

SQL MURDER MYSTERY

Submitted by : SHREYA DEY (2237054)

QUERIES:

STEP 1: We try to find out the details of all the tables listed in the database named sqlite_master so that we can further look into the particular table details which will help us find the solution.

1. SELECT *
FROM sqlite_master

OUTPUT:

type	name	tbl_name	rootpage	Sql
table	crime_scene_report	crime_scene_report	2	CREATE TABLE crime_scene_report (date integer, type text, description text, city text)
table	drivers_license	drivers_license	3	CREATE TABLE drivers_license (id integer PRIMARY KEY, age integer, height integer, eye_color text, hair_color text, gender text, plate_number text, car_make text, car_model text)
table	facebook_event_checkin	facebook_event_checkin	5	CREATE TABLE facebook_event_checkin (person_id integer, event_id integer, event_name text, date integer, FOREIGN KEY (person_id) REFERENCES person(id))
table	interview	interview	6	CREATE TABLE interview (person_id integer, transcript text, FOREIGN KEY (person_id) REFERENCES person(id))
table	get_fit_now_member	get_fit_now_member	7	CREATE TABLE get_fit_now_member (id text PRIMARY KEY, person_id integer, name text, membership_start_date integer, membership_status text, FOREIGN KEY (person_id) REFERENCES person(id))
index	sqlite_autoindex_get_fit_now_member_1	get_fit_now_member	8	null
table	get_fit_now_check_in	get_fit_now_check_in	9	CREATE TABLE get_fit_now_check_in (membership_id text, check_in_date integer, check_in_time integer, check_out_time integer, FOREIGN KEY (membership_id) REFERENCES get_fit_now_member(id))
table	solution	solution	11	CREATE TABLE solution (user integer, value text)
trigger	check_solution	solution	0	CREATE TRIGGER check_solution AFTER INSERT ON solution WHEN new.user==1 BEGIN DELETE FROM solution; INSERT INTO solution VALUES (0, CASE WHEN hex(new.value)=='4A6572656D7920426F77657273' THEN "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." WHEN hex(new.value)=='4D6972616E6461205072696573746C79' THEN "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!" ELSE "That's not the right person. Try again!" END); END
table	income	income	10	CREATE TABLE income (ssn CHAR PRIMARY KEY, annual_income integer)
index	sqlite_autoindex_income_1	income	683	null

table	person	person	4	CREATE TABLE person (id integer PRIMARY KEY, name text, license_id integer, address_number integer, address_street_name text, ssn CHAR REFERENCES income (ssn), FOREIGN KEY (license_id) REFERENCES drivers_license (id))
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STEP 2: We look into the hints given in the mystery game; i.e, “The detective gave you the crime scene report, but you somehow lost it. You vaguely remember that the crime was a **murder** that occurred sometime on **Jan.15, 2018** and that it took place in **SQL City**.” So we try looking into the table crime_scene_report to find out what are the attribute names that can be matched with the city and date given.

```
2. SELECT *
FROM crime_scene_report
```

OUTPUT:

Date	type	description	city
20180215	murder	REDACTED REDACTED REDACTED	SQL City
20180215	murder	Someone killed the guard! He took an arrow to the knee!	SQL City
20170712	theft	A lone hunter stalks the night, firing arrows into the Darkness. There is no hiding, no escape. In the distance, the beast falters, tethered to the void. The killing blow comes without hesitation, without mercy.	SQL City
20170820	arson	Wield the Hammer of Sol with honor, Titan, it is a thing of legend, both past and future.	SQL City
20171110	robbery	The Gjallarhorn shoulder-mounted rocket system was forged from the armor of Guardians who fell at the Twilight Gap. Gifted to the survivors of that terrible battle, the Gjallarhorn is seen as a symbol of honor and survival.	SQL City
20180103	bribery	Apparently, Cayde thought it necessary to expose this extremely rare vegetable to a Hive summoning ritual.	SQL City
20180115	assault	Hamilton: Lee, do you yield? Burr: You shot him in the side! Yes he yields!	SQL City
20180115	assault	Report Not Found	SQL 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: As we find the attribute names, we specify the particular city and date we need to look into.

```
3. SELECT *
FROM crime_scene_report
WHERE city=="SQL City" and date=="20180115"
```

