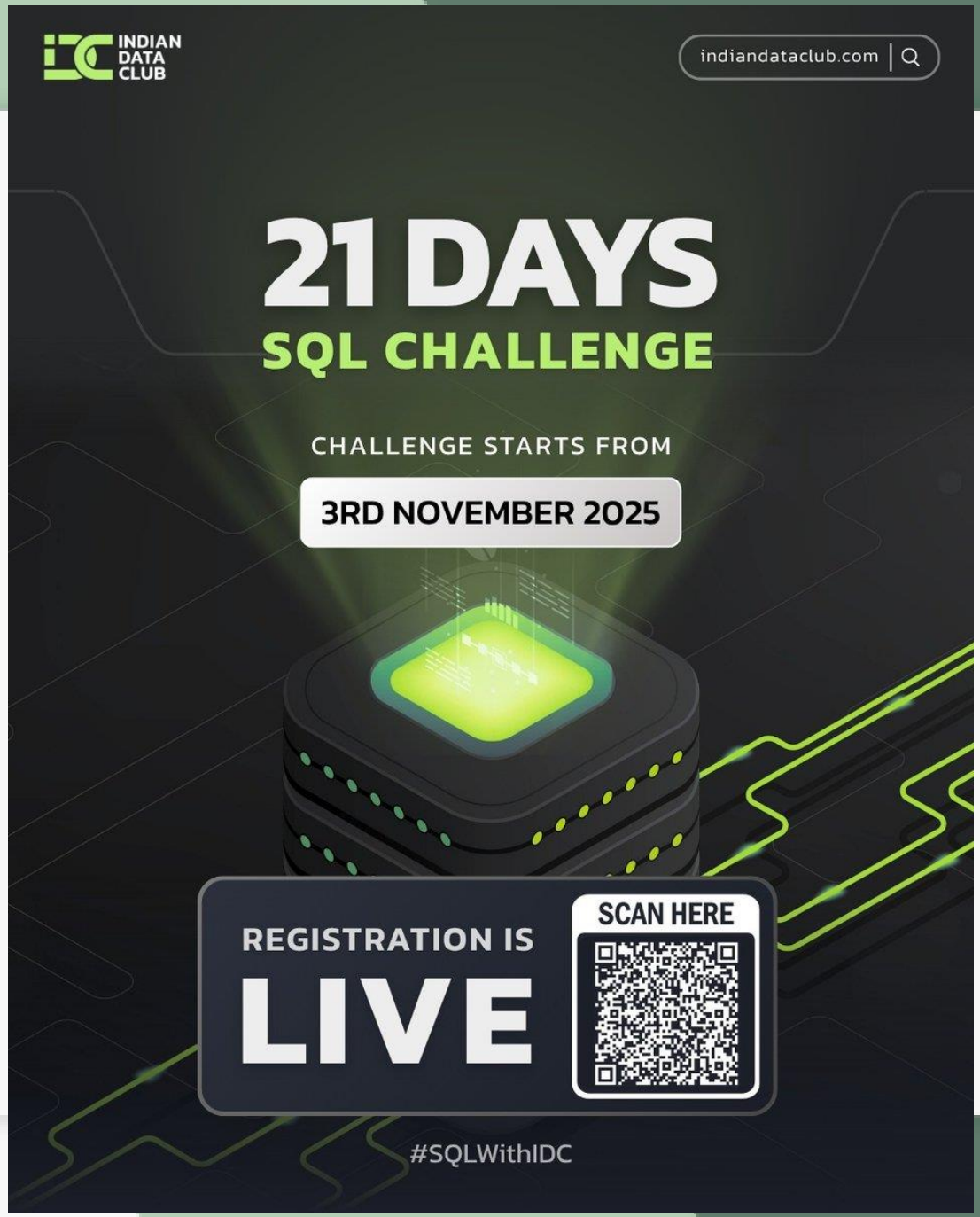
INDIAN DATA CLUB



Day 5 (07/11): Aggregate Functions (COUNT, SUM, AVG, MIN, MAX)

🎯 *Objective*

To learn how to perform calculations on groups of data using SQL aggregate functions to summarize and analyze datasets effectively.

