### DAY ☀️: \*\*Mini Project – 2: Advanced Student Performance Analyzer\*\*

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### 🎯 \*\*Project Title:\*\*

\*\*Advanced Student Performance Analyzer\*\*

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### 🧠 \*\*Objective:\*\*

To perform advanced SQL operations such as data filtering, sorting, updating, deleting, grouping, and aggregation on a structured student performance dataset.

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### 📦 \*\*Topics Covered:\*\*

- Deleting Data

- Filtering Data

- Comparison Operators

- Logical Operators

- Sorting Data

- LIMIT & DISTINCT

- Alias

- Aggregate Functions

- Grouping Data

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### 🛠️ Step 1: Create Tables

```sql

CREATE TABLE students (

student\_id INT PRIMARY KEY,

name VARCHAR(50),

city VARCHAR(50)

);

CREATE TABLE marks (

mark\_id INT PRIMARY KEY,

student\_id INT,

subject VARCHAR(50),

marks INT

);

```

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### 🛠️ Step 2: Insert Data

```sql

INSERT INTO students VALUES

(1, 'Anjali', 'Delhi'),

(2, 'Rahul', 'Mumbai'),

(3, 'Priya', 'Chennai'),

(4, 'Neha', 'Delhi'),

(5, 'Rohan', 'Pune'),

(6, 'Kiran', 'Mumbai');

INSERT INTO marks VALUES

(101, 1, 'Math', 85),

(102, 1, 'Science', 90),

(103, 2, 'Math', 75),

(104, 2, 'English', 65),

(105, 3, 'Math', 70),

(106, 4, 'Science', 88),

(107, 5, 'English', 80),

(108, 6, 'Science', 45),

(109, 6, 'Math', 55);

```

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### ✅ \*\*SQL Task Questions (20 Tasks)\*\*

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### ⚡ Task 1

\*\*Question:\*\* Delete students who scored less than 50 in any subject.

**Query : DELETE FROM students**

**WHERE student\_id IN (SELECT student\_id FROM marks WHERE marks <50);**

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### ⚡ Task 2

\*\*Question:\*\* Show all students who belong to the city ‘Delhi’.

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**Query : SELECT \* FROM students WHERE city= 'Delhi';**

### ⚡ Task 3

\*\*Question:\*\* Display all students who scored more than 80 in any subject.

**Query : SELECT \* FROM students**

**WHERE student\_id IN (SELECT student\_id FROM marks WHERE marks >80);**

**OR**

**SELECT \* FROM students**

**WHERE student\_id IN (SELECT DISTINCT student\_id FROM marks WHERE marks >80);**

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### ⚡ Task 4

\*\*Question:\*\* List all students from Mumbai who scored more than 70.

**Query :SELECT \* FROM students**

**WHERE city = 'Mumbai' AND student\_id IN (SELECT student\_id FROM marks WHERE marks > 70);**

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### ⚡ Task 5

\*\*Question:\*\* Display students who are from Pune or scored above 85.

**Query : SELECT DISTINCT (s.student\_id) ,name FROM students as s,marks as m**

**WHERE city = 'Pune' OR marks > 85;**

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### ⚡ Task 6

\*\*Question:\*\* List all students sorted by their marks in descending order.

**Query : SELECT \* FROM students,marks**

**ORDER BY marks DESC;**

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### ⚡ Task 7

\*\*Question:\*\* Show the top 3 students based on their highest marks.

**Query : SELECT s.student\_id, name FROM students as s,marks**

**GROUP BY s.student\_id ,name**

**ORDER BY marks DESC**

**LIMIT 3;**

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### ⚡ Task 8

\*\*Question:\*\* Display distinct subjects present in the `marks` table.

**Query : SELECT DISTINCT subject FROM marks;**

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### ⚡ Task 9

\*\*Question:\*\* Show student names with alias as `Student\_Name` and city as `Location`.

**Query : SELECT name as Student\_Name , city as Location FROM students;**

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### ⚡ Task 10

\*\*Question:\*\* Use alias to rename the column `marks` as `Score` in the output.

**Query : SELECT marks Score FROM marks;**

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### ⚡ Task 11

\*\*Question:\*\* Display the average marks scored by each student.

**Query :SELECT name,AVG(marks) FROM marks,students**

**GROUP BY name;**

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### ⚡ Task 12

\*\*Question:\*\* Count the number of subjects each student has appeared in.

**Query : SELECT name,COUNT(subject) FROM students,marks**

**GROUP BY name;**

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### ⚡ Task 13

\*\*Question:\*\* Show the maximum marks scored per subject.

**Query : SELECT subject,MAX(marks) FROM marks**

**GROUP BY subject;**

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### ⚡ Task 14

\*\*Question:\*\* Show the minimum marks scored per subject.

SELECT subject,MIN(marks) FROM marks

GROUP BY subject;

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### ⚡ Task 15

\*\*Question:\*\* Display the number of students from each city.

**Query : SELECT city,COUNT(\*) FROM students**

**GROUP BY city;**

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### ⚡ Task 16

\*\*Question:\*\* Show students who scored between 70 and 90 in any subject.

**Query : SELECT name FROM students**

**WHERE student\_id IN (SELECT student\_id FROM marks WHERE marks BETWEEN 70 AND 90);**

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### ⚡ Task 17

\*\*Question:\*\* List students who scored 85 or are from Chennai.

**Query : SELECT name FROM students**

**WHERE city = 'Chennai' OR student\_id IN (SELECT student\_id FROM marks WHERE marks = 85);**

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### ⚡ Task 18

\*\*Question:\*\* Display all students whose names start with the letter ‘R’.

**Query : SELECT name FROM students**

**WHERE name LIKE 'R%';**

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### ⚡ Task 19

\*\*Question:\*\* Show average marks of students from ‘Delhi’ only.

**Query : SELECT s.city , AVG(m.marks) FROM students as s ,marks as m**

**WHERE s.student\_id = m.student\_id AND s.city = 'Delhi'**

**GROUP BY s.city;**

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### ⚡ Task 20

\*\*Question:\*\* Show each student’s total marks and group the data by student.

**Query : SELECT s.name,SUM(m.marks) FROM students as s ,marks as m**

**WHERE s.student\_id= m.student\_id**

**GROUP BY s.name;**

OR

**SELECT s.name, sum(m.marks) FROM students as s**

**INNER JOIN marks as m**

**ON s.student\_id = m.student\_id**

**GROUP BY s.name;**

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