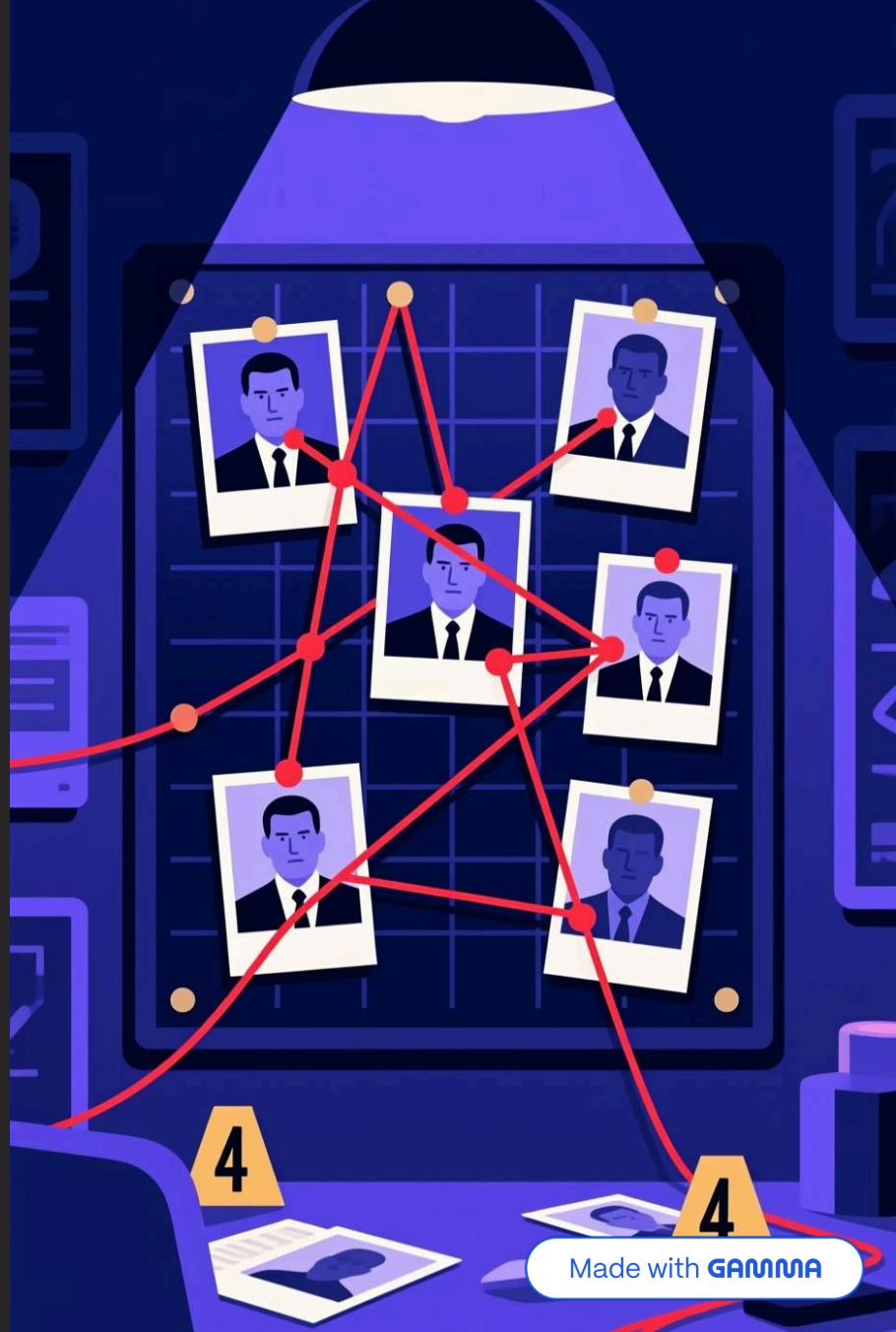
SQL Murder Mystery: Who Killed the CEO?

21-Day SQL Challenge – Capstone Project

By Chinmaya Kumar Khora



The Crime Scene

The Incident

The CEO of TechNova Inc. was discovered dead on **October 15, 2025 at 9:00 PM**. The high-profile nature of this case demanded a thorough investigation using every data point available.

