

## CRIME MANAGEMENT

NAME: HARSHA K

### Creating Tables:

```
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) );
```

```
mysql> create database Crime;  
Query OK, 1 row affected (0.07 sec)
```

```
mysql> use Crime;  
Database changed
```

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

```
Query OK, 0 rows affected (0.10 sec)
```

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

```
Query OK, 0 rows affected (0.05 sec)
```

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

```
Query OK, 0 rows affected (0.06 sec)
```

## Inserting Values:

```
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, 'Assault', '2023-09-05', '321 Pine St, Cityville', 'Physical altercation outside a bar', 'Open'),
(5, 'Burglary', '2023-09-01', '987 Maple St, Hamletville', 'Break-in at residence', 'Closed'),
(6, 'Robbery', '2023-09-19', '44 Hill Rd, Uptown', 'Robbery at an ATM', 'Open'),
(7, 'Fraud', '2023-09-26', 'Bank HQ', 'Financial scam reported', 'Open'),
(8, 'Cybercrime', '2023-09-25', 'Online Platform', 'Data breach reported', 'Under Investigation'),
(9, 'Robbery', '2023-09-07', 'MegaMart Plaza', 'Robbery at retail store', 'Open'),
(10, 'Homicide', '2023-09-08', '88 River Rd, Cityville', 'Multiple stabbings reported', 'Under Investigation');
```

```
mysql> 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, 'Assault', '2023-09-05', '321 Pine St, Cityville', 'Physical altercation outside a bar', 'Open'),
-> (5, 'Burglary', '2023-09-01', '987 Maple St, Hamletville', 'Break-in at residence', 'Closed'),
-> (6, 'Robbery', '2023-09-19', '44 Hill Rd, Uptown', 'Robbery at an ATM', 'Open'),
-> (7, 'Fraud', '2023-09-26', 'Bank HQ', 'Financial scam reported', 'Open'),
-> (8, 'Cybercrime', '2023-09-25', 'Online Platform', 'Data breach reported', 'Under Investigation'),
-> (9, 'Robbery', '2023-09-07', 'MegaMart Plaza', 'Robbery at retail store', 'Open'),
-> (10, 'Homicide', '2023-09-08', '88 River Rd, Cityville', 'Multiple stabbings reported', 'Under Investigation');
```

```
Query OK, 10 rows affected (0.01 sec)
```

```
Records: 10 Duplicates: 0 Warnings: 0
```

```
mysql> select * from 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
4	Assault	2023-09-05	321 Pine St, Cityville	Physical altercation outside a bar	Open
5	Burglary	2023-09-01	987 Maple St, Hamletville	Break-in at residence	Closed
6	Robbery	2023-09-19	44 Hill Rd, Uptown	Robbery at an ATM	Open
7	Fraud	2023-09-26	Bank HQ	Financial scam reported	Open
8	Cybercrime	2023-09-25	Online Platform	Data breach reported	Under Investigation
9	Robbery	2023-09-07	MegaMart Plaza	Robbery at retail store	Open
10	Homicide	2023-09-08	88 River Rd, Cityville	Multiple stabbings reported	Under Investigation

```
10 rows in set (0.02 sec)
```

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'),

(4, 4, 'Bob Harris', 'bob@example.com', 'Head injury'),

(5, 5, 'David Lee', 'david@example.com', 'Fractured arm'),

(6, 6, 'Jake Doe', 'jaked@example.com', 'Scared'),

(7, 7, 'Lara Croft', 'lara@example.com', 'No injuries'),

(8, 8, 'Michael Brown', 'mikeb@example.com', 'Mild shock'),

(9, 9, 'Emily Clark', 'emilyc@example.com', 'Broken nose'),

(10, 10, 'Sandra White', 'sandra@example.com', 'None');

```
mysql> 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'),
-> (4, 4, 'Bob Harris', 'bob@example.com', 'Head injury'),
-> (5, 5, 'David Lee', 'david@example.com', 'Fractured arm'),
-> (6, 6, 'Jake Doe', 'jaked@example.com', 'Scared'),
-> (7, 7, 'Lara Croft', 'lara@example.com', 'No injuries'),
-> (8, 8, 'Michael Brown', 'mikeb@example.com', 'Mild shock'),
-> (9, 9, 'Emily Clark', 'emilyc@example.com', 'Broken nose'),
-> (10, 10, 'Sandra White', 'sandra@example.com', 'None');
```

Query OK, 10 rows affected (0.03 sec)

Records: 10 Duplicates: 0 Warnings: 0

