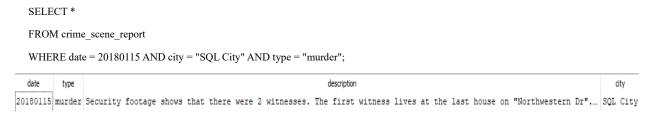**SQL Murder Mystery**


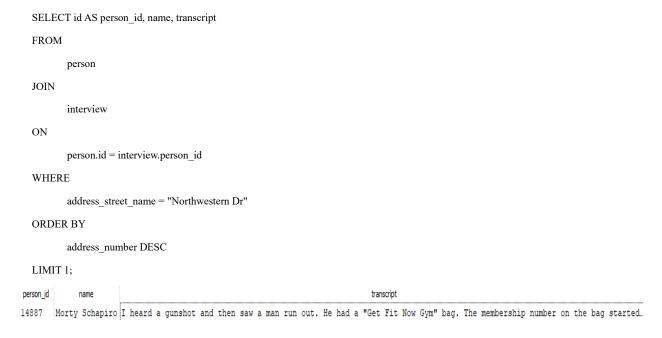**Portfolio Project: Problem Solve with SQL**

**Prepared by: Jianyu Jia**

**Date: November 21, 2024**

The murder was reported on 01/15/2018 in SQL City. The crime report shows that there are two witnesses, and the first witness lives at the last house on "Northwestern Dr". The second witness, named Annabel, lives somewhere on "Franklin Ave".

SELECT *

FROM crime_scene_report

WHERE date = 20180115 AND city = "SQL City" AND type = "murder";

| date | type | description | city |
|---|---|---|---|
| 20180115 | murder | Security footage shows that there were 2 witnesses. The first witness lives at the last house on "Northwestern Dr".… | SQL City |

By finding the last house on Northwester Dr, I was able to learn more about the person who lives there. The first witness, Morty Schapiro, says in his transcript, "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.""

SELECT id AS person_id, name, transcript

FROM

       person

JOIN

       interview

ON

       person.id = interview.person_id

WHERE

       address_street_name = "Northwestern Dr"

ORDER BY

       address_number DESC

LIMIT 1;

| person_id | name | transcript |
|---|---|---|
| 14887 | Morty Schapiro | 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… |

From further investigation, I have found out the second witness whose full name is Annabel Miller, said "I saw the murder happen, and I recognized the killer from my gym when I was working out last week on January the 9th." in the transcript. Her check-in and check-out time on January 9th shows that she was there between 16:00 and 17:00.

SELECT

  person.name,

  person.address_street_name,

  person.address_number,

  interview.transcript,

```
    get_fit_now_check_in.check_in_date,

    get_fit_now_check_in.check_in_time,

    get_fit_now_check_in.check_out_time

FROM

    person

JOIN

    interview

ON

    person.id = interview.person_id

JOIN

    get_fit_now_member

ON

    person.id = get_fit_now_member.person_id

JOIN

    get_fit_now_check_in

ON

    get_fit_now_member.id = get_fit_now_check_in.membership_id

WHERE

    person.address_street_name = "Franklin Ave"

    AND person.name LIKE "%Annabel%";
```

| name | address_street_name | address_number | transcript | check_in_date | check_in_time | check_out_time |
|---|---|---|---|---|---|---|
| Annabel Miller | Franklin Ave | 103 | I saw the murder happen, and I recognized the killer from my… | 20180109 | 1600 | 1700 |

Now, by combining the information that Morty Schapiro provided, we know that the murderer has a gym membership number starting with "48Z", and a license plate with "H42W". Jeremy Bowers appeared to be the only one that matched both pieces of information. Annabel Miller who saw the murder happen was at the gym from 4 PM to 5 PM also matches the time Jeremy Bowers was at the gym, which was from 3:30 PM to 5 PM. With all of this information, we can confidently appoint the murderer on January 9th, 2018 as Jeremy Bowers.

```
SELECT person.name, get_fit_now_check_in.membership_id, check_in_date, check_in_time, check_out_time, drivers_license.id AS drivers_license_id, plate_number

FROM

        get_fit_now_check_in

JOIN

        get_fit_now_member

ON

        get_fit_now_check_in.membership_id = get_fit_now_member.id

JOIN
```

    person

ON

    get_fit_now_member.person_id = person.id

JOIN

    drivers_license

ON

    drivers_license.id = person.license_id

WHERE

    membership_id LIKE "48Z%"

    AND plate_number LIKE "%H42W%";

| name | membership_id | check_in_date | check_in_time | check_out_time | drivers_license_id | plate_number |
|---|---|---|---|---|---|---|
| Jeremy Bowers | 48Z55 | 20180109 | 1530 | 1700 | 423327 | 0H42W2 |