CODING CHALLENGE-CRIME MANAGEMENT

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```sql
create database crime;
use crime;


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),
    Age int,
    FOREIGN KEY (CrimeID) REFERENCES Crime(CrimeID)
);




CREATE TABLE Suspect (
    SuspectID INT PRIMARY KEY,
    CrimeID INT,
    Name VARCHAR(255),
    Description TEXT,
    CriminalHistory TEXT,
    Age int,
    FOREIGN KEY (CrimeID) REFERENCES Crime(CrimeID)
);
```

-- Inserting Sample 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'),

        (4, 'chain snatching', '2023-09-20', '329 Msple St, Citypark', 'Physical violence at the parking lot', 'Open'),

        (5, 'Robbery', '2023-09-30', '12 church St, Townsville', 'Robbery at a bank', 'Closed');

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

    (1, 1, 'John Doe', 'johndoe@example.com', 'Minor injuries',30),

    (2, 2, 'Jane Smith', 'janesmith@example.com', 'Deceased',35),

    (3, 3, 'Alice Johnson', 'alicejohnson@example.com', 'None',28),

    (4, 1, 'David Lee', 'davidlee@example.com', 'Minor injuries',25),

    (5, 2, 'Maria John', 'mariajohn@example.com', 'Several injuries',40);

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

    (1, 1, 'Robber 1', 'Armed and masked robber', 'Previous robbery convictions',38),

    (2, 2, 'Unknown', 'Investigation ongoing', NULL,0),

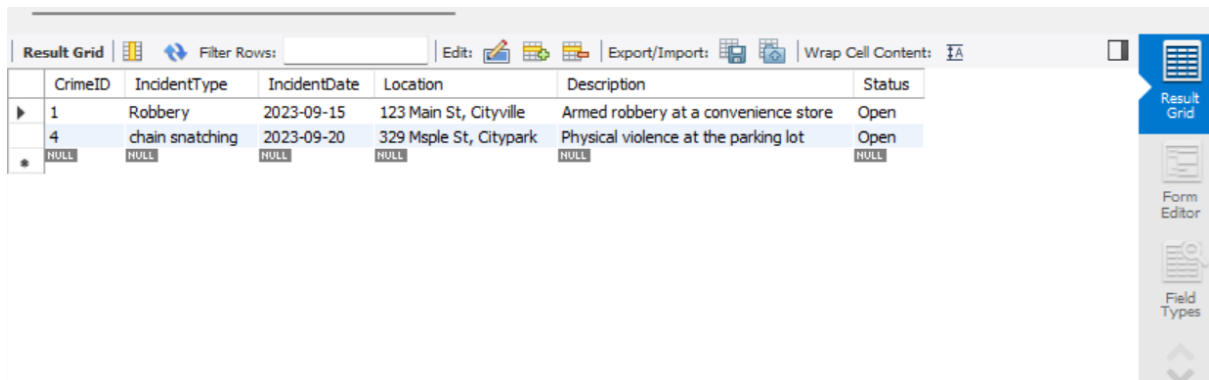   (3, 3, 'Suspect 1', 'Shoplifting suspect', 'Prior shoplifting arrests',25),

    (4, 1, 'Robber 2', 'Armed and masked robber', 'Prior robbery convictions',30),

    (5, 2, 'Unknown', 'Investigation ongoing', NULL,0);

-- 1. Select all open incidents

select * from crime where status='Open';

