Subqueries

Agenda:

In today's session, we'll cover essential topics, including:-
- ◆ DISTINCT
- ◆ IS NULL, IS NOT NULL
- ◆ TRIM()
- ◆ Subqueries
- ◆ CASE statement
- ◆ IF, IFNULL()

come an SQL maestro! 📈🚀

Summary of Previous Lecture:

Problem Statement:
- ● You are a Data Analyst at Amazon Fresh tasked with studying the Farmer's Market.
- ● Dataset: Farmer's Market database.

Concatenating Strings:
- ● Concatenation is combining strings in SQL.
- ● CONCAT() function is used to merge string values together.
- ● Example: Merging first and last names into a full name column.
- ● Syntax: `CONCAT(first_name, " ", last_name) AS full_name`

String Functions:
- - Uppercase and Lowercase (UPPER, LOWER):
    - - Modify the case of string values.
    - - Use UPPER() and LOWER() functions.
    - - Example: UPPER(first_name), LOWER(last_name)
- - Substrings (SUBSTR):
    - - Extract part of a string.
    - - Syntax: SUBSTR(value, position, length).
    - - Example: SUBSTR(last_name, 1, 1) for the first character.
- - InitCap (INITCAP):
    - - Capitalize the first character of each word.
    - - Example: INITCAP(full_name)

Filtering Data - The WHERE Clause:

- WHERE clause filters records in the SELECT statement.
- Example: Selecting products from a specific category.
- Example: WHERE product_category_id = 1

Filtering with Multiple Conditions:
- Using operators (AND, OR, NOT) for multiple conditions
- Combine conditions in filtering.
- `AND`: All conditions must be true.
- `OR`: At least one condition must be true.
- `NOT`: Invert the condition.
- `Syntax:`
  ```
  SELECT *
  FROM product
  WHERE (product_category_id > 3 AND product_category_id <=
  8) OR (product_category_id = 10)
  ```

Range Filtering (BETWEEN):
- Filter rows within a range.
- Syntax: BETWEEN value1 AND value2.
- Example: WHERE market_date BETWEEN "2019-04-03" AND "2019-05-18"

Filtering with Lists (IN):
- Filter rows with specific values.
- Syntax: value IN (list).
- Example: WHERE customer_last_name IN ('Diaz', 'Edwards', 'Wilson')

Excluding Values (NOT IN):
- Exclude rows with specific values.
- Example: WHERE customer_last_name NOT IN ('Diaz', 'Edwards', 'Wilson')

Wildcard Filtering (LIKE):
- Search for partially matched strings.
- Use % for zero or more characters, _ for one character.
- Example: WHERE customer_first_name LIKE "jer%"
- Wildcard Examples:
  - %ah%e matches names like "Michael".
  - a__h%e matches names like "Matthew".
  - a%h%e matches names like "Alexander".