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: Confirm whether the suspect was checked into the gym on January 9, 2018:

SELECT * FROM get_fit_now_check_in WHERE membership_id = '48Z55';

membership_id	check_in_date	check_in_time	check_out_time
48Z55	20180109	1530	1700

Step 7: Solve the Crime: Based on the evidence, you confirm that 'Jeremy Bowers' is the murderer.

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

Step 8: 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 9: 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;

Conclusion:

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