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:

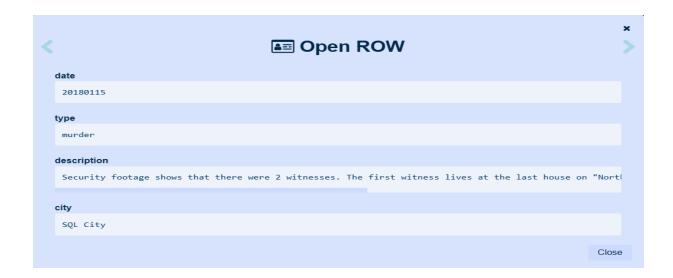
- Crime Murder
- Date of crime Jan 15, 2018
- Crime Scene SQL City
- I am a careless person (why else would I misplace a sensitive report)

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:



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.
```

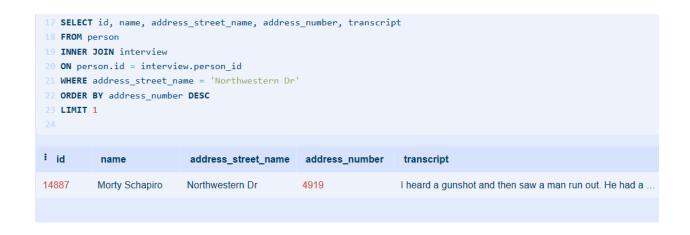
Finding the Anonymous Witness of 'Northwestern Dr'

```
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

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



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.

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,
          name,
          license_id,
          plate_number,
          gender
 6 FROM person AS P
 7 JOIN drivers_license AS D
       ON P.license_id = D.id
 9 WHERE plate_number LIKE '%H42W%'
i id
                        name
                                               license_id
                                                                      plate_number
                                                                                             gender
51739
                       Tushar Chandra
                                              664760
                                                                      4H42WR
                                                                                             male
67318
                       Jeremy Bowers
                                              423327
                                                                      0H42W2
                                                                                             male
78193
                       Maxine Whitely
                                                                      H42W0X
                                              183779
                                                                                             female
```

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

See for yourself:

```
1 SELECT P.id,
         name
 3 FROM person AS P
   JOIN drivers_license AS D
      ON P.license_id = D.id
 6 WHERE plate_number LIKE '%H42W%'
 8 INTERSECT
10 SELECT person_id,
12 FROM get_fit_now_check_in AS C
13 JOIN get_fit_now_member AS M
      ON C.membership_id = M.id
15 WHERE check_in_date = 20180109
      AND membership_status = 'gold'
      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

i 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

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'
      AND height BETWEEN 65 AND 67
      AND car_make = 'Tesla'
      AND car_model = 'Model 5'
       AND hair_color = 'red'
id
                          height
                                       eye_color
                                                    hair_color
                                                                 gender
                                                                              plate_nu...
                                                                                           car_make
                                                                                                        car_model
202298
            68
                          66
                                      green
                                                                 female
                                                                             500123
                                                                                           Tesla
                                                                                                       Model S
                                                    red
291182
                                       blue
                                                                 female
                                                                             08CM64
                                                                                                       Model S
                                                    red
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 SELE	CT person.id,									
	name,									
	gender,									
	height,									
	car_make,									
	car_model,									
	hair_color,									
	ssn									
9 FROM person										
10 INNER JOIN (
	SELECT *									
	FROM drivers_license									
	WHERE gender = 'female'									
	AND height BETWEEN 65 AND 67									
	AND car_make = 'Tesla'									
	AND car_model = 'Model S'									
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			
0700	Regina George	female	66	Tesla	Model S	red	337169072			
9716	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,
         car_model, hair_color, ssn
4 FROM person
5 INNER JOIN (
         SELECT *
        FROM drivers_license
        WHERE gender = 'female'
        AND height BETWEEN 65 AND 67
        AND car_make = 'Tesla'
        AND car_model = 'Model S'
         AND hair_color = 'red') AS feature
13 ON person.license_id = feature.id)
15 SELECT *
16 FROM suspect
17 INNER JOIN income
18 ON suspect.ssn = income.ssn
id
                                height car_make car_mo... hair_co... ssn
                                                                                         annual_income
       name
                      gender
78881 Red Korb
                     female
                                        Tesla
                                                  Model S
                                                             red 9613889...
99716 Miranda Priestly female
                                                  Model S
                                                                       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 *,
         COUNT(person_id) AS attendance_number
 3 FROM facebook_event_checkin
 4 WHERE date BETWEEN 20171201 AND 20171231
      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??

```
INSERT INTO solution VALUES (1, 'Miranda Priestly')

SELECT *
FROM solution

value

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