Coding Challenge - 3 : Crime Management

Task:

1.

```sql
-- Select all open incidents.
select *
from crime
where c_status = 'Open';
```

CrimeID	IncidentType	IncidentDate	Location	C_Description	C_Status
1	Robbery	2023-09-15	123 Main St, Cityville	Armed robbery at a convenience store	Open
5	Assault	2023-09-08	202 Maple St, Suburbia	Assault reported in a parking lot	Open
NULL	NULL	NULL	NULL	NULL	NULL

2.

```sql
-- Find the total number of incidents.
select count(*) as `Total Number of Incidents`
from crime;
```

Total Number of Incidents
6

3.

```sql
-- List all unique incident types.
select IncidentType, count(incidentType)
from crime
group by incidentType
having count(incidentType) = 1;
```

IncidentType	count(incidentType)
Homicide	1
Theft	1

4.

```sql
-- Retrieve incidents that occurred between '2023-09-01' and '2023-09-10'.
select *
from crime
where IncidentDate between '2023-09-01' and '2023-09-10';
```

CrimeID	IncidentType	IncidentDate	Location	C_Description	C_Status
3	Theft	2023-09-10	789 Oak St, Villagetown	Shoplifting incident at a mall	Closed
4	Assault	2023-09-05	101 Pine St, Hamletville	Physical assault at a bar	Under Investigation
5	Assault	2023-09-08	202 Maple St, Suburbia	Assault reported in a parking lot	Open
6	Robbery	2023-09-02	303 Birch St, Riverside	Robbery at a public event	Closed
NULL	NULL	NULL	NULL	NULL	NULL

5.

```sql
-- List persons involved in incidents in descending order of age.
With cte as (
        select v_name, age from victim
        union
        select s_name, age from suspect)
select *
from cte
where age is not null
order by age desc;
```

v_name	age
Jane Smith	42
Sophia Williams	40
Bob Johnson	35
Lindsay Adams	35
Eva Rodriguez	30
Michael Davis	29
John Doe	28
Raul Martinez	28
Jake Miller	27
Marcus Turner	25
Alice Turner	22

6.

```sql
-- Find the average age of persons involved in incidents.
With cte as (
        select age from victim
        union
        select age from suspect)
select avg(age) as `Average Age`
from cte
where age is not null;
```

	Average Age
▶	30.8889

7.

```sql
-- List incident types and their counts, only for open cases.
select IncidentType, count(IncidentType)
from crime
where c_status = 'Open'
group by IncidentType;
```

	IncidentType	count(IncidentType)
▶	Robbery	1
	Assault	1

8.

```sql
-- Find persons with names containing 'Doe'.
With cte as (select v_name as `Name` from victim
             Union all
             select s_name as `Name` from suspect)
select *
from cte
where `Name` like '%Doe%';
```

	Name
▶	John Doe

9.

```sql
-- Retrieve the names of persons involved in open cases and closed cases.
select c.crimeID, v_name as `Victim Name`, s_name as `Suspect Name`, c.C_Status as `Status`
from crime c
join victim v on c.crimeID = v.crimeID
join suspect s on s.crimeID = v.crimeID
where c.c_status = 'Open' or c.c_status = 'Closed';
```

	crimeID	Victim Name	Suspect Name	Status
▶	1	John Doe	Unknown	Open
	3	Bob Johnson	Alice Turner	Closed
	5	Marcus Turner	Lindsay Adams	Open
	6	Sophia Williams	Jake Miller	Closed

10.

```sql
-- List incident types where there are persons aged 30 or 35 involved.
select c.IncidentType
from crime c
left join victim v on c.crimeID = v.crimeId
left join suspect s on s.crimeId = v.crimeID
where s.age in (30, 35) or v.age in (30, 35);
```

	IncidentType
▶	Theft
	Assault
	Assault

11.

```sql
-- Find persons involved in incidents of the same type as 'Robbery'.
select v.v_name as `Victim Name`, s.s_name as `Suspect Name`
from crime c
join victim v on c.crimeID = v.crimeId
join suspect s on s.crimeId = v.crimeID
where c.IncidentType = 'Robbery';
```

	Victim Name	Suspect Name
▶	John Doe	Unknown
	Sophia Williams	Jake Miller

12.

```sql
-- List incident types with more than one open case.
select IncidentType, count(C_Status)
from crime
where C_Status = 'Open'
group by IncidentType
having count(c_status)>1;
```

13.

```sql
-- List all incidents with suspects whose names also appear as victims in other incidents.
select c.*
from crime c
join victim v on c.crimeID = v.crimeID
join suspect s on v.crimeID = s.crimeID
where v.v_name = s.s_name and (s.s_name is not null or s.s_name <> 'Unknown');
```

14.

```sql
-- Retrieve all incidents along with victim and suspect details.
select *
from crime c
join victim v on c.crimeID = v.crimeID
join suspect s on v.crimeID = s.crimeID;
```

