The TechNova Murder Mystery

On the evening of 15 October 2025, a shocking discovery was made at TechNova Inc. The CEO was found deceased in their office. Our mission: to leverage forensic data analysis and SQL to unravel the truth behind this tragic event.

Our Investigative Mandate

Identify the Perpetrator

Determine who committed the crime through meticulous data correlation.

Pinpoint the Timeline

Establish the exact time and location of the incident.

Uncover the Modus Operandi
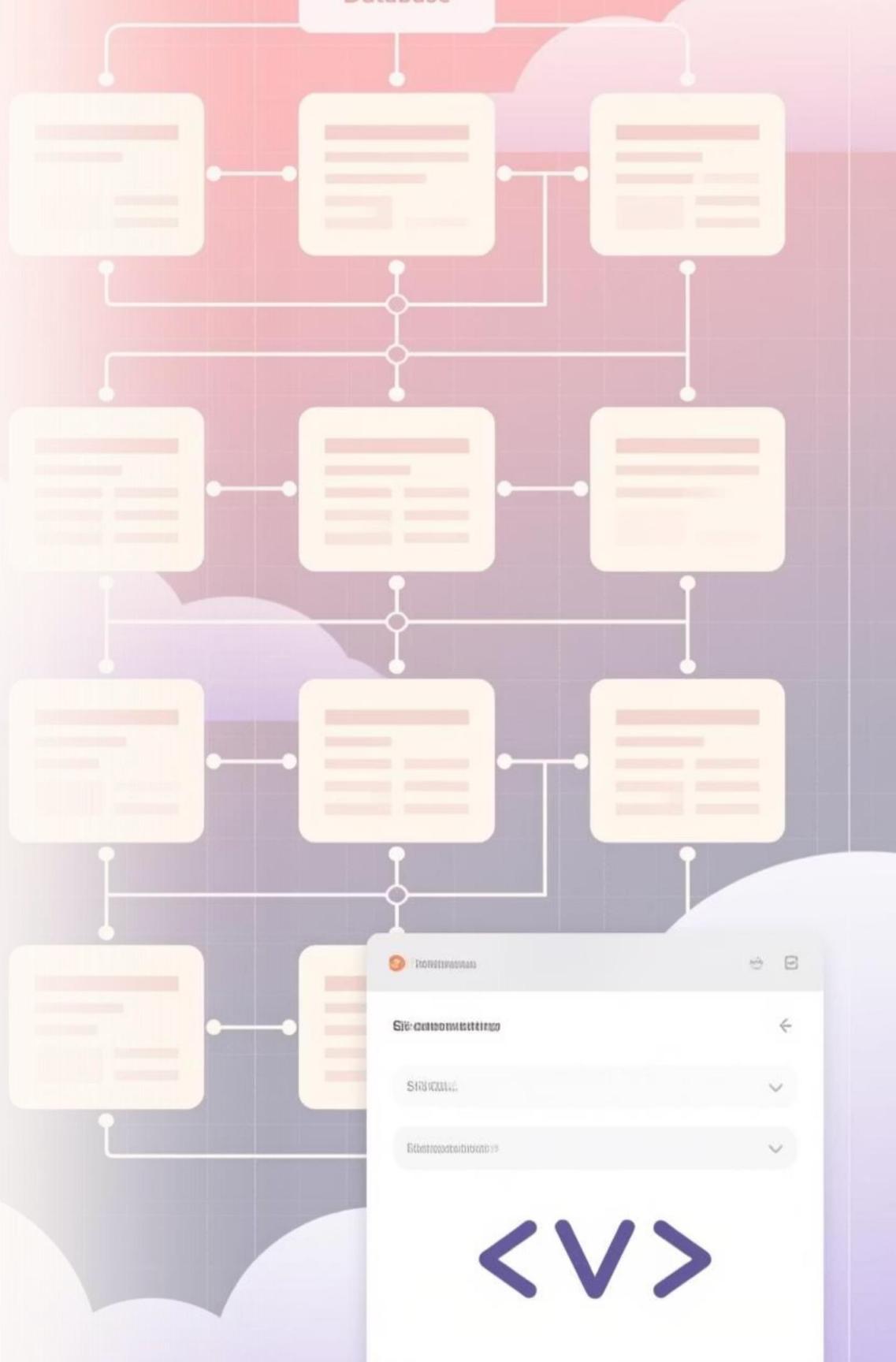
Understand the sequence of events leading to the CEO's death.