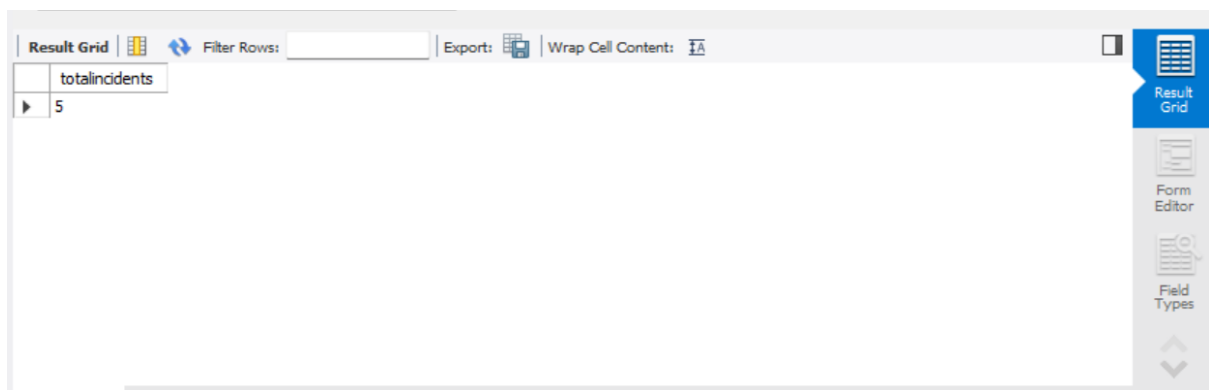|	CrimeID	IncidentType	IncidentDate	Location	Description	Status
▶	1	Robbery	2023-09-15	123 Main St, Cityville	Armed robbery at a convenience store	Open
	4	chain snatching	2023-09-20	329 Msple St, Citypark	Physical violence at the parking lot	Open
*	NULL	NULL	NULL	NULL	NULL	NULL

-- 2. Find the total number of incidents

select count(*) as totalincidents from crime;
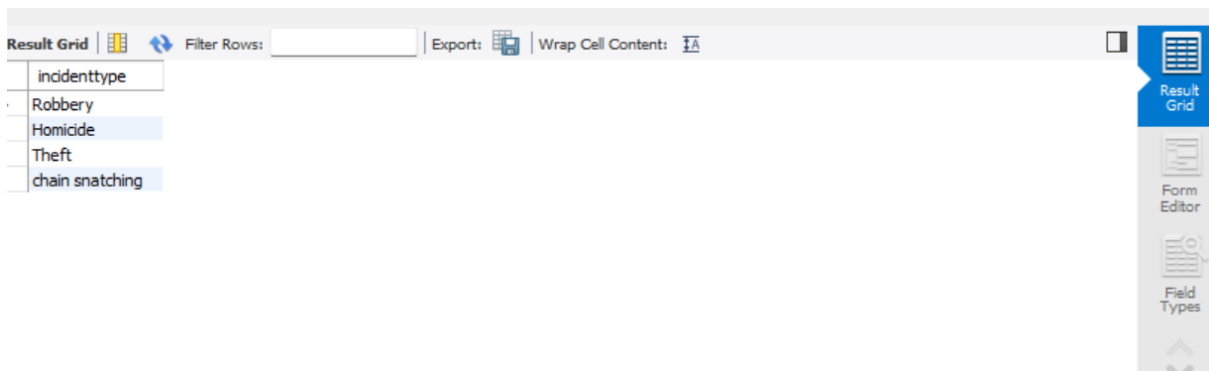
	totalincidents
▶	5

-- 3. List all unique incident types

select distinct incidenttype from crime;
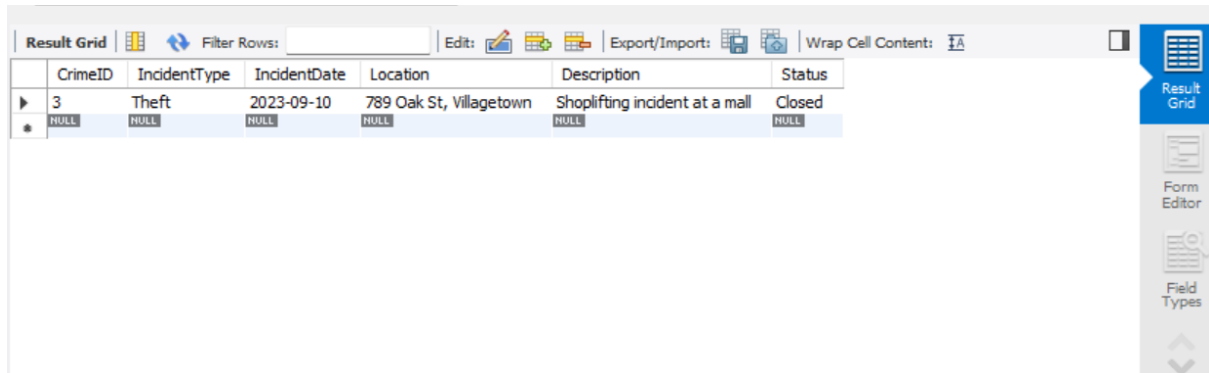
incidenttype
Robbery
Homicide
Theft
chain snatching

-- 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';

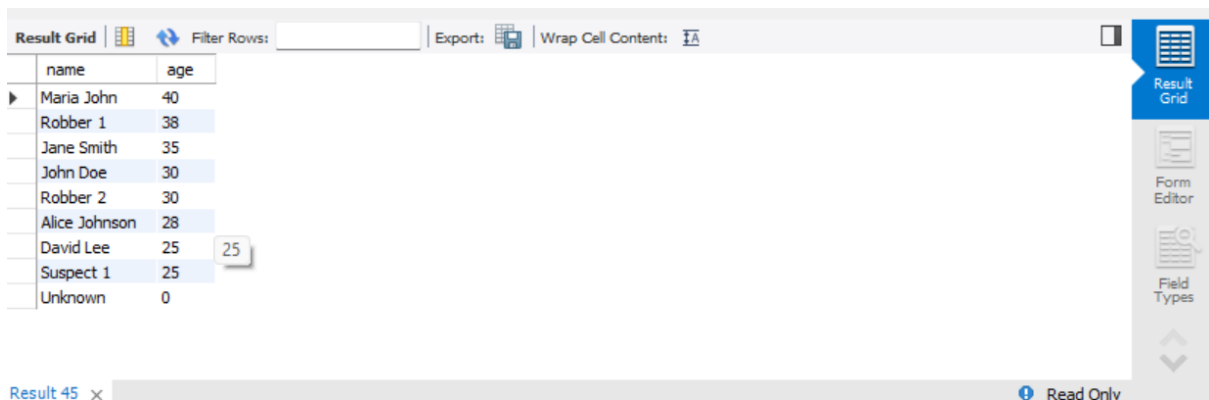|	CrimeID	IncidentType	IncidentDate	Location	Description	Status
▶	3	Theft	2023-09-10	789 Oak St, Villagetown	Shoplifting incident at a mall	Closed
*	NULL	NULL	NULL	NULL	NULL	NULL

-- 5. List persons involved in incidents in descending order of age

select name,age from victim
union
select name,age from suspect
order by age desc;

	name	age
▶	Maria John	40
	Robber 1	38
	Jane Smith	35
	John Doe	30
	Robber 2	30
	Alice Johnson	28
	David Lee	25
	Suspect 1	25
	Unknown	0

Result 45 ×   ❶ Read Only

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

select avg(age) as avgage from

(select age from victim

union

select age from suspect)as person;

-- 7. List incident types and their counts, only for open cases

select incidenttype ,count(*) as incidentcount from crime where status='open'

group by incidenttype;

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

select * from victim where name like '%doe%'

union

select * from suspect 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

join crime c on v.crimeid=c.crimeid

union

