

Detective SQL

QUESTION:

A crime has taken place and the detective needs your help. The detective gave you the crime scene report, but you somehow lost it. You vaguely remember that the crime was a murder that occurred sometime on Jan.15, 2018, and that it took place in SQL City. Start by retrieving the corresponding crime scene report from the police department's database.

Information deduced from the question:

- Crime - Murder
- Date of crime - Jan 15, 2018
- Crime Scene - SQL City
- I am a careless person (why else would I misplace a sensitive report)

Crime-Scene Report

Using the above information, let's check through the crime-scene report

```
1 SELECT *
2 FROM crime_scene_report
3 WHERE type = 'murder'
4     AND city LIKE 'SQL%'
5     AND date = 20180115
```

Below is the crime scene report that matches the crime information:

<

Open ROW

>

✕

date

20180115

type

murder

description

Security footage shows that there were 2 witnesses. The first witness lives at the last house on "Northl

city

SQL City

Close

The description reads:

'Security footage shows that there were 2 witnesses. The first witness lives at the last house on "Northwestern Dr". The second witness, named Annabel, lives somewhere on "Franklin Ave".'

Time to find the two witnesses

- Annabel of 'Franklin Ave'
- Anonymous witness of 'Northwestern Dr'

Finding Annabel:

To get Annabel's interview account, we need to get her *person_id* from *person* table using her *name* and *address_street_name* as filters

Below is the output:

Using her *person_id*, let us check what she has to say

```
1 SELECT *
2 FROM person
3 WHERE name LIKE '%Annabel%'
4       AND address_street_name = 'Franklin Ave'
```

person_id	transcript
16371	I saw the murder happen, and I recognized the killer from my gym when I was working out last week on January the 9th.

Finding the Anonymous Witness of 'Northwestern Dr'

```
1 SELECT *
2 FROM person
3 WHERE address_street_name = 'Northwestern Dr'
```

The output of the above code shows 50 people live in Northwestern Dr street.
(ofcourse, he can't be living alone on the street)

But we know he lives on the last house in Northwestern Dr. So, his
address_number will be the highest

```

17 SELECT id, name, address_street_name, address_number
18 FROM person
19 WHERE address_street_name = 'Northwestern Dr'
20 ORDER BY address_number DESC
21 LIMIT 1

```

id	name	address_street_name	address_number
14887	Morty Schapiro	Northwestern Dr	4919

Time to check if Morty Schapiro was brought in for interview and if he was, we need to find out his account to determine if we have the right person

```

17 SELECT id, name, address_street_name, address_number, transcript
18 FROM person
19 INNER JOIN interview
20 ON person.id = interview.person_id
21 WHERE address_street_name = 'Northwestern Dr'
22 ORDER BY address_number DESC
23 LIMIT 1
24

```

id	name	address_street_name	address_number	transcript
14887	Morty Schapiro	Northwestern Dr	4919	I heard a gunshot and then saw a man run out. He had a ...

Got ya, anonymous witness!

This is what Morty Schapiro said about the crime incident:

"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"

Search for the Suspect

The information gathered from the two witnesses are as follows:

- Suspect was at the gym on 9th Jan, 2018
- Membership number starts with '48Z'
- He has 'gold' membership status
- Car plate number includes 'H42W'

These information can be retrieved from `get_fit_now_check`, `get_fit_now_member` and `drivers_license` tables.

Armed with this information, let us narrow the suspect pool and query the gym information first.

```
1 SELECT check_in_date,  
2         person_id,  
3         name,  
4         membership_id,  
5         membership_status  
6 FROM get_fit_now_check_in AS C  
7 JOIN get_fit_now_member AS M  
8     ON C.membership_id = M.id  
9 WHERE check_in_date = 20180109  
10      AND membership_status = 'gold'  
11      AND membership_id LIKE '48Z%'
```

So we have two suspects :

check_in_date	person_id	name	membership_id	membership_status
20180109	28819	Joe Germuska	48Z7A	gold
20180109	67318	Jeremy Bowers	48Z55	gold

There is just 1 killer, time to vindicate one and nail the other.

Who is it going to be?

Let us query the driver_license table.

```

1 SELECT P.id,
2     name,
3     license_id,
4     plate_number,
5     gender
6 FROM person AS P
7 JOIN drivers_license AS D
8     ON P.license_id = D.id
9 WHERE plate_number LIKE '%H42W%'

```

id	name	license_id	plate_number	gender
51739	Tushar Chandra	664760	4H42WR	male
67318	Jeremy Bowers	423327	0H42W2	male
78193	Maxine Whitely	183779	H42W0X	female

You aren't gonna hear it from me...

