



Introduction to SQL

AGGREGATE FUNCTIONS

SQL Aggregate Functions

- Aggregate functions allow us to easily do jobs such as figure averages or totals, or find the highest value for a given column, among other things
- They perform a calculation on the values in a set of selected rows
- A SELECT statement that includes an aggregate function can be called a *summary query*

Aggregate Functions

- The most commonly used aggregate functions

Function	Description
COUNT(column_name)	Returns the total number of non-null values in a given column
COUNT(*)	Returns the total number of rows in a table
MIN	Returns the smallest value in a specified column
MAX	Returns the largest value in a specified column
SUM	Returns the sum of the numeric values in a specified column
AVG	Returns the average value of a specified column

COUNT(column_name)

SELECT COUNT(city) FROM Customers;

- The above query would return the number of cities that are **NOT NULL** from the **Customers** table. ie: If there were 100 customers in the table, and two of the customers had a null value for **City**, the query would return 98.

COUNT(*)

SELECT COUNT() FROM Customers;*

- The above query would return the number of records in the **Customers** table.

COUNT(DISTINCT column_name)

SELECT COUNT(DISTINCT City) FROM Customers;

- The above query would return the number of **unique cities** in the **Customers** table.

MIN

- **MIN** can be used with **numbers**, **strings** and **dates**

SELECT MIN(ItemPrice) FROM Products;

- The above query would return the **minimum** (lowest) **ItemPrice** from the **Products** table

SELECT MIN(CustomerName) FROM Customers;

- The above query would return the **first CustomerName alphabetically** from the **Customers** table

MAX

- **MAX** can be used with **numbers**, **strings** and **dates**

SELECT MAX(ItemPrice) FROM Products;

- The above query would return the **maximum** (highest) **ItemPrice** from the **Products** table

SELECT MAX(CustomerName) FROM Customers;

- The above query would return the **last CustomerName alphabetically** from the **Customers** table

SUM

SELECT SUM(OrderTotal) FROM Orders;

- The above query would return the **sum** of the **OrderTotal** of ALL the orders in the **Orders** table

AVG

SELECT AVG(OrderTotal) FROM Orders;

- The above query would return the **average OrderTotal** of ALL the orders in the **Orders** table