```
select s.name ,c.status

from suspect s

join crime c on s.crimeid=c.crimeid;
```

name	status
John Doe	Open
Jane Smith	Under Investigation
Alice Johnson	Closed
David Lee	Open
Maria John	Under Investigation
Robber 1	Open
Unknown	Under Investigation
Suspect 1	Closed
Robber 2	Open

```
-- 10. List incident types where there are persons aged 30 or 35 involved

select c.incidenttype,v.age

from crime c

join victim v on c.crimeid=v.crimeid

where v.age in(30,35)

union

select c.incidenttype,s.age

from crime c

join suspect s on c.crimeid=s.crimeid

where s.age in (30,35);
```

incidenttype	age
Robbery	30
Homicide	35

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

select c.incidenttype,v.age,v.name

from crime c

join victim v on c.crimeid=v.crimeid

where c.incidenttype='robbery'

union

select c.incidenttype,s.age,s.name

from crime c

join suspect s on c.crimeid=s.crimeid

 where c.incidenttype='robbery';

incidenttype	age	name
Robbery	30	John Doe
Robbery	25	David Lee
Robbery	38	Robber 1
Robbery	30	Robber 2

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

SELECT IncidentType

 FROM Crime

 WHERE Status = 'Open'

 GROUP BY IncidentType

HAVING COUNT(*) > 1;

IncidentType

-- 13. List all incidents with suspects whose names also appear as victims in other incidents

Select distinct c.*

from crime c

join suspect s on c.crimeid=s.crimeid

where s.name in(select name from victim);

CrimeID	IncidentType	IncidentDate	Location	Description	Status

-- 14. Retrieve all incidents along with victim and suspect details

SELECT c.*,v.name as victim,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;

CrimeID	IncidentType	IncidentDate	Location	Description	Status	victim
1	Robbery	2023-09-15	123 Main St, Cityville	Armed robbery at a convenience store	Open	John Doe
1	Robbery	2023-09-15	123 Main St, Cityville	Armed robbery at a convenience store	Open	John Doe
1	Robbery	2023-09-15	123 Main St, Cityville	Armed robbery at a convenience store	Open	David Lee
1	Robbery	2023-09-15	123 Main St, Cityville	Armed robbery at a convenience store	Open	David Lee
2	Homicide	2023-09-20	456 Elm St, Townsville	Investigation into a murder case	Under Investigation	Jane Smith
2	Homicide		456 Elm St, Townsville	Investigation into a murder case	Under Investigation	Jane Smith
2	Homicide	2023-09-20	456 Elm St, Townsville	Investigation into a murder case	Under Investigation	Maria John
2	Homicide	2023-09-20	456 Elm St, Townsville	Investigation into a murder case	Under Investigation	Maria John
3	Theft	2023-09-10	789 Oak St, Villagetown	Shoplifting incident at a mall	Closed	Alice Johnsc
4	chain snatching	2023-09-20	329 Msple St, Citypark	Physical violence at the parking lot	Open	NULL
5	Robbery	2023-09-30	12 church St, Townsville	Robbery at a bank	Closed	NULL

entType	IncidentDate	Location	Description	Status	victim	suspect
ry	2023-09-15	123 Main St, Cityville	Armed robbery at a convenience store	Open	John Doe	Robber 1
ry	2023-09-15	123 Main St, Cityville	Armed robbery at a convenience store	Open	John Doe	Robber 2
