# **SQL Coding Challenge Crime Management**

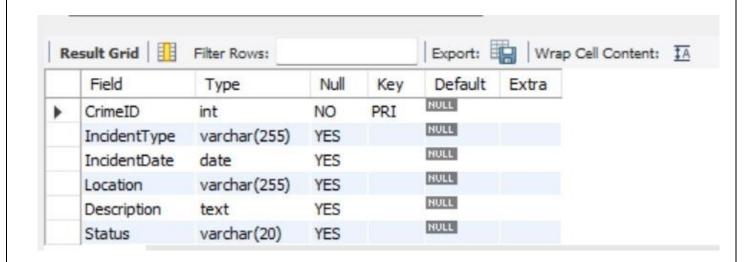
Create database Crime Management

- create database Crime Management;
- use Crime Management;

#### Create tables

## Crime

```
CREATE TABLE Crime (
CrimeID INT PRIMARY KEY,
IncidentType VARCHAR(255),
IncidentDate DATE,
Location VARCHAR(255),
Description TEXT,
Status VARCHAR(20)
);
```



### **Victim**

```
CREATE TABLE Victim (
   VictimID INT PRIMARY KEY,
   CrimeID INT,
   Name VARCHAR(255),
   ContactInfo VARCHAR(255),
   Injuries VARCHAR(255),
   FOREIGN KEY (CrimeID) REFERENCES Crime(CrimeID)
);

alter table Victim add age int;
desc Victim;

update Victim set age='30' WHERE VictimID='1';
update Victim set age='40' WHERE VictimID='2';
update Victim set age='50' WHERE VictimID='2';
select*from Victim;
```

100	esult Grid	Export:   V				
	Field	Туре	Null	Key	Default	Extra
•	VictimID	int	NO	PRI	NULL	
	CrimeID	int	YES	MUL	NULL	
	Name	varchar(255)	YES		NULL	
	ContactInfo	varchar(255)	YES		NULL	
	Injuries	varchar(255)	YES		NULL	
	age	int	YES		NULL	

# **Suspect**

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

alter table Suspect add SAge int;
desc Suspect;
alter table Suspect drop column age;

update Suspect set SAge='60' WHERE SuspectID='1';
update Suspect set SAge='70' WHERE SuspectID='2';
update Suspect set SAge='80' WHERE SuspectID='2';
update Suspect set SAge='80' WHERE SuspectID='3';
```

	e: 11	O A000000	D C 11				
	Field	Type	Null	Key	Default	Extra	
•	SuspectID	int	NO	PRI	NULL		
	CrimeID	int	YES	MUL	NULL		
	Name	varchar(255)	YES		NULL		
	Description	text	YES		NULL		
	CriminalHistory	text	YES		NULL		
	SAge	int	YES		NULL		

#### **Insert values**

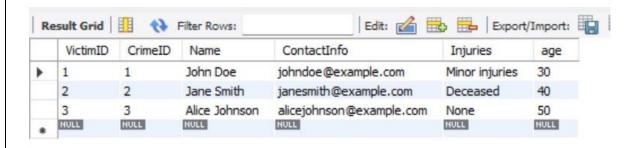
#### Crime

```
INSERT INTO Crime (CrimeID, IncidentType, IncidentDate, Location, Description, 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'),
  (3, 'Theft', '2023-09-10', '789 Oak St, Villagetown', 'Shoplifting incident at a mall', 'Closed');
 Edit: 🚰 📆 Export/Import: 📳 📸 Wrap Cell Content: 🖽
     CrimeID
             IncidentType
                           IncidentDate
                                        Location
                                                              Description
                                                                                                Status
              Robbery
                           2023-09-15
                                        123 Main St, Cityville
                                                              Armed robbery at a convenience store
                                                                                               Open
     2
                           2023-09-20
                                                                                               Under Inve...
             Homicide
                                        456 Elm St, Townsville
                                                              Investigation into a murder case
     3
              Theft
                           2023-09-10
                                        789 Oak St, Villagetown
                                                             Shoplifting incident at a mall
                                                                                               Closed
    NULL
             NULL
                          NULL
                                       NULL
                                                             NULL
                                                                                               NULL
```

#### **Victim**

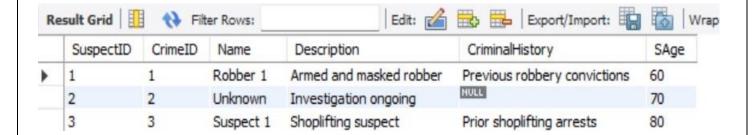
```
INSERT INTO Victim (VictimID, CrimeID, Name, ContactInfo, Injuries)
VALUES

