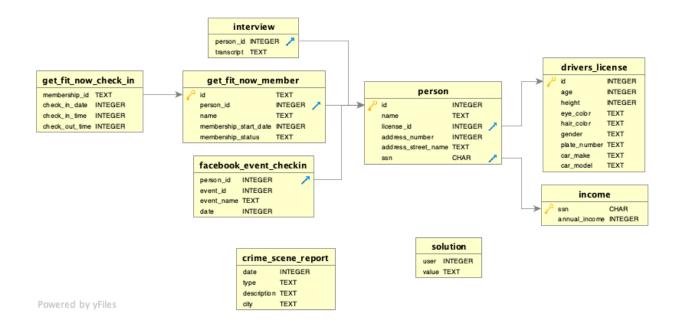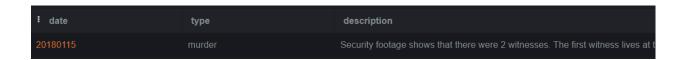# DETECTIVE TERRY-MARTINS & A MURDER MYSTERY

This is an analysis to solve a murder case for the SQL City Police Department, a dataset which includes several tables and some clues have been provided to aid in the swift procurement of justice.

I start off by filtering the Crime Scene Report data by date, location & crime type since they've been given.

```sql
1  -- Filter the list down by date, location & type
2  SELECT *
3  FROM crime_scene_report
4  WHERE type = 'murder' AND date = 20180115 AND city = 'SQL City';
```

The results show there are 2 witnesses of the event who live in different locations.

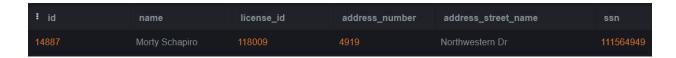| date	type	description
20180115	murder	Security footage shows that there were 2 witnesses. The first witness lives at t

The first witness is unnamed, however a general living area is given, the second witness has a name and address.

I continue my search with the 1st witness. The crime report says she lives at the last house on NorthWestern.

```
 6 -- Search for witness 1 who lives at the last house on Northwestern Dr
 7 SELECT *
 8 FROM person
 9 WHERE address_street_name LIKE '%NorthWestern%'
10 ORDER BY address_number DESC;
```

Her name is Morty Schapiro with id 14887 and ssn 111564949.

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

I continue my probe into the second witness because everyone is a suspect and no stone will be left unturned in the search for this murderer.

```
12 -- Search for witness 2 who bears Annabel & lives on Franklin Ave from the Crime Scene Report
13 SELECT *
14 FROM person
15 WHERE name LIKE '%Annabel%' AND address_street_name LIKE '%Franklin%';
```

Her name is Annabel Miller with id 490173 and ssn 31877143.

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

Now I have the names and some information on both witnesses. I take a deeper dive into their statements for clues on who the killer may be.
For witness 1:

```
17 -- Now I compare their statements. For witness 1 :-
18 SELECT *
19 FROM interview
20 WHERE person_id = 14887;
```

She says she heard a gunshot and then saw a man with a "Get Fit Now Gym" bag run out. The membership id on the bag started with "48Z" and only gold members have those bags. She also says she saw him get into a car with a plate number which included "H42W". I'll keep this info for a later look while I move on to witness 2.

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...

For witness 2:

```
22 -- For witness 2 :-
23 SELECT *
24 FROM interview
25 WHERE person_id = 16371;
```

She says she recognized the killer from her gym when she was working out on 09012018.

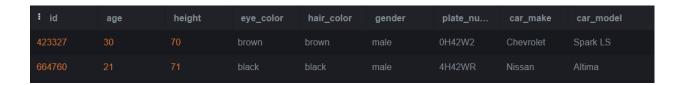| person_id	transcript
16371	I saw the murder happen, and I recognized the killer from my gym when I was working out last week on January the 9th.

I look into that info I kept earlier and proceed to filter the gym data by the membership id and status.

```
27 -- Filter the get fit table by membership id and status
28 SELECT *
29 FROM get_fit_now_member
30 WHERE id LIKE '%48Z%' AND membership_status = 'gold';
```

There are 2 suspects whose names are Joe Germuska & Jeremy Bowers with ids 48Z7A & 48Z55 respectively.

id	person_id	name	membership_start_date	membership_status
48Z7A	28819	Joe Germuska	20160305	gold
48Z55	67318	Jeremy Bowers	20160101	gold

I proceed to filter the drivers license table by plate number and gender. There are 2 results with ids 423327 & 664760.

id	age	height	eye_color	hair_color	gender	plate_nu...	car_make	car_model
423327	30	70	brown	brown	male	0H42W2	Chevrolet	Spark LS
664760	21	71	black	black	male	4H42WR	Nissan	Altima

I proceed to filter by these ids.

```
37 -- Filter by license id
38 SELECT *
39 FROM person
40 WHERE license_id = '423327';
```

The license id 423327 bears the name Jeremy Bowers, it's a match for one of the suspects from the gym.
Gym id 48Z55 is a match for license id 423327.

id	name	license_id	address_number	address_street_name	ssn
67318	Jeremy Bowers	423327	530	Washington Pl, Apt 3A	871539279

I have been able to narrow the prime suspect in the case, Jeremy Bowers, however there is more work to be done, I don't know his motive **YET**.

I proceed to filter the interview table by his id 67318 to read his statement.

```
42 -- Filter by person id
43 SELECT *
44 FROM interview
45 WHERE person_id = 67318;
```

In his interview he says he was hired by a woman with a lot of money who has red hair, drives a Tesla Model S & is between 65 - 67 inches tall. He also says she was at the SQL Symphony concert 3 times in December 2017.

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 hai...

I go in search of this mystery woman who would hire another man to do her dirty work.

```
47 -- Filter drivers_license by height, hair color and car model
48 SELECT *
49 FROM drivers_license
50 WHERE (height BETWEEN 65 AND 67) AND (hair_color = 'red') AND (car_make = 'Tesla');
```

There are 3 results with ids 202298, 291182, 918773. I have one more clue to explore, the concert.

id	age	height	eye_color	hair_color	gender	plate_nu...	car_make	car_model
202298	68	66	green	red	female	500123	Tesla	Model S
291182	65	66	blue	red	female	08CM64	Tesla	Model S
918773	48	65	black	red	female	917UU3	Tesla	Model S

I proceed to filter the facebook table and then run the result against 2 other tables with the result of the earlier query as another filter.

```
52 -- Filter the facebook by events name & date. Run the result against the drivers license & person tables with id as prim
53 SELECT d.id, d.gender, d.height, d.car_model, d.car_make, p.name
54 FROM drivers_license d
55 JOIN person p
56 ON d.id = p.license_id
57 WHERE (d.height BETWEEN 65 AND 67) AND (d.hair_color = 'red') AND (d.car_make = 'Tesla')
58        AND p.id IN(
59                SELECT f.person_id
60                FROM facebook_event_checkin f
61                WHERE f.event_name = 'SQL Symphony Concert' AND date LIKE '%201712%'
62                GROUP BY person_id
63                HAVING COUNT (*) = 3
64                );
```

WE HAVE OUR MASTERMIND!!

id	gender	height	car_model	car_make	name
202298	female	66	Model S	Tesla	Miranda Priestly

Miranda Priestly is the criminal mastermind behind the death of one of SQL City's finest in this murder mystery and she will not escape justice's long reach.

I hope you enjoyed the solving of this mystery as much as I, the investigator did.