

A SQL Murder Mystery

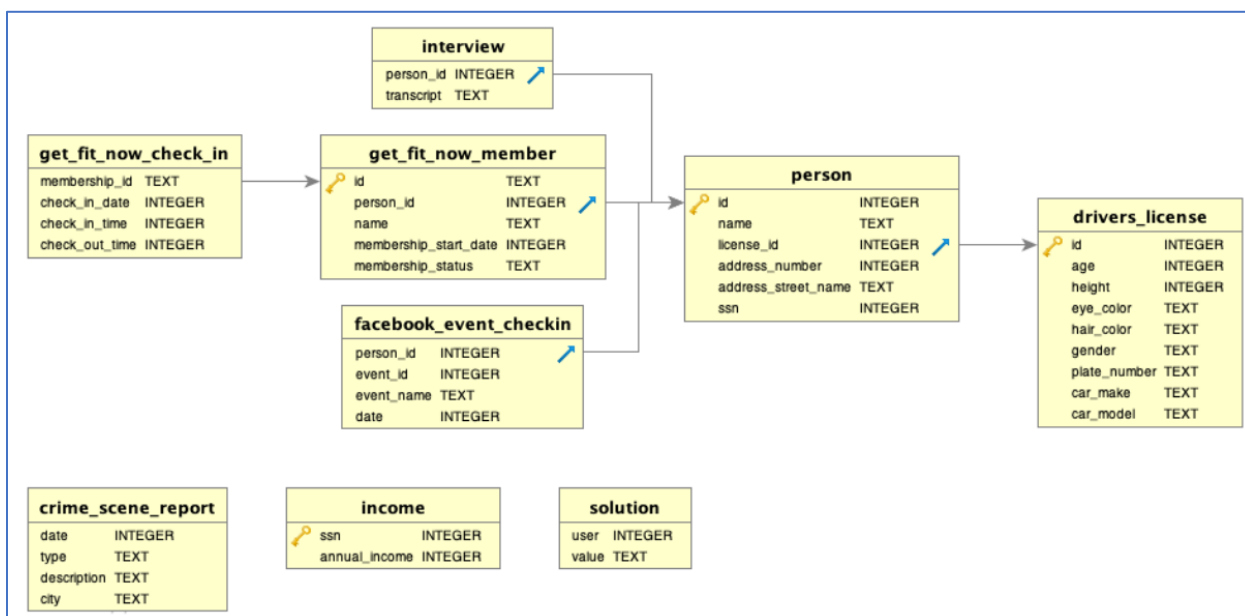
CTF: What is the ID of the murderer?

[The SQL Murder Mystery: Detailed Walkthrough \(knightlab.com\)](https://knightlab.com/the-sql-murder-mystery-detailed-walkthrough/)

CLUE #1

There was a **murder** on **Jan.15, 2018** in **SQL City**. Start by retrieving the corresponding crime scene report from the police department's database.

Schema:



Here are some queries to play with:

- Select count(*) from crime_scene_report;
- Select count(distinct city) from crime_scene_report;
- Select distinct type from crime_scene_report;

```
SELECT * FROM crime_scene_report
WHERE type = 'murder'
AND lower(city) = 'sql city'
AND date = 20180115
```

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".	SQL City

REVEALS:

1. 1st witness: lives in the last house on Northwestern Dr
2. 2nd witness: Annabel, lives on Franklin Ave

WITNESS #1 INFO

```
SELECT * FROM person
WHERE address_street_name = 'Northwestern Dr'
AND address_number =
    (SELECT max(address_number) from person
     WHERE address_street_name = 'Northwestern Dr')
```

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

WITNESS #2 INFO

```
SELECT * FROM person
WHERE address_street_name = 'Franklin Ave'
AND lower(name) like 'annabel%'
```

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

REVEALS: The unique ID of each witness.

NEXT: Get their Interview transcripts.

```
SELECT person.id, person.name, transcript
FROM Person
INNER JOIN Interview
ON person.id = interview.person_id
WHERE person.id In (14887, 16371)
```

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 with "48Z". Only gold members have those bags. The man got into a car with a plate that included "H42W".
16371	Annabel Miller	I saw the murder happen, and I recognized the killer from my gym when I was working out last week on January the 9th.

