

Shaping Results with ORDER BY and GROUP BY



Jon Flanders

@jonflanders www.jonflanders.com

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



Who are all the people in my contact list, ordered by last name?

```
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)



What is the total number of times I've contacted my contacts?

```
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



What is the count of unique first names among my contacts?

```
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 THE COUNT SET FUNCTION**
- ◀ **GROUP BY COLUMN in SELECT LIST**
- ◀ **GROUP BY CLAUSE**



HAVING

Works like WHERE works against SELECT
Restricts the result set



What is the count of unique first names among my contacts that appear at least 5 times?

```
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