OUTPUT:

date	type	description	city
20180115	assault	Hamilton: Lee, do you yield? Burr: You shot him in the side! Yes he yields!	SQL City
20180115	assault	Report Not Found	SQL 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 4: Now since it is given that the crime that took place on 15th Jan 2018 was a crime, we find only one row specifying murder as the crime type. Hence the next step is to look into its details.It can be seen that the first witness

lives at the last house on Northwestern Dr, i.e, the address no. of that particular house will be the maximum.

```
4. SELECT *
FROM person
WHERE address_street_name=="Northwestern Dr"

ORDER BY address_number desc
```

OUTPUT:

id	name	license_id	address_number	address_street_name	ssn
14887	Morty Schapiro	118009	4919	Northwestern Dr	111564949
17729	Lasonya Wildey	439686	3824	Northwestern Dr	917817122
53890	Sophie Tiberio	957671	3755	Northwestern Dr	442830147
73368	Torie Thalmann	773862	3697	Northwestern Dr	341559436
96595	Coretta Cubie	303645	3631	Northwestern Dr	378403829
19420	Cody Schiel	890431	3524	Northwestern Dr	947110049
93509	Emmitt Aceuedo	916706	3491	Northwestern Dr	979073160
87456	Leonora Wolfsberger	215868	3483	Northwestern Dr	565203106
36378	Freddie Ellzey	267882	3449	Northwestern Dr	474117596
53076	Boris Bijou	664914	3327	Northwestern Dr	401191868
28360	Rashad Cascone	924517	3212	Northwestern Dr	838907424
23044	Val Portlock	924989	3143	Northwestern Dr	100593316
51114	Christena Saffell	814284	3055	Northwestern Dr	247657547
68690	Yer Modest	852404	3046	Northwestern Dr	419238039
44004	Alison Eska	327797	2951	Northwestern Dr	306417867
98593	Jonah Toner	578982	2947	Northwestern Dr	745853548
59307	Cyril Yongue	753524	2903	Northwestern Dr	866057839
34155	Allyson Lazenson	814209	2840	Northwestern Dr	991150469
90397	Dionna Kranwinkle	797260	2678	Northwestern Dr	278964807
54564	Sammie Sengun	217286	2590	Northwestern Dr	848854310

53699	Christian Pagano	628433	2585	Northwestern Dr	644772304
34352	Vincenza Burkhardt	436470	2512	Northwestern Dr	197913046
80921	Donovan Yackley	222395	2386	Northwestern Dr	515049359
96178	Galina Khuu	450248	2183	Northwestern Dr	398518185
81885	Kurtis Masuda	934201	2108	Northwestern Dr	201272595
88423	Teri Ehrich	510876	1879	Northwestern Dr	248637345
51552	Bonita Knie	764124	1726	Northwestern Dr	597137908
72076	Courtney Bordeaux	324614	1707	Northwestern Dr	347966356
81052	Calvin Czelusniak	471483	1516	Northwestern Dr	657531837
71924	Laurie Scronce	774116	1418	Northwestern Dr	254883636
23960	Kristopher Lagerberg	658777	1392	Northwestern Dr	492912529
70485	Andera Kostelecky	354822	1252	Northwestern Dr	787423012
22239	Dusty Sigafus	710517	1125	Northwestern Dr	724386723
18376	Josh Shi	653712	1091	Northwestern Dr	193899001
29608	Willetta Lurvey	800568	1028	Northwestern Dr	843751378
33415	Homer Simpson	108392	981	Northwestern Dr	871392019
55130	Shiloh Huntoon	472118	951	Northwestern Dr	826647644
44542	Ivory Mcgrevey	873842	897	Northwestern Dr	988557407
99826	Ivy Kazarian	994470	892	Northwestern Dr	208359813
25615	Olevia Morena	388477	812	Northwestern Dr	962831331
40760	Renata Faver	976650	745	Northwestern Dr	547572040
10010	Muoi Cary	385336	741	Northwestern Dr	828638512
39688	Abe Roeker	537445	689	Northwestern Dr	438969447
26758	Angelena Billman	942074	629	Northwestern Dr	341854756
75484	Del Tacderen	447887	607	Northwestern Dr	243821337

12711	Norman Apolito	667757	599	Northwestern Dr	778264744
85280	Donn Duin	569122	540	Northwestern Dr	613873810
40336	Fredia Billeter	251082	404	Northwestern Dr	108056488
15171	Weldon Penso	336999	311	Northwestern Dr	131379495
89906	Kinsey Erickson	510019	309	Northwestern Dr	635287661

*From the output we can conclude that our first witness of the murder is Morty Schapiro whose id number is 14887

STEP 5: Now we look into the details of the second witness about whom only the first name is specified, i.e, Annabel. There can be many people with the same name however the address may not be same. So we check all people with the name Annabel and luckily we find only one result.

```
5. SELECT *  
FROM person  
WHERE name LIKE 'Annabel %'
```

OUTPUT:

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

*From the output we can conclude that our second witness of the murder is Annabel Miller whose id number is 16371.

