SLEEP PATTERN ANALYTICS FOR WORKING PROFESSIONALS

MYSQL MINI PROJECT BY
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BATCH: 9:30-11:30

AGENDA

- INTRODUCTION
- PROJECTIVE OBJECTIVES
- TABLES USED
- JOINS USED
- EXAMPLE JOINS TABLE
- FINAL ANALYSIS QUERY
- INSIGHTS
- CONCLUSION

INTRODUCTION

Sleep is a key factor in maintaining productivity, mental focus, and overall wellness among working professionals. With increasing work pressure, irregular schedules, and digital distractions, many individuals experience noticeable variations in their daily sleep cycle. This project analyzes sleep patterns by comparing weekday and weekend sleep duration to understand how work routines impact rest. Using a structured MySQL database that includes worker details, departments, sleep logs, week type classification, and sleep quality ratings, the system captures both quantitative and qualitative aspects of sleep. The analysis reveals trends such as reduced sleep during weekdays and longer recovery sleep on weekends, along with corresponding changes in mood and quality. Overall, this project demonstrates how database analytics can support better health awareness, stress management, and improved work-life balance.

PROJECT OBJECTIVES

- To analyze the difference in sleep duration between weekdays and weekends.
- To study how work routine impacts the sleep cycle of professionals.
- To store and manage sleep-related data using normalized MySQL tables.
- To integrate sleep quality and mood scores for deeper insight.
- To implement multiple SQL joins for relational data analysis.
- To generate a final analysis query showing average sleep hours and mood.

TABLES USED

1. department – Stores department details.
2. worker – Stores worker ID, name, and department mapping.
3. sleep_log – Stores daily sleep duration and timings.
4. week_type – Classifies days into weekday or weekend.
5. sleep_quality – Stores mood score and sleep quality for each log.

JOINS USED

INNER JOIN – Used to connect worker with sleep logs, departments, and week type.

LEFT JOIN – Used to show workers even if they have no sleep records.

RIGHT JOIN – Used to show sleep logs even if worker details are missing.

FULL OUTER JOIN (Union method) – Combines both left and right join results.

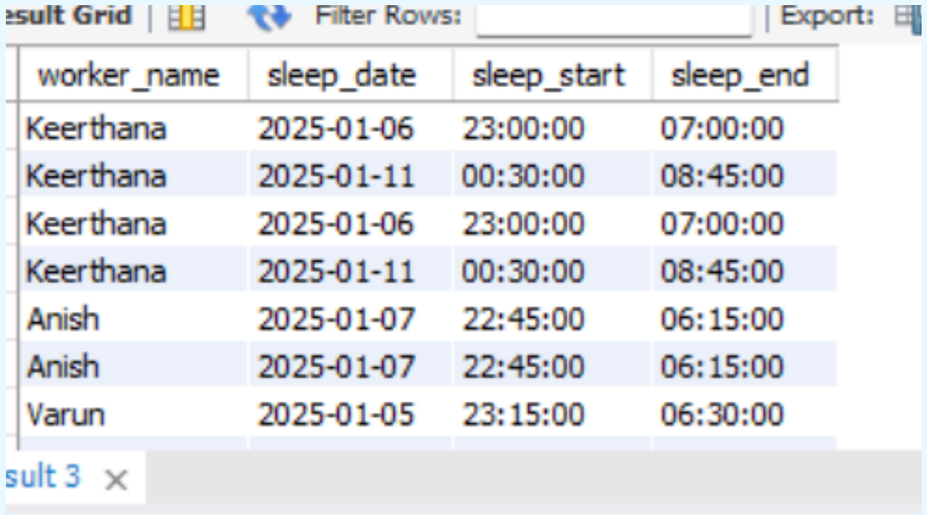
SELF JOIN – Used to compare two consecutive sleep log days for a worker.

CROSS JOIN – Generates all combinations of workers and week types.

