

## 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)  
);
```

Result Grid    Filter Rows: <input type="text"/>   Export:    Wrap Cell Content: 						
	Field	Type	Null	Key	Default	Extra
▶	CrimeID	int	NO	PRI	NULL	
	IncidentType	varchar(255)	YES		NULL	
	IncidentDate	date	YES		NULL	
	Location	varchar(255)	YES		NULL	
	Description	text	YES		NULL	
	Status	varchar(20)	YES		NULL	

**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='3';
select*from Victim;
```




Result Grid						
		Filter Rows:			Export:	Wrap C
	Field	Type	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='3';
```

Result Grid    Filter Rows: <input type="text" value=""/>   Export:    Wrap Cell Content: 						
	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)
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');
```

Result Grid

Edit

Export/Import

Wrap Cell Content

	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 Inve...
	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');
```

Result Grid

Filter Rows:

Edit:

Export/Import:


	VictimID	CrimeID	Name	ContactInfo	Injuries	age
▶	1	1	John Doe	johndoe@example.com	Minor injuries	30
	2	2	Jane Smith	janesmith@example.com	Deceased	40
	3	3	Alice Johnson	alicejohnson@example.com	None	50
•	NULL	NULL	NULL	NULL	NULL	NULL




## 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');
```


Result Grid





 Filter Rows:

Edit: 





Export/Import: 



Wrap

	SuspectID	CrimeID	Name	Description	CriminalHistory	SAge
▶	1	1	Robber 1	Armed and masked robber	Previous robbery convictions	60
	2	2	Unknown	Investigation ongoing	NULL	70
	3	3	Suspect 1	Shoplifting suspect	Prior shoplifting arrests	80

## QUERIES:

1. Select all open incidents.

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

```
75 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(*) AS TotalIncidents FROM Crime;
```

```
78 select COUNT(*) AS TotalIncidents FROM Crime;
```

```
79
```

Result Grid

Filter Rows:

Export:

Wrap Cell

	TotalIncidents
	3

3. List all unique incident types.

```
SELECT DISTINCT IncidentType FROM Crime;
```

```
81 select DISTINCT IncidentType FROM Crime;
```

```
82
```

Result Grid	Filter Rows:	Export:	Wrap Cell Content:
IncidentType			
Robbery			
Homicide			
Theft			

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';
```

```
84 SELECT * FROM Crime
85 WHERE IncidentDate BETWEEN '2023-09-01' AND '2023-09-10';
86
```

---

Result Grid

Filter Rows:

Edit:

Export/Import:

Wrap Cell

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

```
88 select VictimId, CrimeID, Name, Age from Victim order by Age desc;
```

```
89
```

Result Grid	Filter Rows:	Export:	Wrap Cell Content:
VictimId	CrimeID	Name	Age
3	3	Alice Johnson	50
2	2	Jane Smith	40
1	1	John Doe	30

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

```
select avg(Age) as Average_Age from Victim;
```

```
91  select avg(Age) as Average_Age from Victim;
92
```

Average_Age
40.0000

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

```
SELECT IncidentType, COUNT(*) AS IncidentCount
FROM Crime
WHERE Status = 'Open'
GROUP BY IncidentType;
```

```
94  SELECT IncidentType, COUNT(*) AS IncidentCount
95  FROM Crime
96  WHERE Status = 'Open'
97  GROUP BY IncidentType;
98
```

IncidentType	IncidentCount
--------------	---------------

8. Find persons with names containing 'Doe'.

```
SELECT * FROM Victim
WHERE Name LIKE '%Doe%';
```


```
100  SELECT * FROM Victim
101  WHERE name LIKE '%Doe%';
102
```




VictimID	CrimeID	Name	ContactInfo	Injuries	age
1	1	John Doe	johndoe@example.com	Minor injuries	30
*	NULL	NULL	NULL	NULL	NULL

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');
```

```
104  SELECT DISTINCT V.Name
105  FROM Victim V
106  JOIN Crime C ON V.CrimeID = C.CrimeID
107  WHERE C.Status IN ('Open', 'Closed');
108
```




Result Grid |  Filter Rows:  | Export:  | Wrap Cell Content: 




Name
John Doe
Alice Johnson

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);
```

```
110  SELECT DISTINCT IncidentType
111  FROM Crime
112  JOIN Victim ON Crime.CrimeID = Victim.CrimeID
113  WHERE age IN (30, 35);
114
```



Result Grid |  Filter Rows:  | Export:  | Wrap Cell Content: 

IncidentType
Robbery



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
119     WHERE C.IncidentType = 'Robbery';
120
```