Our Challenge

Using only SQL queries, we must analyze five interconnected data sources to uncover the truth: who committed this crime, where it happened, when, and most importantly—how can we prove it?

Data Sources

- Employee records
- Keycard access logs
- Call metadata
- Alibi statements
- Physical evidence

Database Architecture

employees

Employee records including ID, name, department, and role assignments within TechNova Inc.

keycard_logs

Time-stamped records of employee movements tracking room access throughout the building.

calls

Complete call metadata showing caller, recipient, timestamp, and duration of communications.

alibis

Self-reported location claims from employees during the critical time window.

evidence

Physical clues collected from crime scene including fingerprints and digital traces.

Investigation Framework

01

Establish crime scene details

Where and when did the murder take place?

02

Identify access patterns

Who accessed the CEO Office around 9:00 PM?

03

Verify alibi statements

Which employees provided false location claims?

04

Analyze communications

Who made suspicious calls between 20:50–21:00?

05

Review physical evidence

What clues were discovered at the scene?

06

Connect the dots

Who is the killer based on combined data?

Key SQL Investigative Queries

Crime Scene Evidence

```
SELECT * FROM evidence
WHERE location = 'CEO Office'
AND timestamp BETWEEN
  '2025-10-15 20:30:00'
  AND '2025-10-15 21:30:00';
```

Keycard Access Logs

```
SELECT employee_id, name,
       access_time, room
FROM keycard_logs
JOIN employees USING(employee_id)
WHERE room = 'CEO Office'
AND access_time BETWEEN
  '2025-10-15 20:45:00'
  AND '2025-10-15 21:15:00';
```

Alibi Verification

```
SELECT e.name,
       a.claimed_location,
       k.room AS actual_location
FROM employees e
JOIN alibis a
  ON e.employee_id = a.employee_id
LEFT JOIN keycard_logs k
  ON e.employee_id = k.employee_id
WHERE a.claimed_location != k.room;
```

Suspicious Call Activity

```
SELECT caller_id, recipient_id,
 call_time, duration
FROM calls
WHERE call_time BETWEEN
 '2025-10-15 20:50:00'
 AND '2025-10-15 21:00:00';
```

Connecting the Evidence

Access Pattern Discovery

David Kumar was the only employee to enter the CEO Office at 9:00 PM according to keycard logs.

Alibi Contradiction

David claimed to be in the **Server Room**, but keycard data proves he was actually in the **CEO Office**.

Suspicious Communications

Call records show David made multiple calls during the critical 20:50–21:00 time window.

Physical Evidence Match

Fingerprints and keycard data found at the crime scene directly link to David Kumar's credentials.

Case Closed

Killer Identified

David Kumar

Crime Location

CEO Office

7th Floor, TechNova HQ

Time of Crime

October 15, 2025

Approximately 9:00 PM

The Evidence Trail

The convergence of three critical data points sealed the verdict: **keycard access logs** placed David at the scene, his **false alibi statement** demonstrated consciousness of guilt, and **suspicious call activity** during the murder timeframe established a pattern of coordinated behavior. Physical evidence recovered from the CEO Office provided the final confirmation.