(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');
```



# **Suspect**

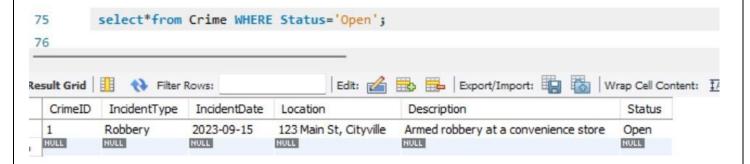
```
INSERT INTO Suspect (SuspectID, CrimeID, Name, Description, CriminalHistory)
VALUES
(1, 1, 'Robber 1', 'Armed and masked robber', 'Previous robbery convictions'),
(2, 2, 'Unknown', 'Investigation ongoing', NULL),
(3, 3, 'Suspect 1', 'Shoplifting suspect', 'Prior shoplifting arrests');
```



## **QUERIES:**

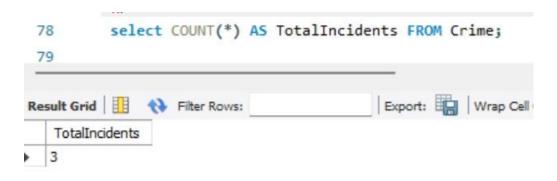
1. Select all open incidents.

SELECT \* FROM Crime WHERE Status = 'Open';



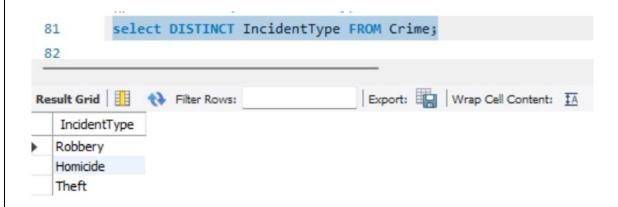
2. Find the total number of incidents.

SELECT COUNT(\*) AS TotalIncidents FROM Crime;



3.List all unique incident types.

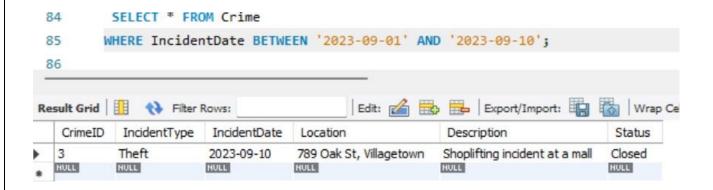
SELECT DISTINCT IncidentType FROM Crime;



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';



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

Select VictimId, CrimeID, Name, Age from Victim order by Age desc;



6. Find the average age of persons involved in incidents. select avg(Age) as Average\_Age from Victim;



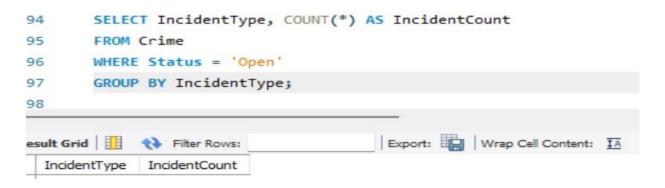
7. List incident types and their counts, only for open cases.

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%';



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

SELECT DISTINCT V.Name

FROM Victim V

JOIN Crime C ON V.CrimeID = C.CrimeID

WHERE C.Status IN ('Open', 'Closed');

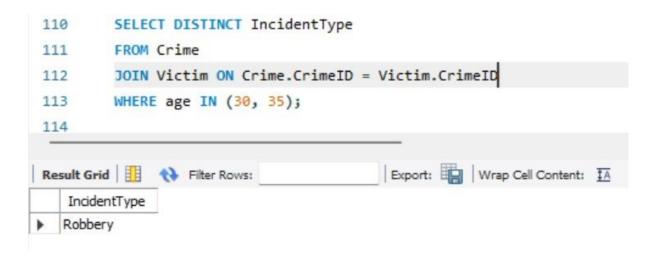
10.List incident types where there are persons aged 30 or 35 involved.

Select DISTINCT IncidentType

FROM Crime

Join Victim ON Crime.CrimeID = Victim.CrimeID

WHERE age IN (30,35);



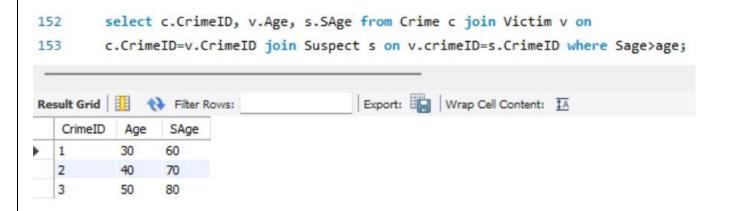
11. Find persons involved in incidents of the same type as 'Robbery'. SELECT DISTINCT V.Name FROM Victim V JOIN Crime C ON V.CrimeID = C.CrimeID WHERE C.IncidentType = 'Robbery'; 116 SELECT DISTINCT V.Name 117 FROM Victim V 118 JOIN Crime C ON V.CrimeID = C.CrimeID WHERE C.IncidentType = 'Robbery'; 119 120 Export: Wrap Cell Content: TA Result Grid Filter Rows: Name John Doe 12.List incident types with more than one open case. SELECT IncidentType, COUNT(\*) AS OpenCasesCount FROM Crime WHERE Status = 'Open' GROUP BY IncidentType HAVING COUNT(\*) > 1; SELECT IncidentType, COUNT(\*) AS OpenCasesCount 122 123 FROM Crime WHERE Status = 'Open' 124 GROUP BY IncidentType 125 126 HAVING COUNT(\*) > 1; 127 Export: Wrap Cell Content: TA Result Grid Filter Rows: IncidentType OpenCasesCount

13.List all incidents with suspects whose names also appear as victims in other incidents. SELECT C.\* FROM Crime C JOIN ( SELECT S.CrimeID FROM Suspect S WHERE EXISTS ( SELECT 1 FROM Victim V WHERE V.CrimeID = S.CrimeID AND V.Name = S.Name ) ) AS Subquery ON C.CrimeID = Subquery.CrimeID; 129 SELECT C.\* 130 FROM Crime C 131 O JOIN ( SELECT S.CrimeID 132 FROM Suspect S 133 134 SELECT 1 135 FROM Victim V 136 WHERE V.CrimeID = S.CrimeID 137 AND V.Name = S.Name138 - ) 139 ) AS Subquery ON C.CrimeID = Subquery.CrimeID; 140 Export: Wrap Cell Content: TA CrimeID IncidentType IncidentDate Location Description Status

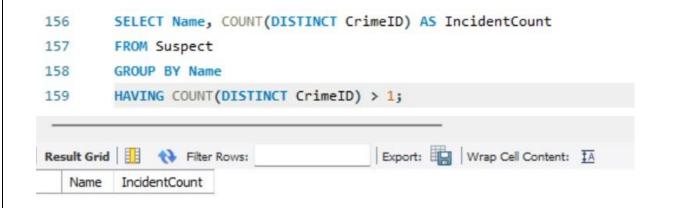
## 14.Retrieve all incidents along with victim and suspect details

