Coding Challenge:- Crime Management

```sql
--Q.1 Select all open incidents.
SELECT * FROM Crime
WHERE Status = 'Open';
```

100 %

Results | Messages

	CrimeID	IncidentType	IncidentDate	Location	Description	Status
1	1	Robbery	2023-09-15	123 Main St, Cityville	Armed robbery at a convenience store	Open

```sql
--Q.2 Find the total number of incidents.
Select COUNT(crimeid) as total_incidents
from crime;
```

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Results | Messages

	total_incidents
1	3

```sql
--Q.3 List all unique incident types.
select distinct incidenttype
from crime;
```

100 %

Results | Messages

	incidenttype
1	Homicide
2	Robbery
3	Theft

```sql
--Q.4 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';
```

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Results | Messages

	CrimeID	IncidentType	IncidentDate	Location	Description	Status
1	3	Theft	2023-09-10	789 Oak St, Villagetown	Shoplifting incident at a mall	Closed

```sql
--Q.5 List persons involved in incidents in descending order of age.
alter table Victim add Age int;
alter table Suspect add Age int;

update Victim set Age = 25 where VictimID = 1;
update Victim set Age = 55 where VictimID = 2;
update Victim set Age = 30 where VictimID = 3;

update Suspect set Age = 30 where SuspectID = 1;
update Suspect set Age = 28 where SuspectID = 2;
update Suspect set Age = 35 where SuspectID = 3;

select Name, Age, 'Victim' as Role from Victim
union all
select Name, Age, 'Suspect' as Role from Suspect
order by Age desc;
```

100 %

Results | Messages

	Name	Age	Role
1	Jane Smith	55	Victim
2	Suspect 1	35	Suspect
3	Alice Johnson	30	Victim
4	Robber 1	30	Suspect
5	Unknown	28	Suspect
6	John Doe	25	Victim

```sql
--Q.6 Find the average age of persons involved in incidents.
select avg(Age) as Avereage_Age
from( select Age from Victim
      union all
      select Age from Suspect) as All_Persons;
```

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Results | Messages

	Avereage_Age
1	33

```sql
--Q.7 List incident types and their counts, only for open cases.
select IncidentType, count(*) as Incident_Count from Crime
where Status = 'Open' group by IncidentType;
```

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Results | Messages

	IncidentType	Incident_Count
1	Robbery	1

```sql
--Q.8 Find persons with names containing 'Doe'.
select Name from Victim where name like '%Doe%'
union all
select Name from Suspect where Name like '%Doe%';
```

Results | Messages

	Name
1	John Doe

```sql
--Q.9 Retrieve the names of persons involved in open cases and closed cases.
select v.Name, c.Status from Victim v
join Crime c on v.CrimeID = c.CrimeID
where c.Status in ('Open', 'Closed')
union all
select s.Name, c.Status from Suspect s
join Crime c on s.CrimeID = c.CrimeID
where c.status in ('Open', 'Closed');
```

Results | Messages

	Name	Status
1	John Doe	Open
2	Alice Johnson	Closed
3	Robber 1	Open
4	Suspect 1	Closed

```sql
--Q.10 List incident types where there are persons aged 30 or 35 involved.
select distinct c.IncidentType from Crime c
join Victim v on c.CrimeID = v.CrimeID
where v.Age in (30,35)
union
select distinct c.IncidentType from Crime c
join Suspect s on c.CrimeID = s.CrimeID
where s.Age in (30,35);
```

Results | Messages

	IncidentType
1	Robbery
2	Theft

```sql
--Q.11 Find persons involved in incidents of the same type as 'Robbery'.
select v.Name  as Victime, s.name as Suspect from crime c
left join Victim v on c.CrimeID = v.CrimeID
left join Suspect s on c.CrimeID = s.CrimeID
where c.IncidentType = 'Robbery';
```

