STUDENT PERFORMANCE ANALYSIS USING SQL

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Import the .csv file into a MySQL table and Add student_id for each student

```sql
ALTER TABLE student_performance
ADD COLUMN student_id INT AUTO_INCREMENT PRIMARY KEY FIRST;
```

student_id
1
2
3
4
5

Table Structure

```
DESCRIBE student_performance;
```

Field	Type	Null	Key	Default	Extra
student_id	int	NO	PRI	NULL	auto_increment
Hours Studied	int	YES		NULL	
Previous Scores	int	YES		NULL	
Extracurricular Activities	text	YES		NULL	
Sleep Hours	int	YES		NULL	
Sample Question Papers Practiced	int	YES		NULL	
Performance Index	double	YES		NULL	

Insights Through Queries

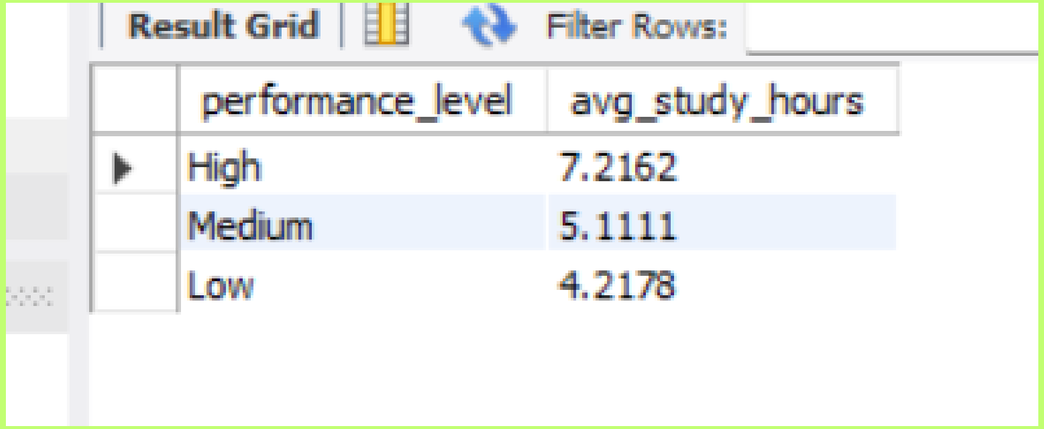
Top 5 students with highest performance

```
SELECT * FROM student_performance
ORDER BY 'Performance Index' DESC
LIMIT 5;
```

student_id	Hours Studied	Previous Scores	Extracurricular Activities	Sleep Hours	Sample Question Papers Practiced	Performance Index
1	7	99	Yes	9	1	91
2	4	82	No	4	2	65
3	8	51	Yes	7	2	45
4	5	52	Yes	5	2	36
5	7	75	No	8	5	66

Group by Performance Level

```sql
SELECT
  CASE
    WHEN `Performance Index` >= 75 THEN 'High'
    WHEN `Performance Index` >= 50 THEN 'Medium'
    ELSE 'Low'
  END AS performance_level,
  AVG(`Hours Studied`) AS avg_study_hours
FROM student_performance
GROUP BY performance_level;
```



performance_level	avg_study_hours
High	7.2162
Medium	5.1111
Low	4.2178

High Performers have an average study time of 7 hours.

Correlation idea: Do more question papers lead to higher performance?

```sql
SELECT `Sample Question Papers Practiced`, ROUND(AVG(`Performance Index`), 2) AS avg_perf
FROM student_performance
GROUP BY `Sample Question Papers Practiced`
ORDER BY `Sample Question Papers Practiced`;
```

Sample Question Papers Practiced	avg_perf
0	53.58
1	61.83
2	53.17
3	54.16
4	47.38
5	48.65
6	59.43
7	57.5

61.83

It clearly shows no.