Every log, every call, every alibi holds a piece of the puzzle. Our SQL queries will bring these hidden truths to light.

The Digital Footprint: Database Schema

All crucial evidence resides within TechNova's comprehensive databases. We have five key tables at our disposal, each containing vital clues:

- **employees:** Details of all staff members.

- **keycard_logs:** Records of physical access to various rooms.

- **calls:** Logs of all internal and external phone communications.

- **alibis:** Employee statements regarding their whereabouts.

- **evidence:** Physical evidence collected from the crime scene.

Initial Interrogation: Keycard Activity

Who entered the CEO's Office around the time of the murder?

```
SELECT e.name, kl.room, kl.entry_time, kl.exit_time
FROM employees e
JOIN keycard_logs kl ON e.employee_id = kl.employee_id
WHERE kl.room = 'CEO Office' AND kl.entry_time BETWEEN '2025-10-15 20:45' AND '2025-10-15 21:05';
```

The CEO was found deceased at 21:00. This query helps us identify individuals with access to the crime scene during the critical window.

Name	Room	Entry Time	Exit Time
David Kumar	CEO Office	2025-10-15 20:50	2025-10-15 21:00

David Kumar's keycard log places him in the CEO's office precisely during the time of death. This is our first significant lead.

The Alibi Audit: Unravelling Deception

Who claimed to be elsewhere but was actually at the CEO's Office?

```
SELECT e.employee_id, e.name, kl.room AS actual_room, kl.entry_time, kl.exit_time, al.claimed_location, al.claim_time
FROM employees e
JOIN keycard_logs kl ON kl.employee_id = e.employee_id
JOIN alibis al ON al.employee_id = e.employee_id
WHERE kl.room = 'CEO Office'
  AND kl.entry_time BETWEEN '2025-10-15 20:50' AND '2025-10-15 21:00'
  AND al.claimed_location != 'CEO Office';
```

We cross-referenced alibis with keycard logs to expose discrepancies. A false alibi is a strong indicator of guilt.

Employee ID	Name	Actual Room	Entry Time	Exit Time	Claimed Location	Claim Time
4	David Kumar	CEO Office	2025-10-15 20:50	2025-10-15 21:00	Server Room	2025-10-15 20:50

David Kumar claimed to be in the Server Room at 20:50, but keycard data clearly shows him in the CEO's Office. This is highly suspicious.

The Communication Blackout: Call Records

Who made or received calls around 20:50–21:00?

```
SELECT c.call_id, caller.name AS caller_name, receiver.name AS receiver_name, c.call_time, c.duration_sec
FROM calls c
JOIN employees caller ON c.caller_id = caller.employee_id
JOIN employees receiver ON c.receiver_id = receiver.employee_id
WHERE c.call_time BETWEEN '2025-10-15 20:50' AND '2025-10-15 21:00';
```

Communications around the time of the murder could reveal last-minute interactions or attempts to establish an alibi.

Call ID	Caller Name	Receiver Name	Call Time	Duration (sec)
1	David Kumar	Alice Johnson	2025-10-15 20:55	45

David Kumar placed a call to Alice Johnson at 20:55, right in the middle of his recorded presence in the CEO's office. This call demands further investigation.

Crime Scene Forensics: Physical Evidence

What evidence was found at the "CEO Office" crime scene?

```
SELECT evidence_id, room, description, found_time
FROM evidence
WHERE room = 'CEO Office'
ORDER BY found_time;
```

Physical evidence from the scene provides tangible links to the events that transpired.

