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Day 2 (04/11): Filtering Data with WHERE Clause

🎯 Objective

Learn how to filter rows from a table using conditions to display only relevant data.

🔍 Topics Covered

- **WHERE Clause**
- **OPERATORS USED WITH WHERE CLAUSE**
  - -- COMPARISON OPERATORS
  - -- LOGICAL OPERATORS
  - -- RANGE OPERATOR
  - -- MEMBERSHIP OPERATOR
  - -- SEARCH OPERATOR
  - -- NULLABILITY OPERATOR

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WHERE Clause

The WHERE clause in SQL is used to filter records.
It is used to specify a condition so that only those rows that meet the condition are returned.

SYNTAX

```
SELECT
column1, column2, ...
FROM table_name
WHERE condition;
```

SYNTAX

```
SELECT  *
FROM table_name
WHERE condition;
```

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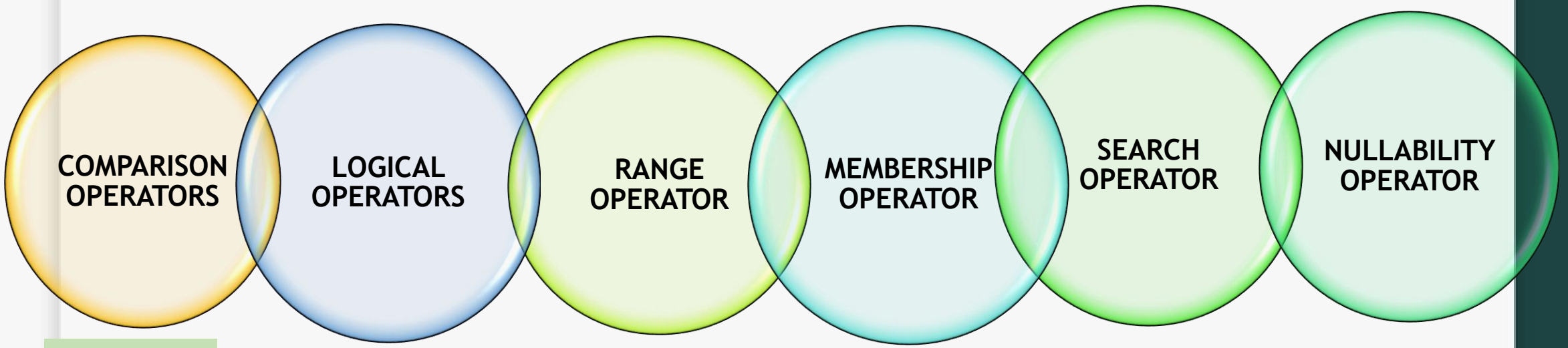
❑ *OPERATORS USED WITH WHERE CLAUSE*

In MySQL, **operators used with the WHERE clause** help filter rows based on specific conditions. These operators are classified into the following categories:



COMPARISON OPERATORS	LOGICAL OPERATORS	RANGE OPERATOR	MEMBERSHIP OPERATOR	SEARCH OPERATOR	NULLABILITY OPERATOR
= <> , != > >= < <=	AND OR NOT	BETWEEN	IN NOT IN	LIKE NOT LIKE	IS NULL IS NOT NULL

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❖ COMPARISON OPERATORS

Comparison operators in SQL are used to compare one value with another in a query condition. They help determine which rows from a table match specific criteria — for example, finding values greater than, less than, or equal to a certain number.

=	Checks if two values are equal
<> !=	Checks if two values are not equal
>	Checks if a value is greater than another value.
>=	Checks if a value is greater than or equal to another value
<	Checks if a value is less than another value
<=	Checks if a value is less than or equal to another value

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❖ LOGICAL OPERATORS

Logical operators are used in SQL to join two or more conditions. They return rows only if the combined condition is true.

AND	All conditions must be TRUE
OR	At least one condition must be TRUE
NOT	(Reverse) Excludes matching values

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❖RANGE OPERATOR

BETWEEN OPERATOR :-

BETWEEN	Check if a value is within a range

The BETWEEN operator is used to **filter values within a specific range** (inclusive of the start and end values).
It works with **numbers**, **dates**, or **text**.

