Shaping Results with ORDER BY and GROUP BY



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Sometimes you want the result set to be different than the data returned by a simple SELECT statement.

ORDER BY

Allows sorting of result set

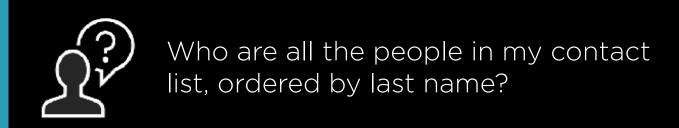
After the WHERE clause (if there is one)

Specify one or more columns

Separate columns by commas

ASC (default) or DESC

SELECT p.last_name, p.first_name FROM person p ORDER BY p.last name;



- **◀ SELECT CLAUSE**
- **▼ FROM CLAUSE**
- **◆** ORDER BY CLAUSE



Set Function

Computes new values from column values
Use in place of columns in SELECT clause
Passes column name to function
Helps us to ask more interesting questions
Often used with the DISTINCT qualifier

Set Functions

Function

COUNT	Count of the column specified (includes NULL values if * is used)
MAX	Maximum value of the column (does not include NULL values)
MIN	Minimum value of the column (does not include NULL values)
AVG	Average of all values of the column (does not include NULL values, only numeric column)
SUM	Sum of all the values of the column (does not include NULL values, only numeric column)

SELECT SUM(p.contacted_number) FROM person p;



■ SELECT CLAUSE WITH THE SUM SET FUNCTION

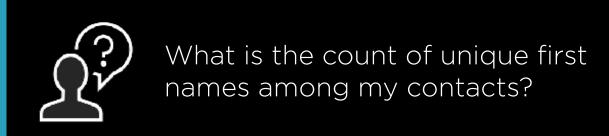


Set Functions + Qualifiers Often used together

Add inside of the function

Run against DISTINCT column values

Review the DISTINCT qualifier section from Module 3 if needed



SELECT
COUNT(DISTINCT p.first_name)
FROM person p;

▼ SELECT CLAUSE WITH THE COUNT SET FUNCTION + DISTINCT QUALIFIER



GROUP BY

Allows multiple columns with a set function Breaks result set into subsets Runs set function against each subset Result set returns 1 row per subset Subset is dictated by column in GROUP BY Column must appear in the SELECT LIST Appears after FROM and/or WHERE Clauses

What is the count of every unique first name among my contacts?

SELECT
COUNT(p.first_name),
p.first_name
FROM person p
GROUP BY p.first_name;

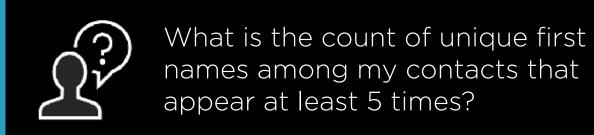
■ SELECT CLAUSE WITH THECOUNT SET FUNCTION

- **◆GROUP BY COLUMN in SELECT LIST**
- **◆GROUP BY CLAUSE**



HAVING

Works like WHERE works against SELECT Restricts the result set



```
SELECT
COUNT(DISTINCT p.first_name),
p.first_name
FROM person p
GROUP BY p.first_name
HAVING COUNT(DISTINCT
p.first_name) >= 5;
```

- **■** SELECT CLAUSE WITH THE COUNT SET FUNCTION
- **◆GROUP BY COLUMN in SELECT**LIST

◆HAVING CLAUSE

Summary

Answering more complex questions requires more complex queries

ORDER BY to sort result sets

SET functions to roll-up or slice

GROUP BY to create subsets

HAVING to restrict GROUP BY