```
mysql> select * from Victim;
```

VictimID	CrimeID	Name	ContactInfo	Injuries
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
4	4	Bob Harris	bob@example.com	Head injury
5	5	David Lee	david@example.com	Fractured arm
6	6	Jake Doe	jaked@example.com	Scared
7	7	Lara Croft	lara@example.com	No injuries
8	8	Michael Brown	mikeb@example.com	Mild shock
9	9	Emily Clark	emilyc@example.com	Broken nose
10	10	Sandra White	sandra@example.com	None

10 rows in set (0.00 sec)

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'),

(4, 4, 'Mike Tyson', 'Aggressive behavior', 'Assault record'),

(5, 5, 'Jake Doe', 'Suspicious neighbor', 'None'),

(6, 6, 'Big Joe', 'Tall and old', 'Robbery mastermind'),

(7, 7, 'Cyber Phantom', 'No trace found', 'Unknown'),

(8, 8, 'Fraud King', 'Sophisticated scammer', 'Money laundering'),

(9, 9, 'Robber 2', 'Daylight heist', 'Repeat robbery'),

(10, 10, 'Unknown', 'Masked figure seen', NULL);

```
mysql> 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'),
-> (4, 4, 'Mike Tyson', 'Aggressive behavior', 'Assault record'),
-> (5, 5, 'Jake Doe', 'Suspicious neighbor', 'None'),
-> (6, 6, 'Big Joe', 'Tall and old', 'Robbery mastermind'),
-> (7, 7, 'Cyber Phantom', 'No trace found', 'Unknown'),
-> (8, 8, 'Fraud King', 'Sophisticated scammer', 'Money laundering'),
-> (9, 9, 'Robber 2', 'Daylight heist', 'Repeat robbery'),
-> (10, 10, 'Unknown', 'Masked figure seen', NULL);
Query OK, 10 rows affected (0.03 sec)
```

Records: 10 Duplicates: 0 Warnings: 0

```
mysql> select * from Suspect;
```

SuspectID	CrimeID	Name	Description	CriminalHistory
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
4	4	Mike Tyson	Aggressive behavior	Assault record
5	5	Jake Doe	Suspicious neighbor	None
6	6	Big Joe	Tall and old	Robbery mastermind
7	7	Cyber Phantom	No trace found	Unknown
8	8	Fraud King	Sophisticated scammer	Money laundering
9	9	Robber 2	Daylight heist	Repeat robbery
10	10	Unknown	Masked figure seen	NULL

10 rows in set (0.00 sec)

## 1. Select all open incidents.

Query:

```
SELECT * FROM Crime
```

```
WHERE Status = 'Open';
```

```
mysql> 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	Assault	2023-09-05	321 Pine St, Cityville	Physical altercation outside a bar	Open
6	Robbery	2023-09-19	44 Hill Rd, Uptown	Robbery at an ATM	Open
7	Fraud	2023-09-26	Bank HQ	Financial scam reported	Open
9	Robbery	2023-09-07	MegaMart Plaza	Robbery at retail store	Open

5 rows in set (0.00 sec)

## 2. Find the total number of incidents.

Query:

```
SELECT COUNT(*) AS TotalIncidents FROM Crime;
```

```
mysql> SELECT COUNT(*) AS TotalIncidents FROM Crime;
```

TotalIncidents
10

1 row in set (0.03 sec)

### 3. List all unique incident types.

Query:

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

```
mysql> SELECT DISTINCT IncidentType FROM Crime;
+-----+
| IncidentType |
+-----+
| Robbery      |
| Homicide     |
| Theft        |
| Assault      |
| Burglary     |
| Fraud        |
| Cybercrime   |
+-----+
7 rows in set (0.02 sec)
```

### 4. Retrieve incidents that occurred between '2023-09-01' and '2023-09-10'.

Query:

```
SELECT * FROM Crime
```

```
WHERE IncidentDate BETWEEN '2023-09-01' AND '2023-09-10';
```

```
mysql> 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 |
| 4 | Assault | 2023-09-05 | 321 Pine St, Cityville | Physical altercation outside a bar | Open |
| 5 | Burglary | 2023-09-01 | 987 Maple St, Hamletville | Break-in at residence | Closed |
| 9 | Robbery | 2023-09-07 | MegaMart Plaza | Robbery at retail store | Open |
| 10 | Homicide | 2023-09-08 | 88 River Rd, Cityville | Multiple stabbings reported | Under Investigation |
+-----+-----+-----+-----+-----+-----+
5 rows in set (0.00 sec)
```