Syntax :-

```
SELECT column_name
FROM table_name
WHERE column_name BETWEEN value1 AND value2;
```

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❖MEMBERSHIP OPERATORS

IN OPERATOR :-

IN	Check if a value exists in a list

The IN operator is used to **check if a value matches any value in a given list.**

Syntax :-

```
SELECT column_name
FROM table_name
WHERE column_name IN (value1, value2, value3, ...);
```

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NOT IN OPERATOR :-

NOT IN Check if a value does not exist in a list

The NOT IN operator is used to filter the records **where a value is *not present* in a given list** of values. It is the opposite of the IN operator.

Syntax :-

```
SELECT column1, column2, ...
FROM table_name
WHERE column_name NOT IN (value1, value2, ...);
```

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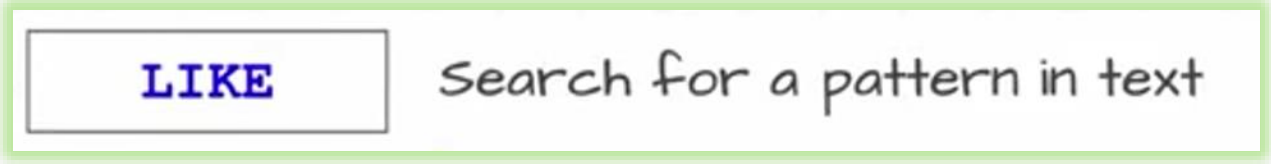
❖SEARCH OPERATORS

LIKE Operator



The LIKE operator in SQL is used to search for values that match a specific pattern in a text column, such as names, cities, or sports.

Syntax :-

```
SELECT column_name
FROM table_name
WHERE column_name LIKE 'pattern';
```

The LIKE operator uses special wildcard characters —

- % represents any number of characters
- _ represents a single character

This makes it useful for finding text that starts with, ends with, or contains certain letters or patterns.

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NOT LIKE Operator

NOT LIKE	Exclude a pattern from the text

The NOT LIKE operator is used to **exclude rows** that match a certain pattern.
It returns rows **where the pattern does not match.**
It is the opposite of the LIKE operator.

Syntax :-

```
SELECT column_name
FROM table_name
WHERE column_name NOT LIKE 'pattern';
```

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❖NULLABILITY OPERATORS

IS NULL / IS NOT NULL

- IS NULL is used to check if a column **has no value** (i.e., it is empty or undefined).
- IS NOT NULL checks if a column **has some value** (i.e., it is not empty).

You **cannot** use = NULL or != NULL — instead, use IS NULL or IS NOT NULL.

Syntax :-

```
SELECT column_name
FROM table_name
WHERE column_name IS NULL;

SELECT column_name
FROM table_name
WHERE column_name IS NOT NULL;
```

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Resources:

SQL Beginner to Advanced For Data...

4.9 (1308) 9032 Enrolled

Beginners to Advanced SQL

SQL Bootcamp Playlist (2025) - Zero to Hero

View full course

Resources:

- CodeEra **13 - WHERE Clause in SQL | Types of Operators | WHERE With C...**
- CodeEra **14 - AND, OR, NOT Operators in SQL | Logical Operators | Wit...**
- CodeEra **15 - SQL BETWEEN & NOT BETWEEN Operator | IN & NOT IN Operat...**
- CodeEra **16-LIKE Operator & Wildcard Characters | NOT LIKE Operator |...**
- Data with Baraa **SQL NULL Functions | COALESCE, ISNULL, NULLIF, IS (NOT) NULL...**
- Amigoscode **PostgreSQL: Where Clause and AND | Course | 2019**

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Practice Questions:

```sql
1   -- Find all patients who are older than 60 years.
2 • SELECT *
3   FROM patients
4   WHERE age > 60 ;
5
6
```