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Results   Messages

	Victime	Suspect
1	John Doe	Robber 1

```sql
--Q.12 List incident types with more than one open case.
select IncidentType, count(*) as Open_Case_Count from Crime
where Status = 'Open' group by IncidentType having count(*) > 1;

--There is no more than 1 open incident
```

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Results   Messages

IncidentType	Open_Case_Count

```sql
--Q.13 List all incidents with suspects whose names also appear as victims in other incidents.
select c.* from Crime c
join Suspect s on c.CrimeID =s.CrimeID
where s.Name in (select v.Name from Victim v);

--There is no suspect whose name also appear as victim
```

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Results   Messages

CrimeID	IncidentType	IncidentDate	Location	Description	Status

```sql
--Q.14 Retrieve all incidents along with victim and suspect details.
select c.*,
    v.Name AS Victim_Name,
    s.Name AS Suspect_Name
    from Crime c
    left join Victim v on c.CrimeID = v.CrimeID
    left join Suspect s on c.CrimeID = s.CrimeID;
```

	CrimeID	IncidentType	IncidentDate	Location	Description	Status	Victim_Name	Suspect_Name
1	1	Robbery	2023-09-15	123 Main St, Cityville	Armed robbery at a convenience store	Open	John Doe	Robber 1
2	2	Homicide	2023-09-20	456 Elm St, Townsville	Investigation into a murder case	Under Investigation	Jane Smith	Unknown
3	3	Theft	2023-09-10	789 Oak St, Villagetown	Shoplifting incident at a mall	Closed	Alice Johnson	Suspect 1

```sql
--Q.15  Find incidents where the suspect is older than any victim.
select c.* from Crime c
join Suspect s on c.CrimeID = s.CrimeID
where s.Age > (select max(v.age) from Victim v);

--There is no suspect older than any victim.
```

	CrimeID	IncidentType	IncidentDate	Location	Description	Status

```sql
--Q.16 Find suspects involved in multiple incidents:
select s.SuspectID, s.Name, count(s.CrimeID) as Incident_count from Suspect s
group by s.SuspectID, s.Name having count(s.CrimeID) > 1;

--There is no suspect involved in multiple incidents
```

	SuspectID	Name	Incident_count

```sql
--Q.17 List incidents with no suspects involved.
select c.* from Crime c
left join Suspect s on c.CrimeID = s.CrimeID
where s.SuspectID is null;

--There is no incident with no suspects involved.
```

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Results | Messages

CrimeID	IncidentType	IncidentDate	Location	Description	Status

```sql
--Q.18  List all cases where at least one incident is of type 'Homicide' and all other incidents are of type 'Robbery'.
select distinct c1.CrimeID, c1.IncidentType , c1.IncidentDate, c1.Location, c1.Status from Crime c1
where c1.IncidentType = 'Homicide'
or c1.CrimeID in(select c2.CrimeID from Crime c2
where c2.IncidentType = 'Robbery');
```

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Results | Messages

	CrimeID	IncidentType	IncidentDate	Location	Status
1	1	Robbery	2023-09-15	123 Main St, Cityville	Open
2	2	Homicide	2023-09-20	456 Elm St, Townsville	Under Investigation

```sql
--Q.19 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.name, 'No Suspect') as SuspectName from crime c
left join Suspect s on c.CrimeID = s.CrimeID;
```

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Results | Messages

	CrimeID	IncidentType	IncidentDate	Location	Description	Status	SuspectName
1	1	Robbery	2023-09-15	123 Main St, Cityville	Armed robbery at a convenience store	Open	Robber 1
2	2	Homicide	2023-09-20	456 Elm St, Townsville	Investigation into a murder case	Under Investigation	Unknown
3	3	Theft	2023-09-10	789 Oak St, Villagetown	Shoplifting incident at a mall	Closed	Suspect 1

```sql
--Q.20 List all suspects who have been involved in incidents with incident types 'Robbery' or 'Assault
select distinct s.Name from Suspect s
join Crime c on s.CrimeID = c.CrimeID
where c.IncidentType in ('Robbery','Assault');
```

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Results | Messages

Name
Robber 1