MULTI-JOIN - Used in the final analysis query combining all required tables

EXAMPLE JOINS TABLE

INNER JOIN

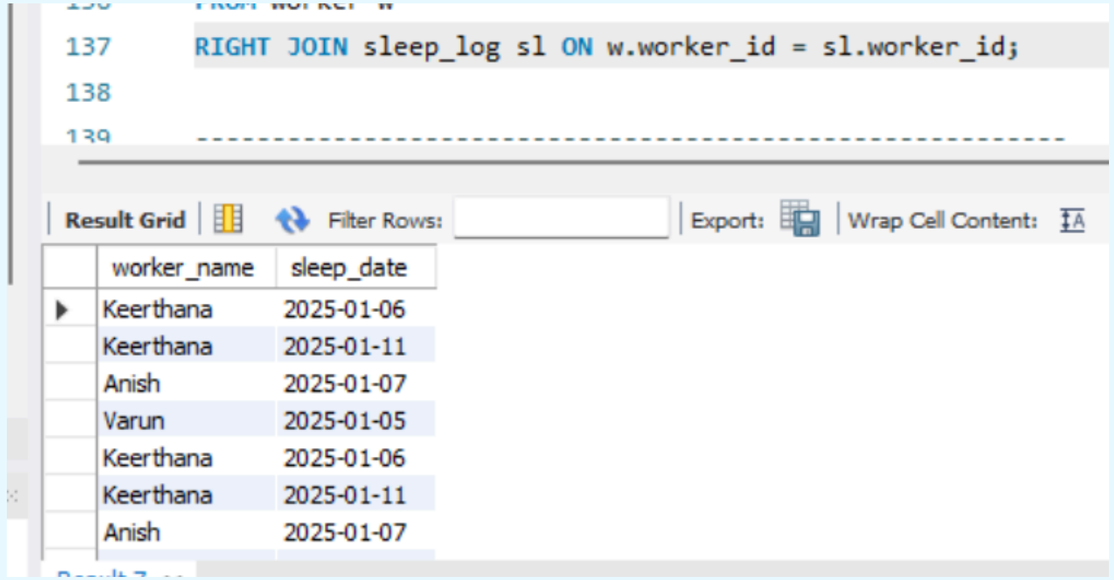


esult Grid | Filter Rows: | Export:

worker_name	sleep_date	sleep_start	sleep_end
Keerthana	2025-01-06	23:00:00	07:00:00
Keerthana	2025-01-11	00:30:00	08:45:00
Keerthana	2025-01-06	23:00:00	07:00:00
Keerthana	2025-01-11	00:30:00	08:45:00
Anish	2025-01-07	22:45:00	06:15:00
Anish	2025-01-07	22:45:00	06:15:00
Varun	2025-01-05	23:15:00	06:30:00

sult 3 ×

RIGHT JOIN



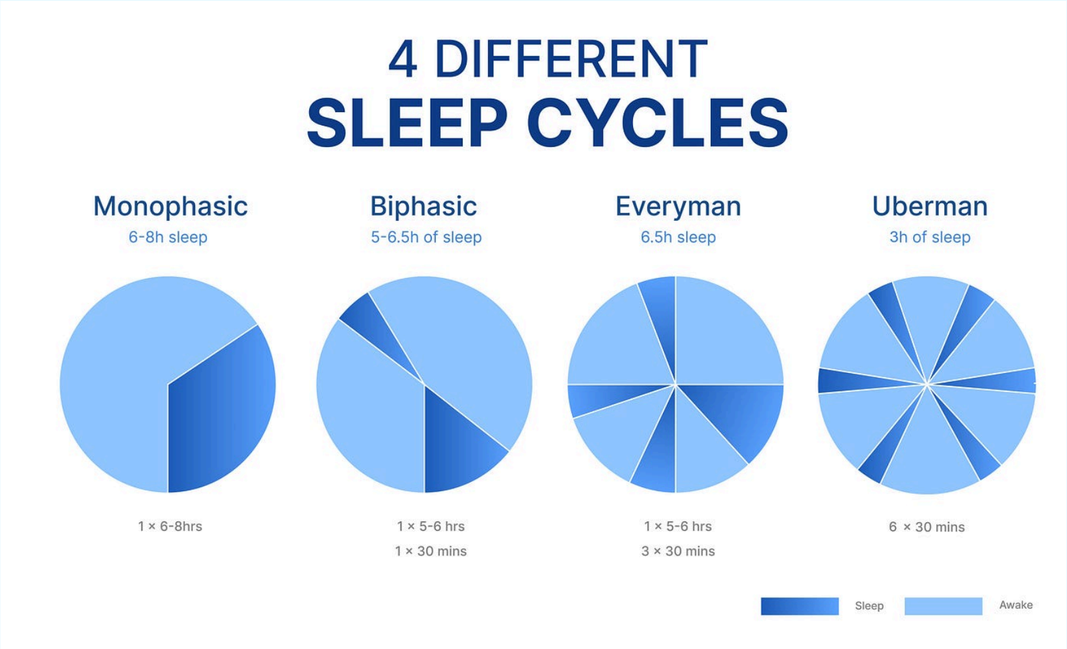
```
137    RIGHT JOIN sleep_log sl ON w.worker_id = sl.worker_id;
138
139    ------------------------------------------------------------
```