ry	2023-09-15	123 Main St, Cityville	Armed robbery at a convenience store	Open	David Lee	Robber 1
ry	2023-09-15	123 Main St, Cityville	Armed robbery at a convenience store	Open	David Lee	Robber 2
de	2023-09-20	456 Elm St, Townsville	Investigation into a murder case	Under Investigation	Jane Smith	Unknown
de	2023-09-20	456 Elm St, Townsville	Investigation into a murder case	Under Investigation	Jane Smith	Unknown
de	2023-09-20	456 Elm St, Townsville	Investigation into a murder case	Under Investigation	Maria John	Unknown
de	2023-09-20	456 Elm St, Townsville	Investigation into a murder case	Under Investigation	Maria John	Unknown
	2023-09-10	789 Oak St, Villagetown	Shoplifting incident at a mall	Closed	Alice Johnson	Suspect 1
snatching	2023-09-20	329 Msple St, Citypark	Physical violence at the parking lot	Open	NULL	NULL
ry	2023-09-30	12 church St, Townsville	Robbery at a bank	Closed	NULL	NULL

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

select distinct c.*,s.name

from crime c

join suspect s on c.crimeid=s.crimeid

where s.age > (select max(v.age) from victim v where v.crimeid=c.crimeid);

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

-- 16. Find suspects involved in multiple incidents

SELECT Name, COUNT(*) FROM Suspect

GROUP BY Name

HAVING COUNT(*) > 1;

	Name	COUNT(*)
▶	Unknown	2

-- 17. List incidents with no suspects involved

SELECT * FROM Crime WHERE CrimeID NOT IN (SELECT CrimeID FROM Suspect);

	CrimeID	IncidentType	IncidentDate	Location	Description	Status
▶	4	chain snatching	2023-09-20	329 Msple St, Citypark	Physical violence at the parking lot	Open
	5	Robbery	2023-09-30	12 church St, Townsville	Robbery at a bank	Closed
*	NULL	NULL	NULL	NULL	NULL	NULL

-- 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 = 'Homicide' OR IncidentType = 'Robbery';

-- 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;

CrimeID	IncidentType	IncidentDate	Location	Description	Status	SuspectName
1	Robbery	2023-09-15	123 Main St, Cityville	Armed robbery at a convenience store	Open	Robber 1
1	Robbery	2023-09-15	123 Main St, Cityville	Armed robbery at a convenience store	Open	Robber 2
2	Homicide	2023-09-20	456 Elm St, Townsville	Investigation into a murder case	Under Investigation	Unknown
2	Homicide	2023-09-20	456 Elm St, Townsville	Investigation into a murder case	Under Investigation	Unknown
3	Theft	2023-09-10	789 Oak St, Villagetown	Shoplifting incident at a mall	Closed	Suspect 1
4	chain snatching	2023-09-20	329 Msple St, Citypark	Physical violence at the parking lot	Open	No Suspect
5	Robbery	2023-09-30	12 church St, Townsville	Robbery at a bank	Closed	No Suspect

-- 20. List all suspects who have been involved in incidents with incident types 'Robbery' or 'Assault'

SELECT * FROM Suspect WHERE CrimeID IN (SELECT CrimeID FROM Crime WHERE IncidentType IN ('Robbery', 'Assault'));

SuspectID	CrimeID	Name	Description	CriminalHistory	Age
1	1	Robber 1	Armed and masked robber	Previous robbery convictions	38
4	1	Robber 2	Armed and masked robber	Prior robbery convictions	30
NULL	NULL	NULL	NULL	NULL	NULL