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

Query:

```
SELECT Name, Age, 'Victim' AS Role FROM Victim
```

```
UNION
```

```
SELECT Name, Age, 'Suspect' AS Role FROM Suspect
```

```
ORDER BY Age DESC;
```

```
mysql> SELECT Name, Age, 'Victim' AS Role FROM Victim
-> UNION
-> SELECT Name, Age, 'Suspect' AS Role FROM Suspect
-> ORDER BY Age DESC;
```

Name	Age	Role
Big Joe	45	Suspect
Mike Tyson	42	Suspect
Robber 2	41	Suspect
David Lee	40	Victim
Fraud King	38	Suspect
Sandra White	36	Victim
Jane Smith	35	Victim
Unknown	35	Suspect
Unknown	34	Suspect
Michael Brown	33	Victim
Robber 1	32	Suspect
Bob Harris	31	Victim
Jake Doe	30	Victim
Jake Doe	30	Suspect
Cyber Phantom	29	Suspect
John Doe	28	Victim
Lara Croft	27	Victim
Suspect 1	25	Suspect
Emily Clark	24	Victim
Alice Johnson	22	Victim

20 rows in set (0.02 sec)

(Altered table victim and suspect before achieving this output since age did not exist in column. Below is the screenshot of the same)

```
mysql> ALTER TABLE Victim ADD Age INT;
Query OK, 0 rows affected (0.02 sec)
Records: 0 Duplicates: 0 Warnings: 0

mysql> ALTER TABLE Suspect ADD Age INT;
Query OK, 0 rows affected (0.02 sec)
Records: 0 Duplicates: 0 Warnings: 0
```



```
mysql> UPDATE Victim SET Age = 28 WHERE VictimID = 1;
Query OK, 1 row affected (0.03 sec)
Rows matched: 1  Changed: 1  Warnings: 0

mysql> UPDATE Victim SET Age = 35 WHERE VictimID = 2;
Query OK, 1 row affected (0.00 sec)
Rows matched: 1  Changed: 1  Warnings: 0

mysql> UPDATE Victim SET Age = 22 WHERE VictimID = 3;
Query OK, 1 row affected (0.00 sec)
Rows matched: 1  Changed: 1  Warnings: 0

mysql> UPDATE Victim SET Age = 31 WHERE VictimID = 4;
Query OK, 1 row affected (0.00 sec)
Rows matched: 1  Changed: 1  Warnings: 0

mysql> UPDATE Victim SET Age = 40 WHERE VictimID = 5;
Query OK, 1 row affected (0.00 sec)
Rows matched: 1  Changed: 1  Warnings: 0

mysql> UPDATE Victim SET Age = 30 WHERE VictimID = 6;
Query OK, 1 row affected (0.01 sec)
Rows matched: 1  Changed: 1  Warnings: 0

mysql> UPDATE Victim SET Age = 27 WHERE VictimID = 7;
Query OK, 1 row affected (0.00 sec)
Rows matched: 1  Changed: 1  Warnings: 0

mysql> UPDATE Victim SET Age = 33 WHERE VictimID = 8;
Query OK, 1 row affected (0.00 sec)
Rows matched: 1  Changed: 1  Warnings: 0

mysql> UPDATE Victim SET Age = 24 WHERE VictimID = 9;
Query OK, 1 row affected (0.00 sec)
Rows matched: 1  Changed: 1  Warnings: 0

mysql> UPDATE Victim SET Age = 36 WHERE VictimID = 10;
Query OK, 1 row affected (0.00 sec)
Rows matched: 1  Changed: 1  Warnings: 0
```

```
mysql> UPDATE Suspect SET Age = 32 WHERE SuspectID = 1;
Query OK, 1 row affected (0.02 sec)
Rows matched: 1  Changed: 1  Warnings: 0

mysql> UPDATE Suspect SET Age = 34 WHERE SuspectID = 2;
Query OK, 1 row affected (0.00 sec)
Rows matched: 1  Changed: 1  Warnings: 0

mysql> UPDATE Suspect SET Age = 25 WHERE SuspectID = 3;
Query OK, 1 row affected (0.00 sec)
Rows matched: 1  Changed: 1  Warnings: 0

mysql> UPDATE Suspect SET Age = 42 WHERE SuspectID = 4;
Query OK, 1 row affected (0.00 sec)
Rows matched: 1  Changed: 1  Warnings: 0

mysql> UPDATE Suspect SET Age = 30 WHERE SuspectID = 5;
Query OK, 1 row affected (0.00 sec)
Rows matched: 1  Changed: 1  Warnings: 0

mysql> UPDATE Suspect SET Age = 45 WHERE SuspectID = 6;
Query OK, 1 row affected (0.00 sec)
Rows matched: 1  Changed: 1  Warnings: 0

mysql> UPDATE Suspect SET Age = 29 WHERE SuspectID = 7;
Query OK, 1 row affected (0.00 sec)
Rows matched: 1  Changed: 1  Warnings: 0

mysql> UPDATE Suspect SET Age = 38 WHERE SuspectID = 8;
Query OK, 1 row affected (0.00 sec)
Rows matched: 1  Changed: 1  Warnings: 0

mysql> UPDATE Suspect SET Age = 41 WHERE SuspectID = 9;
Query OK, 1 row affected (0.00 sec)
Rows matched: 1  Changed: 1  Warnings: 0

mysql> UPDATE Suspect SET Age = 35 WHERE SuspectID = 10;
Query OK, 1 row affected (0.00 sec)
Rows matched: 1  Changed: 1  Warnings: 0
```

