

## 5.1

# Aggregate Functions

### Aggregate Functions

- Aggregate functions are synonymous with column functions.
- A summary query uses at least one column function.
- AVG, SUM return numeric values.
- MIN, MAX, COUNT can return numeric, date, or string values
- All values are included in aggregate functions by default unless you specify the DISTINCT keyword
- Duplicate rows are excluded in all aggregate functions with the exception of COUNT(\*)
- \*\*\*\*\* IF YOU CODE AN AGGREGATE FUNCTION IN THE SELECT STATEMENT, YOU CANNOT ALSO INCLUDE NON-AGGREGATE FUNCTIONS IN THE SELECT STATEMENT UNLESS THOSE NON-AGGREGATE COLUMNS ARE INCLUDED IN A GROUP BY CLAUSE

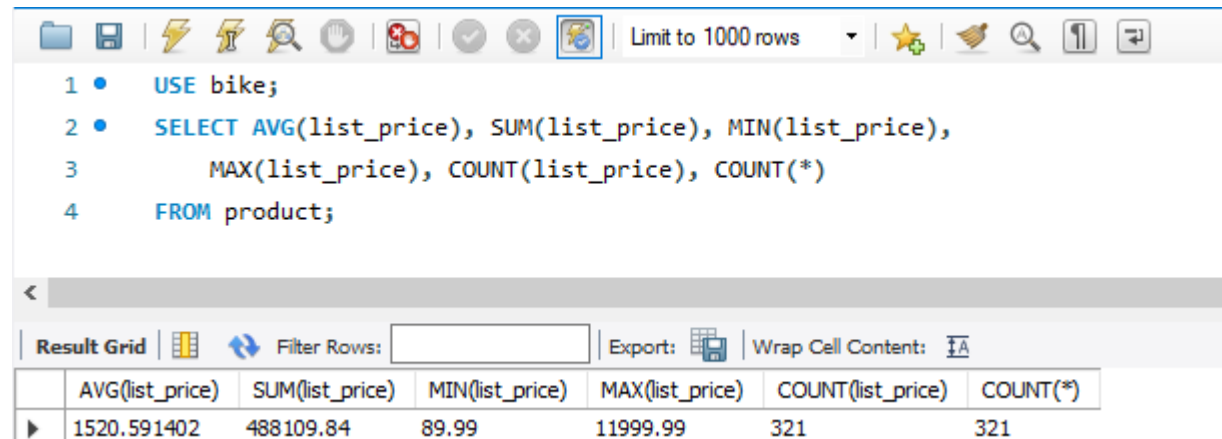
Table 1. Aggregate Functions List

Aggregate Function	Output data-type	Result
AVG([DISTINCT] <i>column_values</i> )	numeric	The average of the non-null columns in the expression
SUM([DISTINCT] <i>column_values</i> )	numeric	The total of the non-null columns in the expression
MIN([DISTINCT] <i>column_values</i> )	numeric, date, string	The lowest value off the non-null columns in the expression
MAX([DISTINCT] <i>column_values</i> )	numeric, date, string	The highest value of the non-null columns in the expression
COUNT([DISTINCT] <i>column_values</i> )	numeric	The number of the non-null columns in the expression
COUNT(*)	numeric	The number of rows returned by the query

Code Sample:

```
USE bike;
SELECT AVG(list_price), SUM(list_price), MIN(list_price),
       MAX(list_price), COUNT(list_price), COUNT(*)
FROM product;
```

Output:



The screenshot shows a SQL IDE interface. The top toolbar includes icons for file operations, execution, and a 'Limit to 1000 rows' dropdown. The SQL editor contains the following code:

```
1 • USE bike;
2 • SELECT AVG(list_price), SUM(list_price), MIN(list_price),
3       MAX(list_price), COUNT(list_price), COUNT(*)
4 FROM product;
```

Below the editor is the 'Result Grid' tab, which displays the query results in a table. The table has 7 columns: AVG(list\_price), SUM(list\_price), MIN(list\_price), MAX(list\_price), COUNT(list\_price), and COUNT(\*). The first row contains the values: 1520.591402, 488109.84, 89.99, 11999.99, 321, and 321.

	AVG(list_price)	SUM(list_price)	MIN(list_price)	MAX(list_price)	COUNT(list_price)	COUNT(*)
▶	1520.591402	488109.84	89.99	11999.99	321	321



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