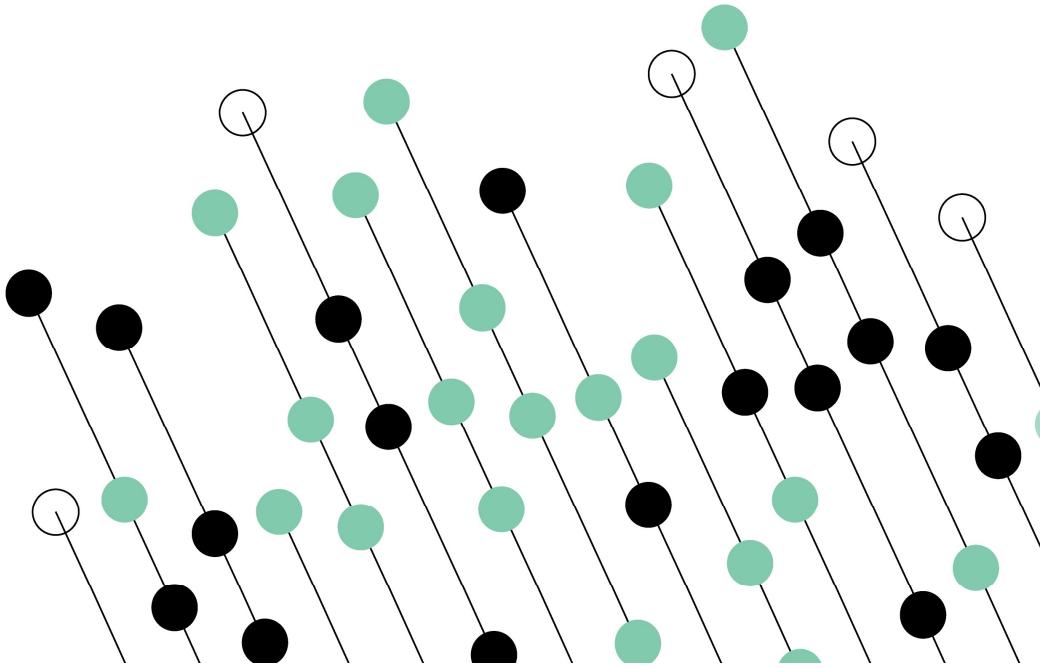
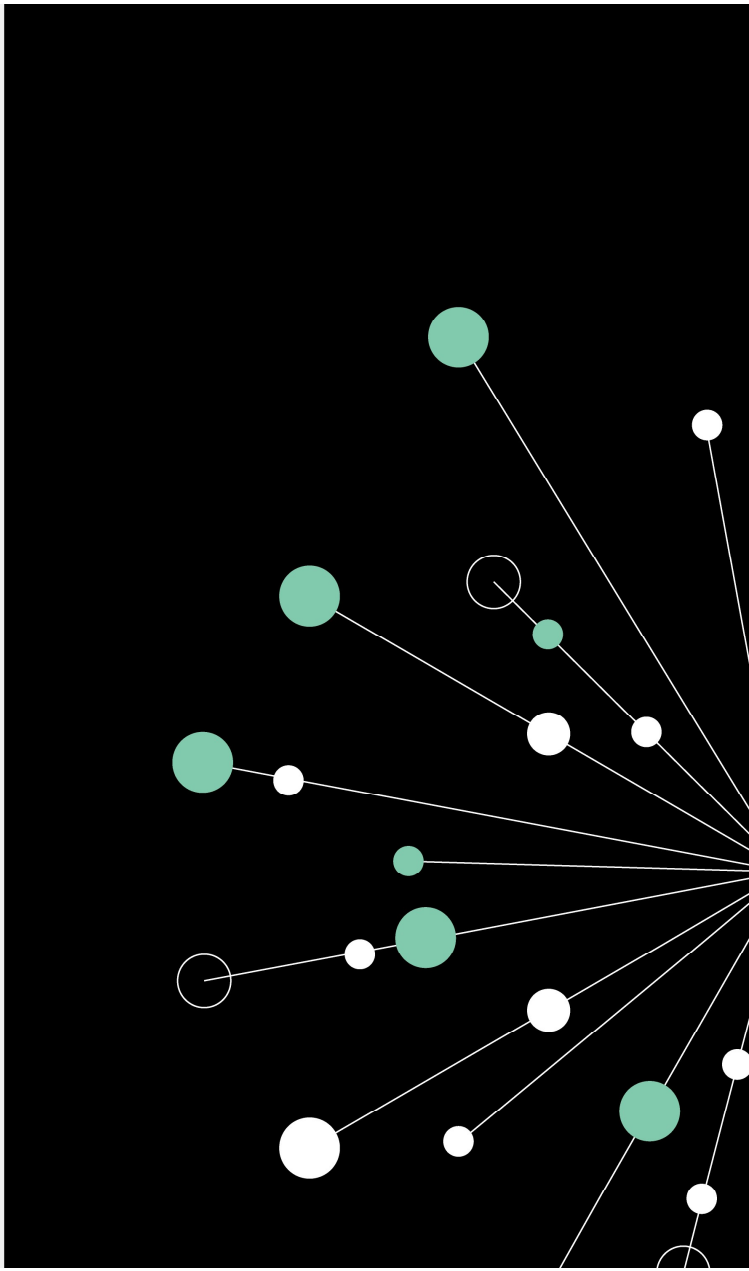
SQL: Common Functions