See for yourself:

```

1 SELECT P.id,
2         name
3 FROM person AS P
4 JOIN drivers_license AS D
5     ON P.license_id = D.id
6 WHERE plate_number LIKE '%H42W%'
7
8 INTERSECT
9
10 SELECT person_id,
11         name
12 FROM get_fit_now_check_in AS C
13 JOIN get_fit_now_member AS M
14     ON C.membership_id = M.id
15 WHERE check_in_date = 20180109
16     AND membership_status = 'gold'
17     AND membership_id LIKE '48Z%'

```

id	name
67318	Jeremy Bowers

Jeremy Bowers!!!!

Against this background of information, it is clear the killer is Jeremy Bowers.

Was he brought in for interrogation? If yes, what did he say?

```

1 SELECT *
2 FROM interview
3 WHERE person_id = 67318

```

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...

He said,

"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."

Hunt for the Mistress-mind (villain)

From his confession, we can deduce that:

- Motive was money
- He was hired by a red hair woman with lots of money
- Woman's height is between 65" and 67"
- She drives a Tesla Model S
- She attended SQL Symphony concert 3 times in Dec 2017

This means the investigation isn't over.

Time to find the mistress -mind of the crime

Let us investigate the drivers_license table first

```
1 SELECT *
2 FROM drivers_license
3 WHERE gender = 'female'
4     AND height BETWEEN 65 AND 67
5     AND car_make = 'Tesla'
6     AND car_model = 'Model S'
7     AND hair_color = 'red'
```

id	age	height	eye_color	hair_color	gender	plate_nu...	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

We need to put a name to the above information and get *ssn* (Social Security Number) to enable us check the income

```
1 SELECT person.id,  
2     name,  
3     gender,  
4     height,  
5     car_make,  
6     car_model,  
7     hair_color,  
8     ssn  
9 FROM person  
10 INNER JOIN (  
11     SELECT *  
12     FROM drivers_license  
13     WHERE gender = 'female'  
14     AND height BETWEEN 65 AND 67  
15     AND car_make = 'Tesla'  
16     AND car_model = 'Model S'  
17     AND hair_color = 'red') AS feature  
18 ON person.license_id = feature.id
```

id	name	gender	height	car_make	car_model	hair_color	ssn
78881	Red Korb	female	65	Tesla	Model S	red	961388910
90700	Regina George	female	66	Tesla	Model S	red	337169072
99716	Miranda Priestly	female	66	Tesla	Model S	red	987756388

Time to check which of these women have lots of money!

```

1 WITH suspect AS (
2 SELECT person.id, name, gender, height, car_make,
3        car_model, hair_color, ssn
4 FROM person
5 INNER JOIN (
6     SELECT *
7     FROM drivers_license
8     WHERE gender = 'female'
9     AND height BETWEEN 65 AND 67
10    AND car_make = 'Tesla'
11    AND car_model = 'Model S'
12    AND hair_color = 'red') AS feature
13 ON person.license_id = feature.id)
14
15 SELECT *
16 FROM suspect
17 INNER JOIN income
18 ON suspect.ssn = income.ssn

```

id	name	gender	height	car_make	car_mo...	hair_co...	ssn	ssn	annual_income
78881	Red Korb	female	65	Tesla	Model S	red	9613889...	961...	278000
99716	Miranda Priestly	female	66	Tesla	Model S	red	9877563...	987...	310000

We can see that we have information on only two of the women and their annual incomes are comparable to each other.

We don't yet have enough evidence to pick one as the mistress-mind.

Recall, the killer said that the woman attended SQL Symphony Concert 3 times in Dec 2017.

Who are the people that this description matches?

Which of these women matches too?

```

1 SELECT *,
2     COUNT(person_id) AS attendance_number
3 FROM facebook_event_checkin
4 WHERE date BETWEEN 20171201 AND 20171231
5     AND event_name LIKE '%SQL%'
6 GROUP BY person_id
7 HAVING COUNT (person_id) = 3

```

person_id	event_id	event_name	date	attendance_number
24556	1143	SQL Symphony Concert	20171207	3
99716	1143	SQL Symphony Concert	20171206	3

We have a *person_id* - 99716 with the name - 'Miranda Priestly'!

Have we nailed it??

```

43 INSERT INTO solution VALUES (1, 'Miranda Priestly')
44
45 SELECT *
46 FROM solution
47

```

user	value
0	Congrats, you found the brains behind the murder! Everyone in SQL City hails you as the greatest SQL detective of all time. Time ...



LESSONS LEARNT:

Never misplace a sensitive document such as a crime scene report