# Filtering & Subqueries

## Agenda:

🔸 Problem statement

🔸 CONCAT

🔸 UPPER, LOWER

🔸 SUBSTR

🔸 INITCAP

🔸 WHERE clause

🔸 AND, OR, NOT

🔸 IN, BETWEEN

🔸 LIKE, Wildcards

🔸 DISTINCT

🔸 IS NULL, IS NOT NULL

🔸 TRIM()

🔸 Subqueries

🔸 CASE statement

🔸 IF, IFNULL()

## Summary of Previous Lecture:

Problem Statement:

- You're a Data Analyst at Amazon Fresh tasked with growing revenue through farmer's market stores.

Relationships in a Schema:

- Different types of relationships in tables: One-to-One, One-to-Many, Many-to-Many.

- Entity-relationship diagrams depict relationships.

* **One-to-one** relationship occurswhen each row in Table 1 has only one related row in Table 2.
* **One-to-many** occurs when one record in Table 1 is related to one or more records in Table 2.
* **Many-to-many** occurs when multiple records in one table are related to multiple records in another table.

Understanding ER Diagram:

- ER diagrams show entities, attributes, keys, and relationships.

- Used interchangeably with the DB schema.

SQL Commands:

- SQL stands for Structured Query Language.

- Types: DDL (Data Definition), DML (Data Manipulation), TCL (Transaction Control), DQL (Data Query), DCL (Data Control).

SELECT Query:

- **Syntax**: SELECT [columns]

FROM [schema.table]

WHERE [conditions]

ORDER BY [columns]

LIMIT [number]

OFFSET [number]

- SELECT retrieves data, FROM specifies the table, WHERE sets conditions.

- Good practice to specify column names, not use asterisk (\*).

ORDER BY:

- Used to sort query results.

- ASC sorts ascending, DESC sorts descending.

- Multiple columns can be used for sorting.

LIMIT & OFFSET:

- LIMIT limits the number of rows returned.

- OFFSET skips rows before the result set.

- Useful for pagination and top results.

- LIMIT [*no\_of\_first\_n\_rows\_to\_be\_returned*] OFFSET [*no\_of\_rows\_to\_skip*]

Inline Calculation:

- Perform calculations on columns within SELECT queries.

- Use operators (+, -, \*, /) for arithmetic.

- Create aliases for calculated columns with AS.

Alias (AS):

- Assign meaningful names to calculated columns.

- Use AS after the calculation.

- Enclose aliases with single quotes if they contain spaces.

- **Syntax:**

SELECT column1, column2....

FROM table\_name AS alias\_name

WHERE [condition];

ROUND() function:

- Used to round numeric values.

- **Syntax:** ROUND(value, decimal\_places).

- **Example:** ROUND(5.456, 2) returns 5.46.

Functions in SQL:

- Functions modify raw values in queries.

- Syntax: FUNCTION\_NAME(parameters).

- Examples: ROUND(), CEIL(), FLOOR().