Paulson Renny
Reg No:2237016
2 MA Applied Economics

Date of Submission
29/03/20223



MA APPLIED ECONOMICS

DEPARTMENT OF ECONOMICS
CHRIST (DEEMED TO BE UNIVERSITY)
MARCH 2023

## SOLUTION:

We have information regarding the date of the crime, city and type of the crime.

From Crime scene report table we get information regarding the murder that occurred.

Query:

```sql
1  select *
2  from
3  crime_scene_report
4  where
5  date=20180115
6  and type= "murder"
7  and city="SQL City"
8
9
10
11
12
13
```

| 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 |

We know that there are two witnesses and the first witness lives at the last house on Northwestern Dr" and the second witness, named Annabel lives somewhere on Franklin Ave.

Query:

```sql
1  select *
2  from
3  person
4  where address_street_name
5  like "Franklin ave%"
6  and name
7  like "Annabel%"
8
9
10
11
12
13
```

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

Query:

```
 1 select *
 2 from
 3 person
 4 where address_street_name= "Northwestern Dr"
 5 order by
 6 address_number desc
 7
 8
 9
10
11
12
```

| 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 |

As the witness lives in the last house of Northwestern street we take the first row of the table, as the table is in descending order. Thus we find out about the two witnesses and they are Annabel Miller and Morty Schapiro.

Query:

```
1 select *
2 from
3 interview
4 where person_id=16371
5
6
7
8
9
```

We obtain data from interview table and the interview of Annabel Miller is as follows:

| 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. |

```
1 select *
2 from
3 interview
4 where person_id=14887
5
6
7
8
9
10
```

Interview of Morty Schapiro is as follows:

| 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". |

From the information obtained from the witnesses' interviews, we can find out the murderer or suspects.

Query:

```
1 select *
2 from get_fit_now_check_in
3 join get_fit_now_member
4 on get_fit_now_check_in.membership_id=get_fit_now_member.id
5 where membership_id
6 like "48Z%"
7 and check_in_date=20180109
8
9
10
11
12
13
```

| membership_id | check_in_date | check_in_time | check_out_time | id | person_id | name | memb |
|---|---|---|---|---|---|---|---|
| 48Z7A | 20180109 | 1600 | 1730 | 48Z7A | 28819 | Joe Germuska | 201603 |
| 48Z55 | 20180109 | 1530 | 1700 | 48Z55 | 67318 | Jeremy Bowers | 201601 |

Query:

```
1 select p.name,d.plate_number
2 from person AS p
3 join drivers_license AS d
4 on p.license_id=d.id
5 where p.name='Joe Germuska' or p.name='Jeremy Bowers'
6
7
8
9
10
```

| name | plate_number |
|---|---|
| Jeremy Bowers | 0H42W2 |

We get that the killer is Jeremy Bowers.

Query:

```
1 select transcript
2 from interview
3 where person_id='67318'
4
5
6
7
8
```

The interview of Jeremy is as follows:

| 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. |

Query:

```
1 select *, d.height,d.hair_color,d.car_model,d.gender
2 from drivers_license as d
3 where gender='female' and height between 65 and 67
4 and d.hair_color='red' and car_make='Tesla'
5
6
7
8
```

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

Query:

```sql
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'
```

| 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 |

Query:

```sql
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'
```

| id | age | height | eye_color | hair_color | gender | plate_number | car_make | car_model | id | nar |
|---|---|---|---|---|---|---|---|---|---|---|
| 918773 | 48 | 65 | black | red | female | 917UU3 | Tesla | Model S | 78881 | R K |
| 291182 | 65 | 66 | blue | red | female | 08CM64 | Tesla | Model S | 90700 | R G |
| 202298 | 68 | 66 | green | red | female | 500123 | Tesla | Model S | 99716 | M P |

Query:

```
1 select *
2 from facebook_event_checkin
3 where person_id in (78881,90700,99716)
4
5
```

| 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 |

Query:

```
1 select *
2 from facebook_event_checkin
3 join person on facebook_event_checkin.person_id=person.id
4 where person_id in (78881,90700,99716)
```

| person_id | event_id | event_name | date | id | name | license_id | address_number | address_s |
|---|---|---|---|---|---|---|---|---|
| 99716 | 1143 | SQL Symphony Concert | 20171206 | 99716 | Miranda Priestly | 202298 | 1883 | Golden Av |
| 99716 | 1143 | SQL Symphony Concert | 20171212 | 99716 | Miranda Priestly | 202298 | 1883 | Golden Av |
| 99716 | 1143 | SQL Symphony Concert | 20171229 | 99716 | Miranda Priestly | 202298 | 1883 | Golden Av |

We can find out on basis of Jeremy's interview, that Miranda Priestly was the woman who hired him to commit the crime and therefore Miranda Priestly is the mastermind of the crime.