SQL Murder Mystery Workshop Script (90 Mins)

1. Welcome & Introduction (5 min)

Welcome everyone! Today, we are gonna be learning about SQL but instead of doing some boring coding exercise we'll solve a murder mystery. We'll use **SQL queries** instead of fingerprints and DNA data to gather clues to solve this murder.

- "Who here has written SQL before?" (show of hands)
- "Even if you're new, I'll guide you step by step."

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2. Setting the Scene (5 min)

Here's the backstory: A murder has been committed in SQL City. We're investigators with access to the city's database. Our job is to use SQL to find out **who committed the crime**.

Link: **https://mystery.knightlab.com/**

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3. Structure Guide (5 min)

Before diving into queries, let's quickly review the key tables you'll use and their purpose:

- **crime_scene_report** → Records of crimes that happened in SQL City, including date, type, city, and description.
- **person** → Contains details about each person in SQL City, such as ID, name, address, and phone number.
- **interview** → Transcripts of witness and suspect interviews, linked to the `person` table by `person_id`.
- **get_fit_now_member** → Membership information for the Get Fit Now Gym, including membership ID, status (gold/silver), and link to `person`.
- **get_fit_now_check_in** → Records of gym check-ins by members, with timestamps to see when they were at the gym.
- **drivers_license** → Contains driver's license details such as ID, name, height, hair color, gender, and plate number.
- **facebook_event_checkin** → Logs of people checking into events via Facebook, including event name, date, and location.

These tables are your "evidence files." We'll query them step by step to uncover the culprit.

4. Explaning the tools (10 min)

SQL Tools You'll Use

`SELECT`

```sql
-- Used to choose which columns of data you want to see
SELECT name, age
FROM person;
```

`FROM`

```sql
-- Specifies the table you're getting data from
SELECT *
FROM crime_scene_report;
```

`WHERE`

```sql
-- Filters rows based on conditions
SELECT *
FROM person
WHERE city = 'SQL City';
```

`ORDER BY`

```sql
-- Sorts the results
SELECT *
FROM person
ORDER BY age DESC;
```

`JOIN`

```sql
-- Combines rows from two tables when they have related columns
SELECT p.name, g.membership_status
FROM person p
JOIN get_fit_now_member g
  ON p.id = g.person_id;
```

`IN` / Subqueries

```sql
-- Checks if a value matches any result from another query
SELECT *
FROM person
WHERE id IN (
    SELECT person_id
    FROM interview
);
```

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5. Starting the Investigation (10 min)

Guide them to the **crime_scene_report** table.

Prompt:

- “Every investigation begins at the crime scene. Let’s look up what happened in SQL City on Jan 15, 2018.”

```sql
SELECT *
FROM crime_scene_report
WHERE date = 20180115
  AND city = 'SQL City';
```

Discuss:

What details do we learn?

- 3 Crimes took place
- 2 Assults
- 1 Murder

Who should we talk to first?

- A witness named Annabel that lives somewhere on Franklin Ave
- A witness that lives at the last house on Northwestern Dr

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6. Interviewing Witnesses (10–15 min)

Point them to the **person** and **interview** tables.

Prompt:

- “The report mentioned witnesses. Let’s look them up in the person table and then check their interview transcripts.”

```sql
SELECT *
FROM person
WHERE address_street_name = 'Northwestern Dr'
ORDER BY address_number DESC;
```

```sql
SELECT *
FROM interview
WHERE person_id = 14887
```

Ask:

What clues do these witnesses give us?

id	name	license_id	address_number	address_street_name	ssn
14887	Morty Schapiro	118009	4919	Northwestern Dr	111564949

person_id	transcript
14887	I heard a gunshot and then saw a man run out. He had a "Get Fit Now Gym" bag. The membership number on the bag started with "48Z". Only gold members have those bags. The man got into a car with a plate that included "H42W".

Who should we investigate next?

- Lets see what Annabel has to say about this

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7. Following Leads (15 min)

Prompt:

- “One witness mentioned a gym membership, let’s first find the person’s ID, then use it to query the membership table.”

Find the person’s ID in the `person` table:

```
SELECT id, name
FROM person
WHERE name LIKE '%Annabel%';
```

There are 4 individuals with the first name Annabel

id	name
16371	Annabel Miller
78354	Annabell Siona
78799	Annabell Droneburg
86541	Annabell Zwilling

Lets see which of these Annabels go to get fit now

Give students time to figure out which one does

```
SELECT *
FROM get_fit_now_member
WHERE person_id = 16371;
```

Only Annabell Miller goes to get fit now

Encourage participants to share queries, explain results, and build on each other’s discoveries.