How does sleep affect performance? (grouped)

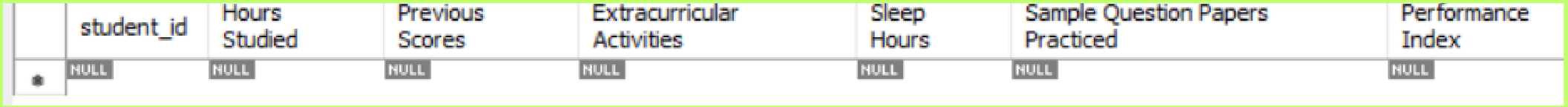
```sql
SELECT `Sleep Hours`, ROUND(AVG(`Performance Index`), 2) AS avg_perf
FROM student_performance
GROUP BY `Sleep Hours`
ORDER BY `Sleep Hours`;
```

Sleep Hours	avg_perf
4	54.62
5	53.32
6	55.94
7	51.36
8	60.41
9	53.62

It can be seen that 8 hour sleep is giving highest performance

Find students with low previous scores but high current performance

```sql
SELECT * FROM student_performance
WHERE `Previous Scores` < 60 AND `Performance Index` > 80;
```

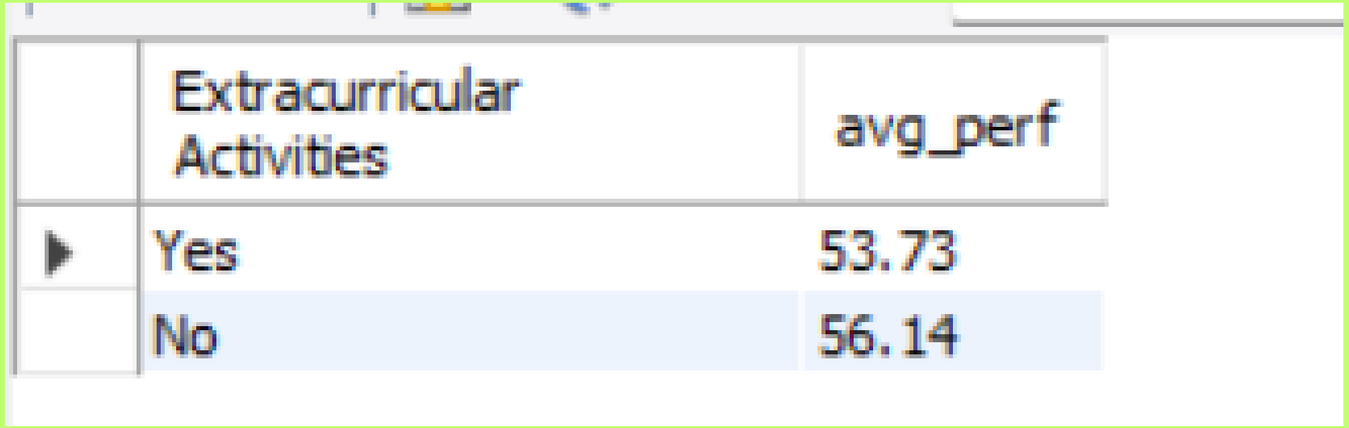


	student_id	Hours Studied	Previous Scores	Extracurricular Activities	Sleep Hours	Sample Question Papers Practiced	Performance Index
*	NULL	NULL	NULL	NULL	NULL	NULL	NULL

This shows patterns repeat.Students who did not score good early are also less likely to score later

Extracurricular Activities Effect

```sql
SELECT `Extracurricular Activities`, COUNT(*) AS total_students
FROM student_performance
GROUP BY `Extracurricular Activities`;
```



Extracurricular Activities	avg_perf
Yes	53.73
No	56.14

We see that students invilved in extracurricular activities have slightly less performance index.

Combine Sleep + Study

```
SELECT `Sleep Hours`, `Hours Studied`, ROUND(AVG(`Performance Index`), 2) AS avg_perf
FROM student_performance
GROUP BY `Sleep Hours`, `Hours Studied`
```

Sleep Hours	Hours Studied	avg_perf
7	9	86.5
6	6	81
8	8	80.5
9	9	72
5	6	70
5	9	69.75
8	7	69.6
4	9	68

We see that the best combination is 7 hours sleep and 9 hours study.

THANKS