Technical Skills Demonstrated

1

Complex Joins

Multi-table relationships across five interconnected datasets

2

Time-Based Filtering

Precise timestamp queries and temporal pattern analysis

3

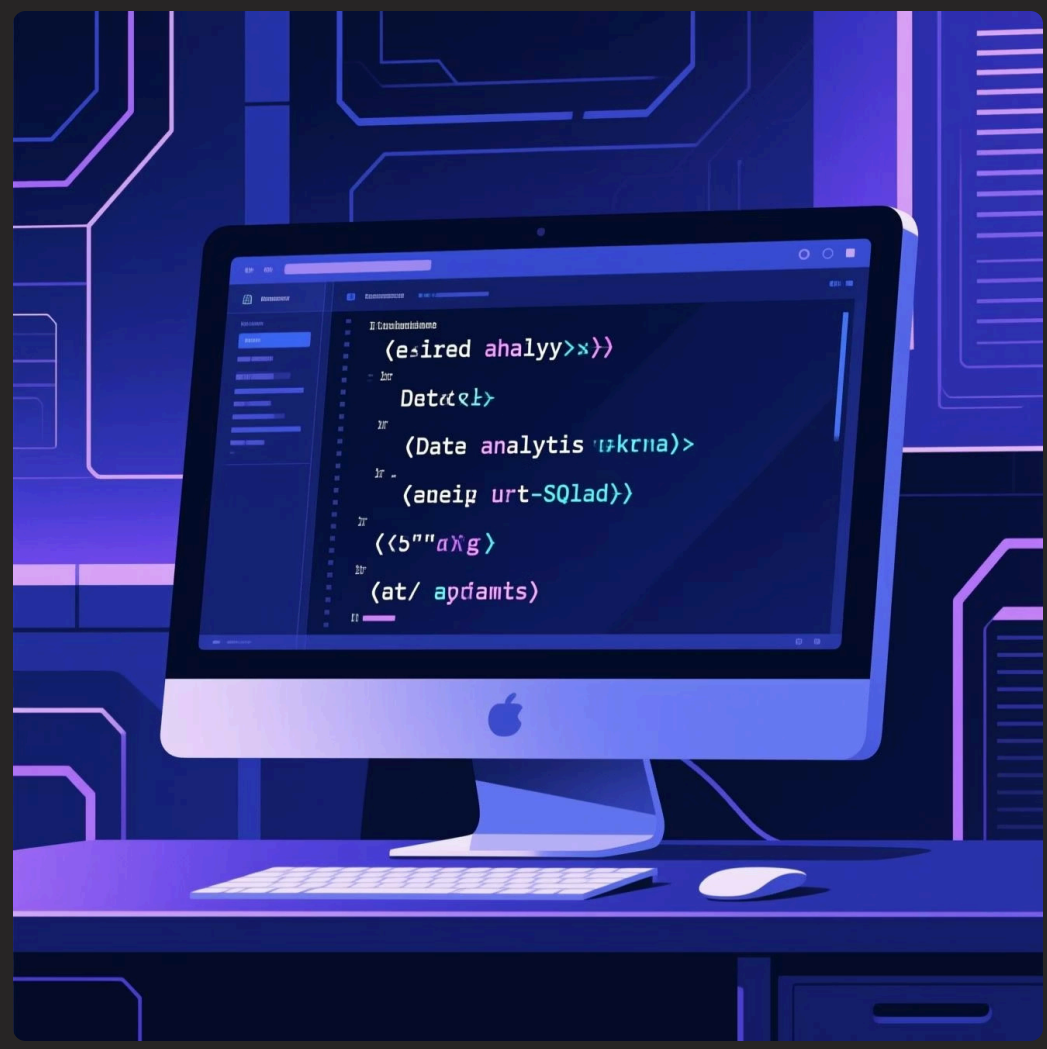
Data Validation

Cross-referencing claimed vs. actual data to detect inconsistencies

4

Aggregation Logic

Combining evidence from multiple sources into coherent conclusions



Portfolio Value

This capstone project showcases real-world SQL problem-solving abilities that directly translate to business intelligence, fraud detection, and investigative analytics roles.

Key Learnings & Takeaways

Mastery of SQL Joins

Successfully navigated complex relationships between five tables, demonstrating proficiency with INNER, LEFT, and multi-table JOIN operations.

Investigative Methodology

Applied structured, hypothesis-driven querying to solve an open-ended problem—a crucial skill for any data analyst.

Data Validation Techniques

Learned the importance of cross-checking information across multiple data sources to identify inconsistencies and verify claims.

Portfolio Readiness

Created a compelling, story-driven project that demonstrates both technical SQL skills and analytical thinking to potential employers.

Thank You

> "The best way to learn SQL is to solve real problems. This murder mystery challenged me to think like both a detective and a data analyst—connecting dots across tables just like connecting evidence at a crime scene."

Chinmaya Kumar Khora
21-Day SQL Challenge Graduate

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