Slide Deck: Solving the Fiftyville Mystery

Slide 1: Welcome!

Title: Cracking the Case of the Stolen CS50 Duck

Subtitle: Step-by-Step SQL Detective Work

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Slide 2: What's the Goal?

We need to find:

1. **The Thief** – who stole the duck.

2. **Escape City** – where the thief flew.

3. **Accomplice** – who helped the thief leave town.

We only know:

- Date: **July 28, 2024**

- Place: **Humphrey Street**

Slide 3: Tools & Tables

We have fiftyville.db, a SQLite database with multiple tables:

- crime_scene_reports → crime details

- interviews → witness statements

- people → personal details

- bank_accounts → people & accounts

- atm_transactions → ATM logs

- phone_calls → call records

- flights, airports, passengers → flight details

- courthouse_security_logs → courthouse visitors

We'll query step-by-step until we have our suspects.

Slide 4: Step 1 – Find the Crime Report

```sql
SELECT *
FROM crime_scene_reports
WHERE date = '2024-07-28'
  AND street = 'Humphrey Street';
```

Goal: Identify the **exact time** and **description** of the crime.
This gives us a time window for the investigation.

Slide 5: Step 2 – Check Witness Statements
Witnesses are in the interviews table.

```sql
SELECT name, transcript
FROM interviews
WHERE date = '2024-07-28';
```

Goal: Look for hints like:

- Places the thief visited (ATM, store, courthouse)

- Flight or travel mentions

- Accomplice info

Slide 6: Step 3 – Filter Activities Around the Time

If a witness mentions **ATM withdrawal**, check:

```sql
SELECT *
FROM atm_transactions
WHERE atm_location = '<location from transcript>'
  AND date = '2024-07-28'
  AND transaction_type = 'withdraw';
```

Then join to find the **people** who own those accounts.

Slide 7: Step 4 – Match Courthouse Sightings

If the transcript mentions **courthouse security**, run:

```sql
SELECT *
FROM courthouse_security_logs
WHERE date = '2024-07-28'
  AND time BETWEEN '<crime time>' AND '<time window>';
```

Match license_plate with the people table.

Slide 8: Step 5 – Track Flight Out of Town

If the witness says "left next morning," check:

```sql
SELECT flights.id, origin_airport_id, destination_airport_id, hour, minute
FROM flights
JOIN airports ON flights.origin_airport_id = airports.id
WHERE airports.city = 'Fiftyville'
```

```
   AND date = '2024-07-29'
ORDER BY hour, minute
LIMIT 1;
```

This finds the earliest flight — likely the escape route.

Slide 9: Step 6 – Find Who Was on That Flight

```
SELECT people.name
FROM passengers
JOIN people ON passengers.passport_number = people.passport_number
WHERE passengers.flight_id = <earliest_flight_id>;
```

Cross-match with suspects from previous steps to narrow down the thief.

Slide 10: Step 7 – Identify the Accomplice

Check **phone calls** around the escape:

```
SELECT caller, receiver
FROM phone_calls
WHERE date = '2024-07-28'
   AND duration < 60;
```

Find the thief's phone number and match to the receiver's identity.

Slide 11: Step 8 – Record Your Findings

Once confirmed:

- **Thief:** Name

- **Escape City:** From flights destination airport

- **Accomplice:** From phone_calls match
```

Fill in answers.txt exactly as:

```
Thief: <Name>
City: <City>
Accomplice: <Name>
```

Slide 12: Good Detective Habits

- Keep **log.sql** with every query + a comment explaining it.

- Always **cross-reference** between multiple tables before concluding.

- Be mindful of **time windows** — they're key to eliminating innocent matches.

Slide 15: The End!

Thanks for learning with us! Keep exploring CS50x with Us!