Question 2:

Step 1: Explore the Database Structure:

```
SELECT name FROM sqlite_master WHERE type = 'table';
```

name
crime_scene_report
drivers_license
facebook_event_checkin
interview
get_fit_now_member
get_fit_now_check_in
solution
income
person

Next, examine the structure of the **crime_scene_report** table to understand its fields.

```
SELECT sql FROM sqlite_master WHERE name = 'crime_scene_report';
```

sql
CREATE TABLE crime_scene_report (date integer, type text, description text, city text)

Step 2: Retrieve Crime Scene Report

Since the murder happened on **(date= January 15, 2018)**, in **(city= SQL City),** retrieve the crime scene report with the following query:

```
SELECT * FROM crime_scene_report WHERE type = 'murder'
AND 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

Step 3: Investigate Witnesses

- Find the first witness by querying the person table for the person living at the **last house** on **Northwestern Dr**:

```
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

- Find the second witness, named Annabel, living on Franklin Avenue:

```
SELECT * FROM person
```

```
WHERE address_street_name = 'Franklin Ave'
AND name LIKE 'Annabel%';
```

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

Step 4: Examine Witness Interviews

Get the transcripts from the interview table using the person_id for both witnesses:

```
SELECT * FROM interview  WHERE person_id = 14887  OR person_id = 16371;
```

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 "48Z". Only gold members have those bags. The man got into a car with a plate that included "H42W".
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.

Step 5: Investigate Potential Suspects

Use the first witness's description to query the person, get_fit_now_member, and drivers_license tables. Specifically, look for a person with a gold membership, certain membership ID, and a specific car plate number:

```
SELECT per.id, gm.name, gm.id, gm.membership_status, d.plate_number
FROM person as per
JOIN get_fit_now_member as gm ON per.id = gm.person_id
JOIN drivers_license as d ON per.license_id = d.id
WHERE gm.membership_status = 'gold'
AND gm.id LIKE '48Z%' AND d.plate_number LIKE '%H42W%';
```

id	name	id	membership_status	plate_number
67318	Jeremy Bowers	48Z55	gold	0H42W2

Step 6: Solve the Crime: Based on the evidence, you confirm that 'Jeremy Bowers' is the murderer.

```
INSERT INTO solution VALUES (1, 'Jeremy Bowers');
```

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.

Step 7: Identify the Real Villain

1. Retrieve Jeremy Bowers interview transcript:

```
SELECT * FROM interview 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 red hair and she drives a Tesla Model S. I know that she attended the SQL Symphony Concert 3 times in December 2017.

2. Find the real villain based on the interview information:

```
SELECT p.id, p.name, d.height, d.hair_color, d.gender, d.car_make, d.car_model FROM person AS p
JOIN facebook_event_checkin AS fb ON p.id = fb.person_id
JOIN drivers_license AS d ON p.license_id = d.id
WHERE fb.event_name = 'SQL Symphony Concert'
  AND fb.date BETWEEN 20171201 AND 20171231
  AND d.car_make = 'Tesla'  AND d.car_model = 'Model S'
  AND d.gender = 'female' AND d.hair_color = 'red'  AND d.height BETWEEN 65 AND 67
GROUP BY p.id
HAVING COUNT(fb.person_id) = 3;
```

person_id	name	hair_color	height	gender	car_make	car_model
99716	Miranda Priestly	red	66	female	Tesla	Model S

Step 8: Confirm the Villain: From the query result, you will find that the real villain is 'Miranda Priestly.'

```
INSERT INTO solution VALUES (1, 'Miranda Priestly');
SELECT value 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 to break out the champagne!

Conclusion:

=> The murderer is 'Jeremy Bowers,' but the real villain is 'Miranda Priestly.'