Coding challenge Crime Management System

• Database creation

```
create TABLE Crime (
  CrimeID INT PRIMARY KEY,
  IncidentType VARCHAR(255),
  IncidentDate DATE,
  Location VARCHAR(255),
  Description TEXT,
  Status VARCHAR(20)
);
CREATE TABLE Victim (
 VictimID INT PRIMARY KEY,
  CrimeID INT,
  Name VARCHAR(255),
  ContactInfo VARCHAR(255),
  Injuries VARCHAR(255),
  FOREIGN KEY (CrimeID) REFERENCES Crime(CrimeID)
);
CREATE TABLE Suspect (
  SuspectID INT PRIMARY KEY,
  CrimeID INT,
  Name VARCHAR(255),
  Description TEXT,
  CriminalHistory TEXT,
  FOREIGN KEY (CrimeID) REFERENCES Crime(CrimeID)
);
```

Inserting data

INSERT INTO Crime (CrimeID, IncidentType, IncidentDate, Location, Description, Status) VALUES

- (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'),
```

(3, 'Theft', '2023-09-10', '789 Oak St, Villagetown', 'Shoplifting incident at a mall', 'Closed');

INSERT INTO Victim (VictimID, CrimeID, Name, ContactInfo, Injuries) VALUES

- (1, 1, 'John Doe', 'johndoe@example.com', 'Minor injuries'),
- (2, 2, 'Jane Smith', 'janesmith@example.com', 'Deceased'),
- (3, 3, 'Alice Johnson', 'alicejohnson@example.com', 'None');

INSERT INTO Suspect (SuspectID, CrimeID, Name, Description, CriminalHistory) VALUES

- (1, 1, 'Robber 1', 'Armed and masked robber', 'Previous robbery convictions'),
- (2, 2, 'Unknown', 'Investigation ongoing', NULL),
- (3, 3, 'Suspect 1', 'Shoplifting suspect', 'Prior shoplifting arrests');

alter table victim add column age int; alter table suspect add column age int;

update victim set age = 30 where victimid =1;

update victim set age = 28 where victimid =2;

update victim set age = 22 where victimid =3;

update suspect set age = 26 where suspectid =1;

update suspect set age = 35 where suspectid =2;

update suspect set age = 24 where suspectid =3;

-- 1.Select all open incidents.

select * from crime where status = 'Open';

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

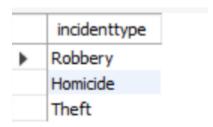
-- 2.Find the total number of incidents. select count(crimeid) as total_incidents from crime;

Output:

total_incidents
3

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

Output:



-- 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';

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

```
-- 5.List persons involved in incidents in descending order of age.
select name,age,'victim' as role from victim
union
select name,age,'suspect' as role from suspect
order by age desc;
```

	name	age	role
•	Unknown	35	suspect
	John Doe	30	victim
	Jane Smith	28	victim
	Robber 1	26	suspect
	Suspect 1	24	suspect
	Alice Johnson	22	victim

```
-- 6.Find the average age of persons involved in incidents.

select avg(age) as Avgage

from(

select age from victim

union all

select age from suspect)

as avgallperson;
```

	Avgage
•	27.5000

```
-- 7. List incident types and their counts, only for open cases.
select incidenttype,count(incidenttype) as totalopencases
from crime
where status = 'open'
group by incidenttype
```

	incidenttype	totalopencases
•	Robbery	1

```
-- 8.Find persons with names containing 'Doe'.

select name

from(
    select name from victim
    union
    select name from suspect) as namedoe
    where name like '%doe%'
```



```
-- 9.Retrieve the names of persons involved in open cases and closed cases.

select v.name,c.status

from victim v,crime c

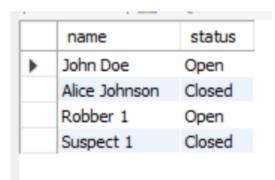
where v.crimeid=c.crimeid and c.status in ('open','closed')

union

select s.name,c.status

from suspect s,crime c

where s.crimeid=c.crimeid and c.status in ('open','closed');
```



```
-- 11.Find persons involved in incidents of the same type as 'Robbery'.

select v.name,incidenttype,'victim'as role from crime c

join victim v on c.crimeid = v.crimeid

where incidenttype = 'robbery'

union

select s.name,incidenttype,'suspect'as role from crime c

join suspect s on c.crimeid = s.crimeid

where incidenttype = 'robbery';
```

	name	incidenttype	role	
•	John Doe	Robbery	victim	
	Robber 1	Robbery	suspect	

```
-- 12.List incident types with more than one open case.

