

Dear Sir or Madam,

Hope this mail finds you well. It is our pleasure to make contributions for the public safety around our community. Here are the steps we have done to find the person who may take responsibility for the murder:

- Firstly, we found the corresponding report according to the crime date, type and locations. We can see there are 2 witnesses. In the following steps, we would like to found these two persons' personal information.

```
mysql> select * from FieldReports where date = 20180115 and type = 'murder' and city = 'Big Ten City';
```

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". The second witness, named Annabel, lives somewhere on "Franklin Ave".	Big Ten City

```
1 row in set (0.05 sec)
```

- For the first witness who lives at the last house on 'Northwestern Dr', we found:

```
mysql> select * from Person where address_street_name = 'Northwestern Dr' order by address_number desc limit 1;
```

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

```
1 row in set (0.05 sec)
```

- For the second witness named Annabel lives on 'Franklin Ave', we found:

```
mysql> select * from Person where name like '%Annabel%' and address_street_name = 'Franklin Ave';
```

id	name	license_id	address_number	address_street_name	ssn
16371	Annabel Miller	490173	103	Franklin Ave	318771143

```
1 row in set (0.05 sec)
```

- Since we found the accurate witnesses' information, now we can have a look about there interview:
 - This is from Morty's interview:

```
mysql> select * from people_interview where person_id = 14887;
```

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 "482". Only gold members have those bags. The man got into a car with a plate that included "H42W".

```
1 row in set (0.04 sec)
```

- This is from Annabel's interview:

```
mysql> select * from people_interview where person_id = 16371;
```

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.

1 row in set (0.04 sec)

- Therefore, we know that the murder enrolled the 'Get Fit Now Gym' and worked out at January, 9th, also his(maybe her) gold membership number started with '48Z'. And he had a car with a plate that included 'H42W'

- Now, we firstly find the car information

```
mysql> select * from driversLicense where plate_number like '%H42W%';
```

id	age	height	eye_color	hair_color	gender	plate_number	car_make	car_model
183779	21	65	blue	blonde	female	H42W0X	Toyota	Prius
423327	30	70	brown	brown	female	0H42W2	Chevrolet	Spark LS
664760	21	71	black	black	male	4H42WR	Nissan	Altima

3 rows in set (0.05 sec)

- Then, we find corresponding person

```
mysql> select * from Person where license_id in (183779, 423327, 664760);
```

id	name	license_id	address_number	address_street_name	ssn
78193	Maxine Whitely	183779	110	Fisk Rd	137882671
66725	Rashida Jones	423327	530	Washington Pl, Apt 3A	871539279
51739	Tushar Chandra	664760	312	Phi St	137882671

3 rows in set (0.05 sec)

Alternate query:

```
mysql> select P.id from Person P join driversLicense D on P.license_id = D.id where D.plate_number like '%H42W%';
```

id
78193
66725
51739

3 rows in set (0.06 sec)

- Next, we take a look at the information from the gym

```
mysql> select * from Get_Fit_Now_Member where person_id in (78193, 66725, 51739) and membership_start_date < 20180109
-> and membership_status = 'gold' and id like '48Z%';
```

id	person_id	name	membership_start_date	membership_status
48Z55	66725	Mia Thermopolis	20160101	gold

1 row in set (0.05 sec)

- From above, we found the killer was the person with id 66725, now let's take a look with her transcripts.

```
mysql> select * from people_interview where person_id = 66725;
```

person_id	transcript
66725	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.

1 row in set (0.04 sec)

- From the killer's transcript, we found she was hired by someone else for this murder who has height between 65 and 67, had red hair and owned Tesla Model S, also attended the SQL Symphony Concert 3 times in December 2017
 - We started with driverlicense table, since people may lied about rhe gender so we ignored filtering gender conditions

```
mysql> select P.id as person_id, P.name, D.id as license_id from Person P join driversLicense D on P.license_id = D.id where D.height>= 65 and D.height<= 67 and D.hair_color = 'red' and D.car_make = 'Tesla' and D.car_model = 'Model S';
```

person_id	name	license_id
99651	Uma Thurman	202298
90700	Regina George	291182
78881	Red Korb	918773

3 rows in set (0.05 sec)

- Then, we investigated the event table and finally found the person

```
mysql> select * from Facebook_Event_CheckIn where person_id in (99651, 90700,78881) and event_name = 'SQL Symphony Concert' -> and date like '201712%';
```

person_id	event_id	event_name	date
99651	1143	SQL Symphony Concert	20171206
99651	1143	SQL Symphony Concert	20171212
99651	1143	SQL Symphony Concert	20171229

3 rows in set (0.05 sec)

- Therefore, the killer was the person with id 66725, and she was hired but the woman with id 99651, following are their personal information**

```
mysql> select * from Person where id in (66725, 99651);
```

id	name	license_id	address_number	address_street_name	ssn
66725	Rashida Jones	423327	530	Washington Pl, Apt 3A	871539279
99651	Uma Thurman	202298	1883	Golden Ave	987756388

2 rows in set (0.05 sec)

Above is our investigation process. Hope this will be helpful for you.

Regards,

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