

R PROGRAMMING

ASSIGNMENT - 1

SOLUTION OF MURDER MYSTERY USING SQL

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Date of Submission
29/03/2023



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MA APPLIED ECONOMICS

DEPARTMENT OF ECONOMICS
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MARCH 2023

SOLUTION PROCESS

1) QUERY :

```
SELECT description
FROM crime_scene_report
WHERE date = '20180115' AND city = 'SQL City' AND type = 'murder'
```

RESULT :

description
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".

2) QUERY :

```
SELECT *
FROM person
WHERE name LIKE 'Annabel%' AND address_street_name = 'Franklin Ave'
```

RESULT :

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

Thus Annabel's id is **16371**.

3) QUERY :

```
SELECT *
FROM person
WHERE address_street_name = 'Northwestern Dr'
Order by address_number DESC
```

RESULT

Run ?

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

id	name	license_id	address_number	address_street_name	ssn
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

id	name	license_id	address_number	address_street_name	ssn
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

Hence the second witness is Morty Schapiro, whose id is **14887**.

4) QUERY :

SELECT transcript

FROM interview

WHERE person_id = '16371'

RESULT :**transcript**

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

5) QUERY :

SELECT transcript

FROM interview

WHERE person_id = '14887'

RESULT :**transcript**

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".

6) QUERY :

SELECT membership_id

FROM get_fit_now_check_in

WHERE membership_id LIKE '48Z%' AND check_in_date = '20180109'

RESULT :**membership_id**

48Z7A

48Z55

7) QUERY :

SELECT *

FROM get_fit_now_member m

JOIN get_fit_now_check_in

ON m.id = membership_id

WHERE check_in_date = '20180109' AND membership_status = 'gold' AND membership_id LIKE '48Z%'

RESULT :

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

8) QUERY :

SELECT p.name, d.plate_number

FROM person AS p

JOIN drivers_license AS d

ON p.license_id = d.id

WHERE p.name = 'Joe Germuska' OR p.name = 'Jeremy Bowers'

RESULT :

name	plate_number
Jeremy Bowers	0H42W2

Hence the killer is Jeremy Bowers.

Now, let's interview him. we know that Jeremy Bowers' person_id: 67318.

9) QUERY :

SELECT transcript

FROM interview

WHERE person_id = '67318'

RESULT :

transcript
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.

10) QUERY :

SELECT *, d.height, d.hair_color, d.car_model, d.gender

FROM drivers_license as d

WHERE gender = 'female' AND height BETWEEN 65 AND 67 AND d.hair_color = 'red' AND car_make = 'Tesla'

RESULT :

id	age	height	eye_color	hair_color	gender	plate_number	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

11) QUERY :

SELECT p.name, d.gender, d.height, d.hair_color, d.car_make, d.car_model

FROM drivers_license as d

JOIN person as p

ON d.id = p.license_id

WHERE gender = 'female' AND d.height BETWEEN 65 AND 67 AND d.hair_color = 'red' AND car_make = 'Tesla' AND car_model = 'Model S'

RESULT :

name	gender	height	hair_color	car_make	car_model
Red Korb	female	65	red	Tesla	Model S
Regina George	female	66	red	Tesla	Model S
Miranda Priestly	female	66	red	Tesla	Model S

12) QUERY :

SELECT *

FROM drivers_license

JOIN person ON drivers_license.id = person.license_id

WHERE car_make = 'Tesla' AND car_model = 'Model S' AND gender = 'female' AND hair_color = 'red'

RESULT :

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

13) QUERY :

SELECT * FROM facebook_event_checkin WHERE person_id IN (78881,90700,99716)

RESULT :

person_id	event_id	event_name	date
99716	1143	SQL Symphony Concert	20171206
99716	1143	SQL Symphony Concert	20171212
99716	1143	SQL Symphony Concert	20171229

14) QUERY :

SELECT *

FROM facebook_event_checkin

JOIN person on facebook_event_checkin.person_id = person.id

WHERE person_id IN (78881,90700,99716)

RESULT :

person_id	event_id	event_name	date	id	name	license_id
99716	1143	SQL Symphony Concert	20171206	99716	Miranda Priestly	202298
99716	1143	SQL Symphony Concert	20171212	99716	Miranda Priestly	202298
99716	1143	SQL Symphony Concert	20171229	99716	Miranda Priestly	202298

Hence Miranda Priestly is the mastermind of the crime.