Evidence ID	Room	Description	Found Time
1	CEO Office	Fingerprint on desk	2025-10-15 21:05
2	CEO Office	Keycard swipe logs mismatch	2025-10-15 21:10

The fingerprint and keycard log mismatch strongly suggest foul play and an attempt to conceal the perpetrator's presence.
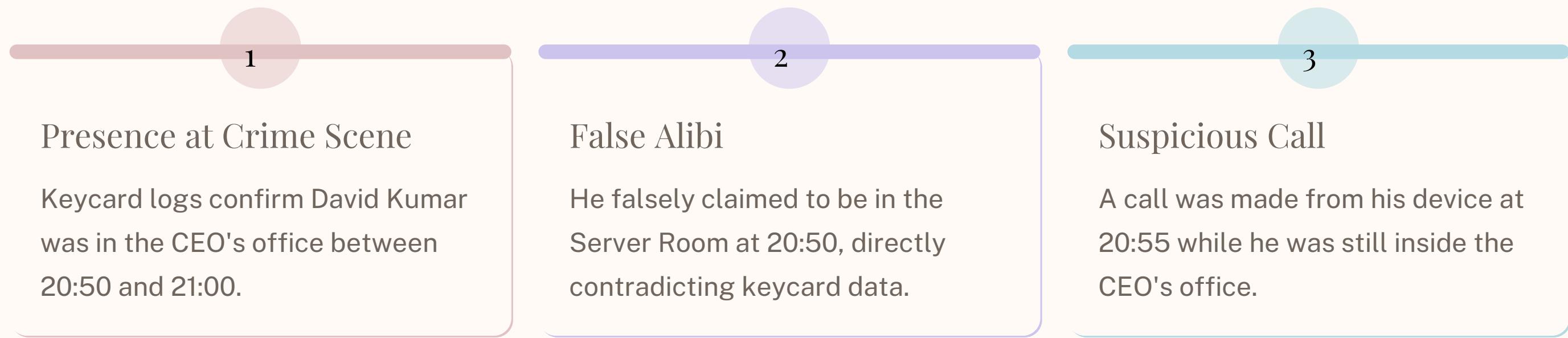
The Unfolding Narrative: Comprehensive Analysis

Which suspect's movements, alibi, and call activity don't add up?

```
WITH crime_location AS (
  SELECT kl.employee_id, e.name, kl.room, kl.entry_time, kl.exit_time
  FROM keycard_logs kl
  JOIN employees e ON kl.employee_id = e.employee_id
  WHERE kl.room = 'CEO Office' AND kl.entry_time BETWEEN '2025-10-15 20:50' AND '2025-10-15 21:00'
), false_alibis AS (
  SELECT a.employee_id, a.claimed_location, a.claim_time, kl.room AS actual_room
  FROM employees e
  JOIN alibis a ON a.employee_id = e.employee_id
  JOIN keycard_logs kl ON kl.employee_id = a.employee_id AND a.claim_time BETWEEN kl.entry_time AND kl.exit_time
  WHERE a.claimed_location != kl.room
), call_activity AS (
  SELECT c.caller_id, e.name AS callerName, c.call_time, c.duration_sec
  FROM calls c
  JOIN employees e ON e.employee_id = c.caller_id
  WHERE c.call_time BETWEEN '2025-10-15 20:45' AND '2025-10-15 21:05'
)
SELECT cl.employee_id, cl.name AS killer, cl.room AS murder_location, fa.claimed_location AS false_claim_room, fa.claim_time AS false_claim_time,
ca.call_time AS suspicious_call_time, ca.duration_sec AS call_duration_sec
FROM crime_location cl
LEFT JOIN false_alibis fa ON cl.employee_id = fa.employee_id
LEFT JOIN call_activity ca ON cl.employee_id = ca.caller_id;
```

This complex query integrates all our findings to build a conclusive picture of the suspect's actions.

The Verdict: David Kumar

1

Presence at Crime Scene

Keycard logs confirm David Kumar was in the CEO's office between 20:50 and 21:00.

2

False Alibi

He falsely claimed to be in the Server Room at 20:50, directly contradicting keycard data.

3

Suspicious Call

A call was made from his device at 20:55 while he was still inside the CEO's office.

All data points converge: **David Kumar** is identified as the prime suspect. His movements, alibi, and call activity are irreconcilable with the facts.

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Case Closed: The Truth Revealed

The Killer: David Kumar

The Location: CEO's Office

The Time: Approximately 20:50 - 21:00, 15 October 2025

The Method: Unknown, but an attempt was made to obscure presence via a false alibi and a keycard log mismatch.

Through rigorous SQL querying and forensic data analysis, we have successfully pieced together the events of that fateful evening. Justice for TechNova's CEO is now within reach.