

Aggregate Functions in SQL-server

Other Aggregate functions used in SQL server-2014 are

- APPROX_COUNT_DISTINCT
- CHECKSUM_AGG
- COUNT_BIG
- GROUPING
- GROUPING_ID
- STDEV
- STDEVP
- STRING_AGG
- VAR
- VARP

GROUPING

Indicates whether a specified column expression in a GROUP BY list is aggregated or not. GROUPING returns 1 for aggregated or 0 for not aggregated in the result set. GROUPING can be used only in the SELECT <select> list, HAVING, and ORDER BY clauses when GROUP BY is specified.

Syntax

GROUPING (<column_expression>)

Arguments:

<column_expression>

Is a column or an expression that contains a column in a GROUP BY clause.

Return type

int

GROUPING_ID

Is a function that computes the level of grouping. GROUPING_ID can be used only in the SELECT <select> list, HAVING, or ORDER BY clauses when GROUP BY is specified.

Syntax

GROUPING_ID (<column_expression>[,...n])

Arguments

<column_expression>

Is a column_expression in a GROUP BY clause.

Return type

Int

STDEV

Returns the statistical standard deviation of all values in the specified expression.

Syntax

STDEV ([ALL | DISTINCT] expression)

Arguments

ALL

Applies the function to all values. ALL is the default.

DISTINCT

Specifies that each unique value is considered.

expression

Is a numeric *expression*. Aggregate functions and subqueries are not permitted. *expression* is an expression of the exact numeric or approximate numeric data type category, except for the **bit** data type.

OVER ([*partition_by_clause*] *order_by_clause*)

partition_by_clause divides the result set produced by the FROM clause into partitions to which the function is applied

Return type

Float

STDEVP

Returns the statistical standard deviation for the population for all values in the specified expression.

STDEVP ([ALL | DISTINCT] expression)

Arguments

ALL

Applies the function to all values. ALL is the default.

DISTINCT

Specifies that each unique value is considered.

expression

Is a numeric expression. Aggregate functions and subqueries are not permitted. *expression* is an expression of the exact numeric or approximate numeric data type category, except for the **bit** data type.

OVER ([*partition_by_clause*] *order_by_clause*)

partition_by_clause divides the result set produced by the FROM clause into partitions to which the function is applied.

Return Types

float

VAR

Returns the statistical variance of all values in the specified expression.

Syntax

VAR ([ALL | DISTINCT] expression)

Arguments

ALL

Applies the function to all values. ALL is the default.

DISTINCT

Specifies that each unique value is considered.

expression

Is an expression of the exact numeric or approximate numeric data type category, except for the **bit** data type. Aggregate functions and subqueries are not permitted.

OVER ([partition_by_clause] order_by_clause)

partition_by_clause divides the result set produced by the FROM clause into partitions to which the function is applied.

Return Types

float

VARP

Returns the statistical variance for the population for all values in the specified expression.

Syntax

VARP ([ALL | DISTINCT] expression)

Arguments

ALL

Applies the function to all values. ALL is the default.

DISTINCT

Specifies that each unique value is considered.

expression

Is an expression of the exact numeric or approximate numeric data type category, except for the **bit** data type. Aggregate functions and subqueries are not permitted.

OVER ([*partition_by_clause*] *order_by_clause*)

partition_by_clause divides the result set produced by the FROM clause into partitions to which the function is applied.

Return Types

float

STRING_AGG

Concatenates the values of string expressions and places separator values between them. The separator is not added at the end of string.

Syntax

STRING_AGG (expression, separator) [<order_clause>]

Arguments

expression

Is an expression of any type. Expressions are converted to NVARCHAR or VARCHAR types during concatenation. Non-string types are converted to NVARCHAR type.

separator

Is an expression of NVARCHAR or VARCHAR type that is used as separator for concatenated strings. It can be literal or variable.

<*order_clause*>

Optionally specify order of concatenated results using WITHIN GROUP clause:

syntaxsql

WITHIN GROUP (ORDER BY <order_by_expression_list> [ASC | DESC])

<order_by_expression_list>

A list of non-constant expressions that can be used for sorting results. Only one order_by_expression is allowed per query. The default sort order is ascending.

Return Types

Return type is depends on first argument (expression). If input argument is string type (NVARCHAR, VARCHAR), result type will be same as input type. The following table lists automatic conversions:

input expression type	Result
NVARCHAR(MAX)	NVARCHAR(MAX)
VARCHAR(MAX)	VARCHAR(MAX)
NVARCHAR(1...4000)	NVARCHAR(4000)
VARCHAR(1...8000)	VARCHAR(8000)
int, bigint, smallint, tinyint, numeric, float, real, bit, decimal, smallmoney, money, datetime, datetime2,	NVARCHAR(4000)

COUNT_BIG

This function returns the number of items found in a group. COUNT_BIG operates like the COUNT function. These functions differ only in the data types of their return values. COUNT_BIG always returns a **bigint** data type value. COUNT always returns an **int** data type value.

Syntax

```
COUNT_BIG ( { [ [ ALL | DISTINCT ] expression ] | * } )
```

Arguments

ALL

Applies the aggregate function to all values. ALL serves as the default.

DISTINCT

Specifies that COUNT_BIG returns the number of unique non-null values.

expression

An expression of any type. COUNT_BIG does not support aggregate functions or subqueries in an expression.

Return types

bigint

CHECKSUM_AGG

This function returns the checksum of the values in group. CHECKSUM_AGG ignores null values. The OVER clause can follow CHECKSUM_AGG.

Syntax

CHECKSUM_AGG ([ALL | DISTINCT] expression)

Arguments

ALL

Applies the aggregate function to all values. ALL is the default argument.

DISTINCT

Specifies that CHECKSUM_AGG returns the checksum of unique values.

expression

An integer expression. CHECKSUM_AGG does not allow use of aggregate functions or subqueries.

Return types

Returns the checksum of all *expression* values as **int**.

APPROX_COUNT_DISTINCT

This function returns the approximate number of unique non-null values in a group.

Syntax

APPROX_COUNT_DISTINCT (expression)

Arguments

expression

An expression of any type, except **image**, **sql_variant**, **ntext**, or **text**.

Return types

bigint