select incidenttype,count(*) as totalopencases

from crime

where status ='open'

group by incidenttype

having totalopencases > 1

/* their is no incident types with more than one open case in the given data thus we have a empty output*/
```



265 20:03:02 select incidenttype,count(") as totalopencases from crime where status ='open' gro... 0 row(s) returned

```
/*13.List all incidents with suspects whose names also appear
as victims in other incidents*/
select c.*
from crime c,suspect s
where c.crimeid=s.crimeid and s.name in (select name from victim);
-- or
select *
from crime c
join suspect s on c.crimeid=s.crimeid where s.name in (select name from victim);
-- no suspect name appears as victim in other incidents
```

Output:



267 20:09:35 select * from crime c join suspect s on c.crimeid=s.crimeid where s.name in (select n... 0 row(s) returned

```
-- 14.Retrieve all incidents along with victim and suspect details.
select c.*, v.Name as Victim , v.Age , v.Injuries,
s.Name as Suspect , s.Age , s.CriminalHistory
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	Age	Injuries	Suspect	Age	CriminalHistory
•	1	Robbery	2023-09-15	123 Main St, Cityville	Armed robbery at a convenience store	Open	John Doe	30	Minor injuries	Robber 1	26	Previous robbery convictions
	2	Homicide	2023-09-20	456 Elm St, Townsville	Investigation into a murder case	Under Inve	Jane Smith	28	Deceased	Unknown	35	NULL
	3	Theft	2023-09-10	789 Oak St, Villagetown	Shoplifting incident at a mall	Closed	Alice Johnson	22	None	Suspect 1		Prior shoplifting arrests
-												

```
-- 15.Find incidents where the suspect is older than any victim.

select * from crime c

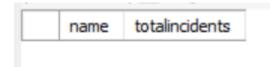
join suspect s on c.crimeid=s.crimeid

where s.age>(select v.age from victim v

where c.crimeid=v.crimeid);
```

P 2 Homidde 2023-09-20 436 Elm St, Townsville Investigation into a murder case Under Inve 2 2	b 2 Homicide 2023-09-20 456 Elm St, Townsville Investigation into a murder case Under Inve 2 2 Unknown Investigation ongoing 35 35 3 Theft 2023-09-10 789 Oak St, Villagetown Shoplifting incident at a mail Closed 3 3 Suspect 1 Shoplifting suspect Prior shoplifting arrests 24) 2						SuspectID	CrimeID				age
5 There 2023-09-10 709 Oak St, Villagetown Shopinting inductivat a mail Closed 5	3 There 2023-09-10 769 Oak St, Villagetowin Shopinung inductivat a mail Closed 5			2023-09-20	456 Elm St, Townsville	Investigation into a murder case	Under Inve	2	2	Unknown	Investigation ongoing	NULL	35
Suspect 1	Suspect 1	3	Theft	2023-09-10	789 Oak St, Villagetown	Shoplifting incident at a mall	Closed	3	3	Suspect 1	Shoplifting suspect	Prior shoplifting arrests	24
										Suspect	1		

```
-- 16.Find suspects involved in multiple incidents:
select name ,count(*) as totalincidents
from suspect
group by name
having totalincidents > 1;
-- no suspect is involved in multiple incidents
```



270 20:19:00 select name ,count(*) as totalincidents from suspect group by name having totalinci... 0 row(s) returned

```
-- 17.List incidents with no suspects involved.

select c.* from crime c

left join suspect s on c.crimeid=s.crimeid

where s.crimeid is null

-- every incident has a suspect even the homicide has a suspect with age and description
```

Output:



272 20:22:16 select c.* from crime c left join suspect s on c.crimeid=s.crimeid where s.crimeid is n... 0 row(s) returned

```
/*18.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')
and exists (
select crimeid from crime
where incidenttype = 'homicide')
and not exists (
select crimeid from crime
where incidenttype not in ('homicide','robbery'));
```

CrimeID	IncidentType	IncidentDate	Location	Description	Status
NULL	NULL	NULL	NULL	NULL	NULL

```
/*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.crimeid, c.incidenttype, ifnull(s.name, 'no suspect') as suspectname
from crime c
left join suspect s on c.crimeid = s.crimeid;
```

	crimeid	incidenttype	suspectname
•	1	Robbery	Robber 1
	2	Homicide	Unknown
	3	Theft	Suspect 1

```
-- 20.List all suspects who have been involved in incidents with incident types 'Robbery' or 'Assault' select s.name,c.incidenttype from suspect s join crime c on c.crimeid=s.crimeid where incidenttype in ('Robbery','Assault');
```