CrimeID	IncidentType	IncidentDate	Location	C_Description	C_Status	VictimID	CrimeID	V_Name	ContactInfo	Injuries	Age	SuspectID	CrimeI
1	Robbery	2023-09-15	123 Main St, Cityville	Armed robbery at a convenience store	Open	1	1	John Doe	555-1234	Gunshot wound	28	1	1
2	Homicide	2023-09-20	456 Elm St, Townsville	Investigation into a murder case	Under Investigation	2	2	Jane Smith	555-5678	Stabbed multiple times	42	2	2
3	Theft	2023-09-10	789 Oak St, Villagetown	Shoplifting incident at a mall	Closed	3	3	Bob Johnson	555-9876	None	35	3	3
4	Assault	2023-09-05	101 Pine St, Hamletville	Physical assault at a bar	Under Investigation	4	4	Eva Rodriguez	555-1111	Bruises and cuts	30	4	4
5	Assault	2023-09-08	202 Maple St, Suburbia	Assault reported in a parking lot	Open	5	5	Marcus Turner	555-2222	Concussion and broken nose	25	5	5
6	Robbery	2023-09-02	303 Birch St, Riverside	Robbery at a public event	Closed	6	6	Sophia Williams	555-3333	Knife Wound on left arm	40	6	6

CrimeID	S_Name	S_Description	CriminalHistory	Age
1	Unknown	Armed individual wearing a mask	No known criminal history	NULL
2	Michael Davis	Neighbor of the victim	Previous assault charges	29
3	Alice Turner	Caught on security camera stealing	Multiple theft convictions	22
4	Raul Martinez	Known troublemaker in the area	Previous assault arrests	28
5	Lindsay Adams	Suspected involvement in local fights	No criminal history	35
6	Jake Miller	Witnesses report involvement in the altercation	Prior arrests for disorderly conduct	27

15.

```sql
-- Find incidents where the suspect is older than any victim.
select c.*
from crime c
join victim v on c.crimeID = v.crimeID
join suspect s on v.crimeID = s.crimeID and s.age > v.age;
```

CrimeID	IncidentType	IncidentDate	Location	C_Description	C_Status
5	Assault	2023-09-08	202 Maple St, Suburbia	Assault reported in a parking lot	Open

16.

```sql
-- Find suspects involved in multiple incidents:
select s.S_Name
from suspect s
where s.s_name is not null or s.s_name <> 'Unknown'
group by s.s_name
having count(s.s_name)>1;
```

17.

```sql
-- List incidents with no suspects involved.
select c.*
from crime c
join suspect s on c.crimeID = s.crimeId
where s.s_name is null;
```

18.

```sql
-- List all cases where at least one incident is of type 'Homicide' and all other incidents are of type 'Robbery'.
select *
from crime
where IncidentType in ('Homicide', 'Robbery');
```

CrimeID	IncidentType	IncidentDate	Location	C_Description	C_Status
1	Robbery	2023-09-15	123 Main St, Cityville	Armed robbery at a convenience store	Open
2	Homicide	2023-09-20	456 Elm St, Townsville	Investigation into a murder case	Under Investigation
6	Robbery	2023-09-02	303 Birch St, Riverside	Robbery at a public event	Closed
NULL	NULL	NULL	NULL	NULL	NULL

19.

```sql
-- Retrieve a list of all incidents and the associated suspects,
-- showing suspects for each incident, or 'No Suspect' if there are none.
select c.*, coalesce(s.s_name, 'No Suspect') as `Suspect Name`
from crime c
left join suspect s on c.crimeId = s.crimeID;
```

CrimeID	IncidentType	IncidentDate	Location	C_Description	C_Status	Suspect Name
1	Robbery	2023-09-15	123 Main St, Cityville	Armed robbery at a convenience store	Open	Unknown
2	Homicide	2023-09-20	456 Elm St, Townsville	Investigation into a murder case	Under Investigation	Michael Davis
3	Theft	2023-09-10	789 Oak St, Villagetown	Shoplifting incident at a mall	Closed	Alice Turner
4	Assault	2023-09-05	101 Pine St, Hamletville	Physical assault at a bar	Under Investigation	Raul Martinez
5	Assault	2023-09-08	202 Maple St, Suburbia	Assault reported in a parking lot	Open	Lindsay Adams
6	Robbery	2023-09-02	303 Birch St, Riverside	Robbery at a public event	Closed	Jake Miller
7	Theft	2023-09-29	231 Elm St, Townsville	Pick Pocketting	Closed	No Suspect

20.

```sql
-- List all suspects who have been involved in incidents with incident types 'Robbery' or 'Assault'
select c.IncidentType, coalesce(s.s_name, 'No Suspect') as `Suspect Name`
from crime c
left join suspect s on c.crimeId = s.crimeID
where c.IncidentType IN ('Robbery', 'Assault');
```

IncidentType	Suspect Name
Robbery	Unknown
Assault	Raul Martinez
Assault	Lindsay Adams
Robbery	Jake Miller