STEP 6: Now once we have found these witnesses we investigate them and look into what they have had to say about the murder taking place. The only way we can do this is by matching their id numbers with the ids in the interview table.

```
6. SELECT *  
FROM person P  
LEFT JOIN interview I ON P.id=I.person_id  
WHERE id=="14887" or id=="16371"
```

OUTPUT:

id	name	license_id	address_number	address_street_name	ssn	person_id	transcript
14887	Morty Schapiro	118009	4919	Northwestern Dr	111564949	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	Annabel Miller	490173	103	Franklin Ave	318771143	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 7: Next step is to look into the details of the interview of both the witnesses and search for the details in the respective tables available.

```
7. SELECT *
FROM get_fit_now_member M
LEFT JOIN get_fit_now_check_in C ON M.id=C.membership_id
WHERE C.check_in_date=="20180109" AND C.membership_id LIKE '48Z%' AND M.membership_status=="gold"
```

OUTPUT:

id	person_id	name	membership_start_date	membership_status	membership_id	check_in_date	check
48Z7A	28819	Joe Germuska	20160305	gold	48Z7A	20180109	1600
48Z55	67318	Jeremy Bowers	20160101	gold	48Z55	20180109	1530

STEP 8: We get two suspects from which we can be only sure of one by comparing their license plate number with that of what the witnesses have observed.

```
8. SELECT *
FROM person P
LEFT JOIN drivers_license D ON P.license_id= D.id
WHERE plate_number LIKE '%H42W%'
```

OUTPUT:

id	name	license_id	address_number	address_street_name	ssn	id	age	height	eye_color	hair_co
51739	Tushar Chandra	664760	312	Phi St	137882671	664760	21	71	black	black
67318	Jeremy Bowers	423327	530	Washington Pl, Apt 3A	871539279	423327	30	70	brown	brown
78193	Maxine Whitely	183779	110	Fisk Rd	137882671	183779	21	65	blue	blonde

*On comparing the above two tables of suspects we find a common name “Jeremy Bowers” with id number 67318

However, when we enter the name into the solution checker, we see that he is not the real murderer.

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.

STEP 9: So, now we look into what Jeremy Bowers with id number 67318 has to say about the murder when he was being held the prime suspect.

```
9.  SELECT *
    FROM interview
    WHERE person_id=='67318'
```

OUTPUT:

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.

STEP 10: With the details given by the prime suspect we now try finding the actual murderer.

```
10.  SELECT *
    FROM facebook_event_checkin F
    LEFT JOIN person P
    ON P.id=F.person_id
    LEFT join drivers_license D
    ON P.license_id=D.id
    WHERE D.hair_color=='red' AND D.car_make=='Tesla' AND F.event_name=='SQL Symphony Concert'
```

OUTPUT:

	person_id	event_id	event_name	date	id	name	license_id	address_number	address_street_name	ssn	id	age		
	height	eye_color	hair_color	gender	plate_number	car_make	car_model							
99716	1143	SQL Symphony Concert	20171206	99716	Miranda Priestly	202298	1883	Golden Ave	987756388	202298	68	66	green	red
	female	500123	Tesla	Model S										
99716	1143	SQL Symphony Concert	20171212	99716	Miranda Priestly	202298	1883	Golden Ave	987756388	202298	68	66	green	red
	female	500123	Tesla	Model S										
99716	1143	SQL Symphony Concert	20171229	99716	Miranda Priestly	202298	1883	Golden Ave	987756388	202298	68	66	green	red
	female	500123	Tesla	Model S										

Now with all the given hints, we finally sort it down to one person “Miranda Priestly” and check if she is the real murderer.

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!

WE, HENCE HAVE FINALLY SOLVED THE MURDER MYSTERY!!!