Result Grid | Filter Rows: | Edit: | Export/Import: | Wrap Cell Content:

patient_id	name	age	arrival_date	departure_date	service	satisfaction
PAT-029113eb	Victoria Larson	84	2025-12-22	2025-12-31	surgery	97
PAT-02f2e75d	Thomas Atkins	70	2025-03-27	2025-04-01	emergency	61
PAT-03ae75aa	Jordan Williams	61	2025-08-27	2025-08-30	surgery	97
PAT-03d0b953	Michelle Davis DVM	82	2025-03-09	2025-03-22	emergency	88
PAT-044a304c	George Harper	88	2025-10-05	2025-10-09	surgery	89
PAT-04a8031e	Jake Shaw	83	2025-06-10	2025-06-22	ICU	67
PAT-04be60be	Bradley Johnson DDS	83	2025-11-18	2025-12-02	general_medicine	93
PAT-06a8ea25	Alexander Gomez	83	2025-04-01	2025-04-03	emergency	63
PAT-0b69b6d1	Joann Ferguson	69	2025-07-30	2025-08-04	ICU	63
PAT-0beb4754	Erin Edwards	86	2025-10-15	2025-10-17	general_medicine	66
PAT-0cdbda5c	Nancy Brown	65	2025-11-27	2025-12-10	general_medicine	69
PAT-0d3bf577	David Smith	77	2025-10-20	2025-10-24	surgery	85
PAT-0f8876bf	Aaron Parker	70	2025-11-19	2025-11-23	emergency	79
PAT-0faa8c27	Howard Norman	85	2025-01-17	2025-01-19	emergency	65

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Practice Questions:

```
6    -- Retrieve all staff members who work in the 'Emergency' service.
7 •  SELECT *
8    FROM staff
9    WHERE service = "emergency";
```

Result Grid | Filter Rows: | Edit: | Export/Import: | Wrap Cell Content:

staff_id	staff_name	role	service
STF-02ae59ca	Noah Rhodes	doctor	emergency
STF-094f410b	Ryan Munoz	nurse	emergency
STF-107a58e4	Cristian Santos	doctor	emergency
STF-130577e6	Dylan Miller	nurse	emergency
STF-1ad309f8	Matthew Foster	nursing_assistant	emergency
STF-212d8b31	Daniel Wagner	doctor	emergency
STF-249f63bb	Gabrielle Davis	nurse	emergency
STF-317a74b9	Tommy Walter	nurse	emergency
STF-34c0563d	Michele Williams	nurse	emergency
STF-39082289	Abigail Shaffer	nurse	emergency
STF-434f45a6	Carla Gray	nurse	emergency
STF-4ed3b149	Judy Baker	nursing_assistant	emergency
STF-5ca26577	Allison Hill	doctor	emergency
STF-6f6535f8	Derek Zuniga	nurse	emergency

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Practice Questions:

```sql
-- List all weeks where more than 100 patients requested admission in any service.
SELECT
    week,
    service,
    patients_request
FROM services_weekly
WHERE patients_request > 100;

```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

week	service	patients_request
1	surgery	130
1	general_medicine	201
2	emergency	169
2	general_medicine	183
3	emergency	177
4	emergency	157
4	general_medicine	152
5	emergency	388
5	general_medicine	103
6	emergency	198
7	emergency	127
8	emergency	240
8	general_medicine	105
9	emergency	113
10	emergency	130

Result Grid | Form Editor | Field Types | Query Stats | Executio Plan

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Daily Challenge:

```sql
-- Find all patients admitted to 'Surgery' service
-- with a satisfaction score below 70,
-- showing their patient_id, name, age, and satisfaction score.

SELECT
    patient_id,
    name,
    age,
    satisfaction
FROM patients
WHERE service = "surgery" AND
satisfaction < 70;
```

Result Grid | Filter Rows: | Edit: | Export/Import: | Wrap Cell Content:

patient_id	name	age	satisfaction
PAT-98dd495d	Heather Fields	29	67
PAT-9ab3b294	Felicia Aquilar	7	66
PAT-9fa2fb78	Diane Evans	54	67
PAT-a68b1005	Shelly Spencer	79	63
PAT-a7b89463	Nicole Parrish	84	60
PAT-a7ccb35e	Casey Wilkins	10	64
PAT-b129e285	Mr. Jeffrey Horton	82	60
PAT-b24cb337	Claudia Jordan	10	63