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8. Narrowing Down Suspects (10 min)

Prompt:

- “Now let’s narrow down suspects using what we know, still one table at a time.”
- We’ll first **find Annabell Miller’s person ID**, then pull her interview.

```
SELECT *
FROM interview
WHERE person_id = 16371;
```

- Annabell Miller saw the killer from the gym on January 9th

```
SELECT *
FROM get_fit_now_check_in
WHERE check_in_date = 20180109;
```

- Remember the witness mentoined the man had a Get Fit Now Gym bag that had a membership number of 48Z
- 48Z7A or 48Z55

```
SELECT *
FROM get_fit_now_member
WHERE id LIKE '%48Z%'
  AND membership_status = 'gold';
```

- Two key suspects Joe Germuska ID 28819 or Jermy Bowers ID 67318

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9. Final Interview (10 min)

Prompt:

- “Now let’s check for each of our suspects statements

```sql
SELECT *
FROM interview
WHERE person_id = 28819;  -- Joe Germuska's person_id
```

- Returns nothing meaning they are not a suspect

```sql
SELECT *
FROM interview
WHERE person_id = 67318;  -- Jeremy Bowers' person_id
```

person_id	transcript
67318	I was hired by a woman with a lot of money. I don't know her name but I know she's around 5'5" (65") or 5'7" (67"). She has red hair and she drives a Tesla Model S. I know that she attended the SQL Symphony Concert 3 times in December 2017.

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10. The Big Reveal (10 min)

Prompt:

- “Now let’s use all our clues to piece this case together

```sql
SELECT *
FROM drivers_license
WHERE car_make = 'Tesla'
  AND car_model = 'Model S'
  AND hair_color = 'red'
  AND gender = 'female';
```

id	age	height	eye_color	hair_color	gender	plate_number	car_make	car_model
202298	68	66	green	red	female	500123	Tesla	Model S
291182	65	66	blue	red	female	08CM64	Tesla	Model S
918773	48	65	black	red	female	917UU3	Tesla	Model S

- 3 remaining suspects with license plates 500123 08CM64 917UU3

```
SELECT id, name, license_id
FROM person
WHERE license_id IN ('202298', '291182', '918773');
```

- Their names and info

id	name	license_id
78881	Red Korb	918773
90700	Regina George	291182
99716	Miranda Priestly	202298

Lets see who went to the SQL Symphony Concert

```
-- Replace PERSON_ID with the result from Step 1
SELECT *
FROM facebook_event_checkin
WHERE person_id = PERSON_ID
  AND event_name = 'SQL Symphony Concert'
  AND date LIKE '201712%';
```

person_id	event_id	event_name	date
99716	1143	SQL Symphony Concert	20171206
99716	1143	SQL Symphony Concert	20171212
99716	1143	SQL Symphony Concert	20171229

- Only Miranda Priestly ID 99716 did

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10. Wrap Up (5 min)

Check your solution

Did you find the killer?

```
1 INSERT INTO solution VALUES (1, 'Miranda Priestly');
2
3         SELECT value FROM solution;
```

RUN ⇩ RESET

value
Congrats, you found the brains behind the murder! Everyone in SQL City hails you as the greatest SQL detective of all time. Time to break out the champagne!

- Real world analytics is often like detective work
- SQL is about asking questions of your data
- What was something you liked or disliked about this?

Clues

2. Setting the Scene (5 min)

- Took place on Janaury 15th 2018
- Took place in SQL City

5. Starting the Investigation (10 min)

- ⅓ Crimes were murders
- A witness is named Annabel lives somewhere on Franklin Ave
- A witness that lives at the last house on Northwestern Dr

6. Interviewing Witnesses (10–15 min)

- Morty Schapiro lives at the last address in Northwestern Dr their id is 14887
- Morty heard a gunshot then heard a man run out
- The man had a Get Fit Now Gym bag that had a membership number of 48Z
- Only gold members have that select gym bag
- The man got into a car with a plate that included H42W

7. Following Leads (15 min)

- There are 4 individuals with the first name Annabel
- Only Annabell Miller ID 16371 goes to get fit now

8. Narrowing Down Suspects (10 min)

- Annabell Miller saw the murder from the gym on Janaury 9th
- There were two people at the gym that day with a membership containing 48Z
- 48Z7A or 48Z55
- Two key suspects Joe Germuska ID 28819 or Jermy Bowers ID 67318

9. Final Interview (10 min)

- Jermy Bowers ID 67318 was hired by a women who is around 5'5 to 5'7 that has red hair and drives a Tesla Model S and attended the SQL Symphony Concerrt 3 times in December 2017

10. The Big Reveal (10 min)

- Only 3 people drive a Tesla Model S the plate numbers are 500123 08CM64 917UU3
- Suspects are Red Korb 78881, Regina George 90700, and Miranda Priestly 99716
- Only Miranda Priestly ID 99716 attended SQL Symphony Concer 3 Times