REVEALS:

1. The murderer was at the gym on 20180109, the same time Annabel was there.
2. He/she membership number starts with 48Z, a gold member
3. He/she has a car plate that includes H42W

NEXT: Let's go to the gym.

Find out what the time period that Annabel was at the gym.

```
SELECT
get_fit_now_member.id,
get_fit_now_member.person_id,
get_fit_now_member.name,
get_fit_now_member.membership_status
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 get_fit_now_member
INNER JOIN get_fit_now_check_in
ON get_fit_now_member.id = get_fit_now_check_in.membership_id
WHERE get_fit_now_check_in.check_in_date = 20180109
order by get_fit_now_check_in.check_in_time
```

REVEALS:

Annabel was there between 1600 and 1700.

Jeremy Bowers and Joe Germuska were there during Annabels' timeframe.

Note, both men have Gold status and '48Z' is in their membership number.

id	person_id	name	membership_status	check_in_date	check_in_time	check_out_time
7MWHJ	31523	Blossom Crescenzo	regular	20180109	273	885
UK1F2	28073	Zackary Cabotage	silver	20180109	344	518
GE5Q8	92736	Carmen Dimick	gold	20180109	367	959
6LSTG	83186	Burton Grippe	gold	20180109	399	515
1AE2H	10815	Adriane Pelligra	silver	20180109	461	944
XTE42	55662	Sarita Bartosh	gold	20180109	486	1124
X0643	15247	Shondra Ledlow	silver	20180109	957	1164
48Z55	67318	Jeremy Bowers	gold	20180109	1530	1700
48Z7A	28819	Joe Germuska	gold	20180109	1600	1730
90081	16371	Annabel Miller	gold	20180109	1600	1700

NEXT: Let's get the license plate numbers.

```
SELECT person.id, person.name, person.license_id,  
Drivers_license.plate_number, Drivers_license.car_make, Drivers_license.car_model  
FROM Person  
INNER JOIN drivers_license  
ON person.license_id = Drivers_license.id  
WHERE person.id In (67318, 28819)
```

id	name	license_id	plate_number	car_make	car_model
67318	Jeremy Bowers	423327	0H42W2	Chevrolet	Spark LS

It only shows Jeremy.

```
select * from drivers_license where id = 173289      --no data for Joe--
```

The murderer is Jeremy Bowers, person.id = 67318.

Check your solution

Did you find the killer?

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

RUN ↴

RESET

value

Congrats, you found the murderer! But wait, there's more... If you think you're up for a challenge, try querying the interview transcript of the murderer to find the real villain behind this crime. If you feel especially confident in your SQL skills, try to complete this final step with no more than 2 queries. Use this same INSERT statement with your new suspect to check your answer.

Part II

CTF: SQL Who is the real Villian?

NEXT: Get the Interview transcript by Jeremy.

```
SELECT person.id, person.name, transcript
FROM Person
INNER JOIN Interview
ON person.id = interview.person_id
WHERE person_id In (67318)
```

REVEALS:

id	name	transcript
67318	Jeremy Bowers	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.

NEXT: Look at Driver License Table.

```
SELECT person.id, person.name, person.license_id,
Drivers_license.gender, Drivers_license.height, Drivers_license.hair_color,
Drivers_license.car_make, Drivers_license.car_model
FROM drivers_license
INNER JOIN Person
ON Drivers_license.id = person.license_id
WHERE Drivers_license.car_make = 'Tesla'
AND Drivers_license.car_model = 'Model S'
AND Drivers_license.hair_color = 'red'
AND Drivers_license.height BETWEEN 65 and 67;
```

id	name	license_id	gender	height	hair_color	car_make	car_model
78881	Red Korb	918773	female	65	red	Tesla	Model S
90700	Regina George	291182	female	66	red	Tesla	Model S
99716	Miranda Priestly	202298	female	66	red	Tesla	Model S

NEXT: The last clue is that she went to a concert, 3x, in Dec. 2017.

****Poke around the facebook_event_checkin table**

Then...

```
1 Select person_id,  
2 COUNT(event_name)  
3 from facebook_event_checkin  
4 where event_name = 'SQL Symphony Concert'  
5 AND person_id IN (78881, 90700, 99716)  
6 GROUP BY person_id  
7
```

RUN ↴ RESET

person_id	COUNT(event_name)
99716	3

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!