```
SELECT c.*, v.Name AS VictimName, v.ContactInfo AS VictimContactInfo,
143
        v.Injuries AS VictimInjuries,
144
145
         s.Name AS SuspectName, s.Description AS SuspectDescription,
        s.CriminalHistory AS SuspectCriminalHistory
146
147
        FROM Crime c
        LEFT JOIN Victim v ON c.CrimeID = v.CrimeID
148
         LEFT JOIN Suspect s ON c.CrimeID = s.CrimeID;
149
                                                                                                                                             Export: Wrap Cell Content: IA
   CrimeID IncidentType IncidentDate Location
                                                                                       Status
                                                                                                    VictimName
                                                                                                                                        VictimInjuri
                                                        Description
                                                                                                                VictimContactInfo
                       2023-09-15
                                    123 Main St, Cityville
                                                        Armed robbery at a convenience store
                                                                                       Open
                                                                                                                johndoe@example.com
                                                                                                                                       Minor injurie
                     2023-09-20 456 Elm St, Townsville Investigation into a murder case Under Inve... Jane Smith
  2
          Homicide
                                                                                                                janesmith@example.com
                                                                                                                                       Deceased
  3
                       2023-09-10 789 Oak St, Villagetown Shoplifting incident at a mall
                                                                                       Closed
                                                                                                   Alice Johnson alicejohnson@example.com
```

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



# 16. Find suspects involved in multiple incidents



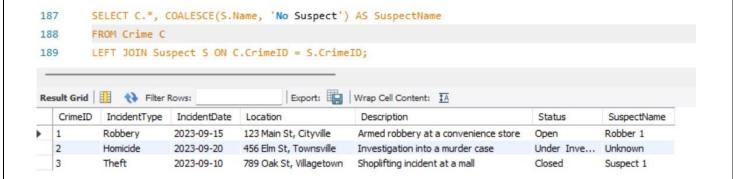
17.List incidents with no suspects involved.

```
SELECT C.*
162
         FROM Crime C
163
         LEFT JOIN Suspect S ON C.CrimeID = S.CrimeID
164
165
         WHERE S.SuspectID IS NULL;
                                            Export:
Result Grid
              Filter Rows:
                                                       Wrap Cell Content: IA
   CrimeID
           IncidentType IncidentDate
                                              Description
                                                         Status
                                     Location
```

18.List all cases where at least one incident is of type 'Homicide' and all other incidents are of type 'Robbery'.

```
170
        SELECT C.*
171
       FROM Crime C
172
      WHERE EXISTS (
173
        SELECT 1
        FROM Crime
174
        WHERE CrimeID = C.CrimeID AND IncidentType = 'Homicide'
175
176
       AND NOT EXISTS (
177
178
        SELECT 1
         FROM Crime
179
180
         WHERE CrimeID = C.CrimeID AND IncidentType != 'Robbery'
181
         );
182
183
                                      Edit: 🚄 📆 📙 Export/Import: 📳 🦝 Wrap Cell Content: 🖽
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.



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