🔍 *Topics Covered*

What are Aggregate Functions and why they are used

- COUNT() → Count total number of rows/records
- SUM() → Add numeric values (e.g., total sales, total revenue)
- AVG() → Calculate average value (e.g., average age, average salary)
- MIN() → Retrieve the smallest value (e.g., earliest date, lowest price)
- MAX() → Retrieve the highest value (e.g., latest date, highest marks)

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AGGREGATE FUNCTIONS

- COUNT() - Counts number of rows
- SUM() - Adds values together
- AVG() - Calculates average
- MAX() - Finds maximum value
- MIN() - Finds minimum value

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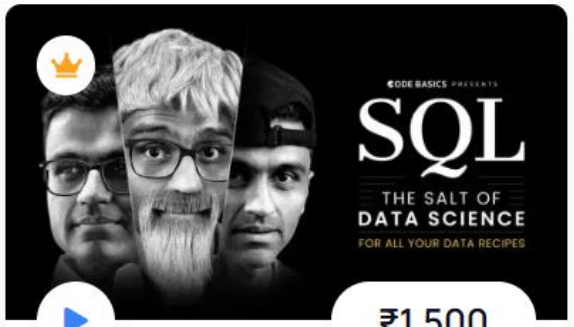
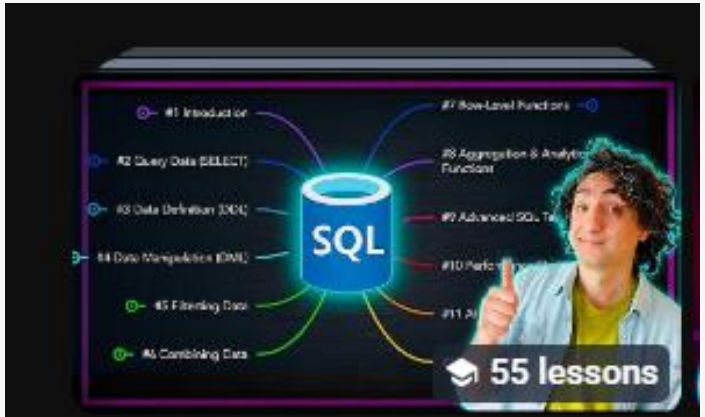
Resources:



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

- Neso Academy **Aggregate Functions in SQL**
- Bro Code **Functions in MySQL are easy**
- Amigoscode **PostgreSQL: Calculating Min, Max & Average | Course | 2019**
- Amigoscode **PostgreSQL: Sum | Course | 2019**

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Practice Questions:

```sql
-- Count the total number of patients in the hospital.
SELECT
    COUNT(*) AS total_patients
FROM patients;
```

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

total_patients
1000

- COUNT(*) → counts all rows in the patients table.
- AS total_patients → gives the result column a readable name.
- FROM patients → specifies the table to count from.

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Practice Questions:

```
6    -- Calculate the average satisfaction score of all patients.
7 •  SELECT
8        AVG(satisfaction) AS Avg_Satisfaction_Score
9    FROM patients ;
```

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

Avg_Satisfaction_Score
79.5970

- AVG(satisfaction) → calculates the average value of the satisfaction column.
- AS Avg_Satisfaction_Score → gives a readable name to the output column.
- FROM patients → specifies the table containing the data.

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Practice Questions:

```
11    -- Find the minimum and maximum age of patients.
12 •  SELECT
13        MIN(age) AS Min_Age,
14        MAX(age) AS Max_Age
15    FROM patients;
```

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

	Min_Age	Max_Age
▶	0	89

- MIN(age) → finds the youngest patient's age.
- MAX(age) → finds the oldest patient's age.
- AS Min_Age and AS Max_Age → rename the output columns for clarity.
- FROM patients → specifies the table to get data from.

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Daily Challenge:

```sql
-- Calculate the total number of patients admitted,
-- total patients refused, and
-- the average patient satisfaction across all services and weeks.
-- Round the average satisfaction to 2 decimal places.
SELECT
    SUM(patients_admitted) AS Total_Patients_Admitted,
    SUM(patients_refused) AS Total_Patients_Refused,
    ROUND(AVG(patient_satisfaction),2) AS Avg_Patient_Satisfy
FROM services_weekly;
```

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

Total_Patients_Admitted	Total_Patients_Refused	Avg_Patient_Satisfy
5851	7642	80.00

- SUM(patients_admitted) → adds all admitted patients.
- SUM(patients_refused) → adds all refused patients.
- AVG(patient_satisfaction) → calculates the average satisfaction score.
- ROUND(..., 2) → limits the average to **2 decimal places**.
- FROM services_weekly → data is taken from the services_weekly table.