SQL

Contents:

- Functions
- Text functions
- Date functions
- Working with nulls
- Data conversion functions



QA

Functions

Functions are stored sets of SQL statements that return a result.

- Scalar functions return a single value.
- Table-valued functions (TVF) return tables of data.

Functions usually require parameters to be passed to them, which normally include the name of the column that we want to perform the calculation against and possibly some other information.

Text functions

LEFT / RIGHT (*expr, n*)
return the left / right -most *n* characters of *expr*

UPPER / LOWER (*expr*)
Convert *expr* to all UPPERCASE or all lowercase letters

SUBSTRING (*expr, start, length*)
Take *length* letters from *expr*, starting from *start*

Date functions

GETDATE() / GETUTCDATE()
Retrieve the current system data and time

DATEDIFF(*part, startDate, endDate*)
Return the number of *part*s difference between *start* and *end*

DATEPART(*part, expr*)
Return the *part* value of *expr as an integer*

DATENAME(*part, expr*)
Return the *part* value of *expr as an string*

Dealing with nulls

ISNULL(*expr, null-value*)
If *expr* IS NULL, return *null-value*

NULLIF(expr1, expr2)

If expr1 equals expr2, return NULL

COALESCE(*expr1, expr2, ..., exprN*)
Return the first non-null value in the list of expressions:
IF expr1 IS NULL, return expr2 unless that is also null in which case return exprN, otherwise return expr1.

Conversion functions

CAST(*expr* AS *type*)

CONVERT(*type, expr*)

CONVERT(*type, expr, format*)

Cast and Convert do the same job in most cases.

Where Convert really comes into its own is when we use the optional, third, *format code* parameter which enables us to ask for an alternative format, especially useful for dates:

CONVERT(varchar(20), OrderDate, 103) -- UK Date format

CONVERT(varchar(20), OrderDate, 106) -- dd MON yy format

Date / time format codes

Without century	With century	Input/Output	Standard
0	100	mon dd yyyy hh:miAM/PM	Default
1	101	mm/dd/yyyy	US
2	102	yyyy.mm.dd	ANSI
3	103	dd/mm/yyyy	British/French
4	104	dd.mm.yyyy	German
5	105	dd-mm-yyyy	Italian
6	106	dd mon yyyy	-
7	107	Mon dd, yyyy	-
8	108	hh:mm:ss	-
9	109	mon dd yyyy hh:mi:ss:mmmAM (or PM)	Default + millisec
10	110	mm-dd-yyyy	USA
11	111	yyyy/mm/dd	Japan
12	112	yyyymmdd	ISO
13	113	dd mon yyyy hh:mi:ss:mmm	Europe (24 hour clock)>
14	114	hh:mi:ss:mmm	24 hour clock
20	120	yyyy-mm-dd hh:mi:ss	ODBC canonical (24 hour clock)
21	121	yyyy-mm-dd hh:mi:ss.mmm	ODBC canonical (24 hour clock)

Rounding numbers

ROUND(expr, length)

When length is positive or zero the expression will be rounded to the number of decimal positions specified.

CAST(expr AS INT)

- No rounding will be done

Examples:

SELECT CAST(10.6 AS INT) -- Will give an answer of 10

SELECT ROUND(10.6, 0) -- Will give an answer of 11