Result Grid			Filter Rows: <input type="text"/>	Export:	Wrap Cell Content:
	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;
```

```
122     SELECT IncidentType, COUNT(*) AS OpenCasesCount
123     FROM Crime
124     WHERE Status = 'Open'
125     GROUP BY IncidentType
126     HAVING COUNT(*) > 1;
127
```

Result Grid			Filter Rows: <input type="text"/>	Export:	Wrap Cell Content:
	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 JOIN (
132     SELECT S.CrimeID
133     FROM Suspect S
134     WHERE EXISTS (
135         SELECT 1
136         FROM Victim V
137         WHERE V.CrimeID = S.CrimeID
138         AND V.Name = S.Name
139     )
140 ) AS Subquery ON C.CrimeID = Subquery.CrimeID;
```

Result Grid

Filter Rows:

Export:

Wrap Cell Content:

CrimeID

IncidentType

IncidentDate

Location

Description

Status

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

```
143 SELECT c.*, v.Name AS VictimName, v.ContactInfo AS VictimContactInfo,  
144 v.Injuries AS VictimInjuries,  
145 s.Name AS SuspectName, s.Description AS SuspectDescription,  
146 s.CriminalHistory AS SuspectCriminalHistory  
147 FROM Crime c  
148 LEFT JOIN Victim v ON c.CrimeID = v.CrimeID  
149 LEFT JOIN Suspect s ON c.CrimeID = s.CrimeID;
```

CrimeID	IncidentType	IncidentDate	Location	Description	Status	VictimName	VictimContactInfo	VictimInjuries
1	Robbery	2023-09-15	123 Main St, Cityville	Armed robbery at a convenience store	Open	John Doe	johndoe@example.com	Minor injuries
2	Homicide	2023-09-20	456 Elm St, Townsville	Investigation into a murder case	Under Investigation	Jane Smith	janesmith@example.com	Deceased
3	Theft	2023-09-10	789 Oak St, Villagetown	Shoplifting incident at a mall	Closed	Alice Johnson	alicejohnson@example.com	None

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

```
152 select c.CrimeID, v.Age, s.SAge from Crime c join Victim v on  
153 c.CrimeID=v.CrimeID join Suspect s on v.CrimeID=s.CrimeID where Sage>age;
```

CrimeID	Age	SAge
1	30	60
2	40	70
3	50	80





## 16.Find suspects involved in multiple incidents

```
156 SELECT Name, COUNT(DISTINCT CrimeID) AS IncidentCount  
157 FROM Suspect  
158 GROUP BY Name  
159 HAVING COUNT(DISTINCT CrimeID) > 1;
```

Name	IncidentCount
------	---------------









17. List incidents with no suspects involved.

```
162 SELECT C.*
163 FROM Crime C
164 LEFT JOIN Suspect S ON C.CrimeID = S.CrimeID
165 WHERE S.SuspectID IS NULL;
```

Result Grid			Filter Rows: <input type="text"/>	Export: 	Wrap Cell Content: 
CrimeID	IncidentType	IncidentDate	Location	Description	Status

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
174     FROM Crime
175     WHERE CrimeID = C.CrimeID AND IncidentType = 'Homicide'
176 )
177 AND NOT EXISTS (
178     SELECT 1
179     FROM Crime
180     WHERE CrimeID = C.CrimeID AND IncidentType != 'Robbery'
181 );
182
183
```

Result Grid			Filter Rows: <input type="text"/>	Edit: 			Export/Import: 		Wrap Cell Content: 
CrimeID	IncidentType	IncidentDate	Location	Description	Status				
*	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.

```
187 SELECT C.*, COALESCE(S.Name, 'No Suspect') AS SuspectName
188 FROM Crime C
189 LEFT JOIN Suspect S ON C.CrimeID = S.CrimeID;
```

Result Grid							
		Filter Rows:		Export:	Wrap Cell Content:		
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	
2	Homicide	2023-09-20	456 Elm St, Townsville	Investigation into a murder case	Under Inve...	Unknown	
3	Theft	2023-09-10	789 Oak St, Villagetown	Shoplifting incident at a mall	Closed	Suspect 1	

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

```
193 SELECT DISTINCT Name
194 FROM Suspect
195 WHERE CrimeID IN (
196     SELECT CrimeID
197     FROM Crime
198     WHERE IncidentType IN ('Robbery', 'Assault')
199 );
```

Result Grid

Filter Rows:

Export:

Wrap Cell Content:

	Name
▶	Robber 1