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

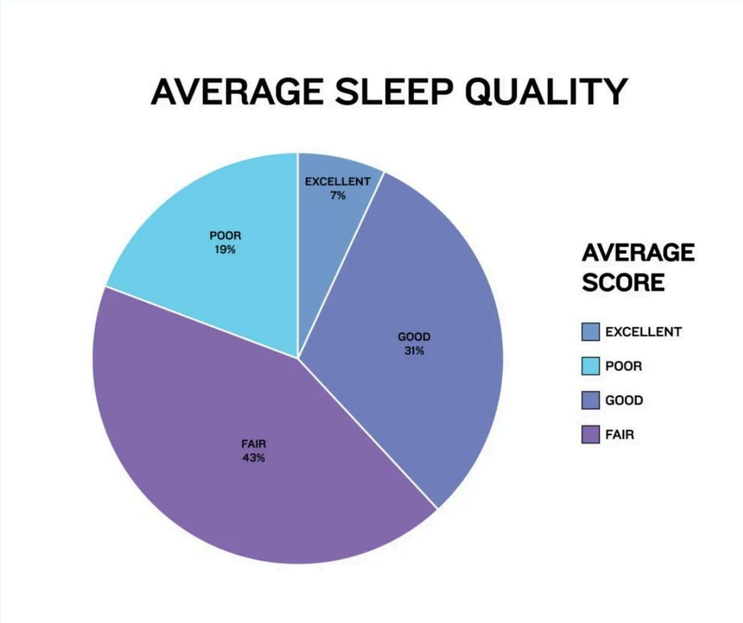
worker_name	sleep_date
Keerthana	2025-01-06
Keerthana	2025-01-11
Anish	2025-01-07
Varun	2025-01-05
Keerthana	2025-01-06
Keerthana	2025-01-11
Anish	2025-01-07

FINAL ANALYSIS QUERY

- This query joins all major tables together to calculate:
- Average weekday sleep duration.
- Average weekend sleep duration.
- Mood score comparison.
- Department-wise variation.
- It uses worker, department, sleep_log, week_type, and sleep_quality tables to generate complete insights.



INSIGHTS



1. Workers tend to sleep more during weekends compared to weekdays.
2. Mood scores improve when sleep duration increases.
3. Weekdays show more irregular sleep patterns due to work pressure.
4. Weekend sleep acts as recovery sleep for most professionals.
5. Workers from high-stress departments tend to have lower sleep quality.
6. Sleep quality rating helps understand emotional and mental well-being.
7. Joins helped connect multiple data points to form a clear analysis.
8. The system can be expanded for long-term sleep behavior studies.

CONCLUSION

The project successfully demonstrates how SQL joins and relational databases can be used to analyze sleep patterns among working professionals. The comparison between weekday and weekend sleep highlights the impact of work routines on rest. Mood and quality scores provide additional behavioural insights. This analytical model can support studies related to wellness, productivity, stress management, and work-life balance, making it valuable for both personal and organizational use.

THANK YOU