SQL  
Structured Query Language

**Commands:**

SELECT \* FROM table – get all rows and columns from table

SELECT column\_name FROM table\_name – get a specific column from table

SELECT DISTINCT column FROM table\_name – get all distinct values from the specified column (no duplicate values)

SELECT COUNT(\*) FROM table – returns how many rows there are in the table. The result will be the same regardless if you enter a column\_name or not.



SELECT COUNT(DISTINCT column\_name)

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  
  
SELECT c\_name FROM table WHERE conditions;  
Conditions can be:

- =, >, <, !=, >=, <=  
 - BETWEEN X AND Y  
 - IN (X, Y, Z)  
 - LIKE ‘A%’/’%A’ - string starts with “A” and then can have any number of characters. ‘\_A%’ means there can be one character of any kind before A. You can add multiple \_ \_ \_ before or after. LIKE is case-sensitive, you can use ILIKE for not case-sensitive queries

Conditions can be chained with AND/OR

SELECT X FROM Y ORDER BY column ASC/DESC – sort values in ascending/descending order

LIMIT X – return only X rows

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  
  
AGGREGATE FUNCTIONS

* AVG()
* COUNT()
* MAX()
* MIN()
* SUM()

Aggregate function calls can only happen in the SELECT or the HAVING clauses – SELECT SUM/AVG(c\_name)

GROUP BY – aggregate columns per some category –   
SELECT customer\_id, SUM(amount) FROM table GROUP BY customer\_id;  
  
If we have X customers, some of which have made >1 transactions, we can return the sum of all transactions per customer using GROUP BY

We can filter the aggregate function results using a HAVING clause:  
SELECT customer\_id, SUM(amount) FROM table GROUP BY customer\_id HAVING SUM(amount) > 500;  
which will return all customer\_ids whose sum of transactions is larger than 500

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Adding a semicolon “;” denotes the end of a query