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# AGGREGATE FUNCTIONS IN SQL

SQL Series Part 6

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# WHAT IS FUNCTIONS?

Functions in SQL are the database objects that contains a **set of SQL statements** to perform a specific task. A function **accepts input parameters, perform actions, and then return the result.**

## Types of Function:

1. **System Defined Function** : these are built-in functions

Example: rand(), round(), upper(), lower(), count(), sum(), avg(), max(), etc

2. **User-Defined Function** : Once you define a function, you can call it in the same way as the built-in functions

# AGGREGATE FUNCTIONS

Aggregate function **performs a calculation** on multiple values and returns a single value.

Aggregate functions are often **used with GROUP BY & SELECT statement**

- COUNT() returns number of values
- SUM() returns sum of all values
- AVG() returns average value
- MAX() returns maximum value
- MIN() returns minimum value
- ROUND() Rounds a number to a specified number of decimal places

# AGGREGATE FUNCTION -- SUM

Sum function sum the value of all the rows in the group. If the group by clause is omitted then it sums all the rows.

	customer	payment_type	amount
▶	peter	credit	100
	peter	credit	200
	john	debit	500
	john	debit	200

```
14 • select sum(amount) as Totalamount
15      from payment
16      where customer="peter";
```

	Totalamount
▶	300

# AGGREGATE FUNCTION -- AVG

The aggregate function AVG() returns the **average of a given expression**, usually numeric values in a column.

	customer	payment_type	amount
▶	peter	credit	100
	peter	credit	200
	john	debit	500
	john	debit	200

```
18 • select customer, AVG(amount) as avg_amount
19 from payment
20 group by customer;
```

	customer	avg_amount
▶	peter	150.0000
	john	350.0000

# AGGREGATE FUNCTION -- COUNT

You can count the number of rows or count as per the given expression

Result Grid			
	customer	payment_type	amount
▶	peter	credit	100
	peter	credit	200
	john	debit	500
	john	debit	200

22	/* SELECT count(*) TotalRows
23	FROM payment; */
24	• SELECT payment_type, count(amount)
25	FROM payment
26	GROUP BY payment_type;
27	



  

Result Grid			
	payment_type	count(amount)	
▶	credit	2	
	debit	2	

# AGGREGATE FUNCTION -- MIN

Find the **smallest value** of column



	customer	payment_type	amount
▶	peter	credit	100
	peter	credit	200
	john	debit	500
	john	debit	200

27					
28 •	<code>select min(amount) from payment;</code>				
29					
<					
	Result Grid    Filter Rows: <input type="text"/>   Export:    Wrap Ce				
	<table><tr><th></th><th>min(amount)</th></tr><tr><td>▶</td><td>100</td></tr></table>		min(amount)	▶	100
	min(amount)				
▶	100				

# AGGREGATE FUNCTION -- MAX

Find the **largest value** of column

	customer	payment_type	amount
▶	peter	credit	100
	peter	credit	200
	john	debit	500
	john	debit	200

29					
30 •	<code>select max(amount) from payment;</code>				
31					
<					
	Result Grid    Filter Rows: <input type="text"/>   Export:    Wrap				
	<table><tr><th></th><th>max(amount)</th></tr><tr><td>▶</td><td>500</td></tr></table>		max(amount)	▶	500
	max(amount)				
▶	500				



# AGGREGATE FUNCTION -- ROUND

Rounds a number to specific number of a decimal place.

	order_date	cost_price
▶	2017-10-11	62.22
	2017-10-18	114.24
	2017-10-19	72.42
	2017-11-08	65.28
	2018-03-09	137.7
	2018-03-20	75.48
	2018-03-22	137.7
	2018-03-23	137.7

3 • `SELECT order_date, round(cost_price) FROM sales.transactions;`

	order_date	round(cost_price)
▶	2017-10-11	62
	2017-10-18	114
	2017-10-19	72
	2017-11-08	65
	2018-03-09	138
	2018-03-20	75
	2018-03-22	138
	2018-03-23	138
	2018-03-29	67
	2018-04-16	108
	2018-04-18	72



# THANK YOU!!!

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