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

Query:

```
SELECT AVG(Age) AS AverageAge FROM (  
SELECT Age FROM Victim  
UNION ALL  
SELECT Age FROM Suspect) AS AllPersons;
```

```
mysql> SELECT AVG(Age) AS AverageAge FROM (  
-> SELECT Age FROM Victim  
-> UNION ALL  
-> SELECT Age FROM Suspect  
-> ) AS AllPersons;  
+-----+  
| AverageAge |  
+-----+  
| 32.8500 |  
+-----+  
1 row in set (0.02 sec)
```

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

Query:

```
SELECT IncidentType, COUNT(*) AS OpenCaseCount  
FROM Crime  
WHERE Status = 'Open'  
GROUP BY IncidentType  
HAVING COUNT(*) >= 1;
```

```
mysql> SELECT IncidentType, COUNT(*) AS OpenCaseCount  
-> FROM Crime  
-> WHERE Status = 'Open'  
-> GROUP BY IncidentType  
-> HAVING COUNT(*) >=  
-> 1;  
+-----+-----+  
| IncidentType | OpenCaseCount |  
+-----+-----+  
| Robbery      | 3             |  
| Assault      | 2             |  
| Fraud         | 1             |  
+-----+-----+  
3 rows in set (0.00 sec)
```

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

Query:

SELECT Name, 'Victim' AS Role FROM Victim WHERE Name LIKE '%Doe%'

UNION

SELECT Name, 'Suspect' AS Role FROM Suspect WHERE Name LIKE '%Doe%';

```
mysql> SELECT Name, 'Victim' AS Role FROM Victim WHERE Name LIKE '%Doe%'
-> UNION
-> SELECT Name, 'Suspect' AS Role FROM Suspect WHERE Name LIKE '%Doe%';
```

Name	Role
John Doe	Victim
Jake Doe	Victim
Jake Doe	Suspect

3 rows in set (0.00 sec)

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

Query:

```
SELECT v.Name, c.Status, 'Victim' AS Role
```

```
FROM Victim v
```

```
JOIN Crime c ON v.CrimeID = c.CrimeID WHERE c.Status IN ('Open', 'Closed')
```

```
UNION
```

```
SELECT s.Name, c.Status, 'Suspect' AS Role
```

```
FROM Suspect s
```

```
JOIN Crime c ON s.CrimeID = c.CrimeID WHERE c.Status IN ('Open', 'Closed');
```

```
mysql> SELECT v.Name, c.Status, 'Victim' AS Role
-> FROM Victim v
-> JOIN Crime c ON v.CrimeID = c.CrimeID
-> WHERE c.Status IN ('Open', 'Closed')
->
-> UNION
->
-> SELECT s.Name, c.Status, 'Suspect' AS Role
-> FROM Suspect s
-> JOIN Crime c ON s.CrimeID = c.CrimeID
-> WHERE c.Status IN ('Open', 'Closed');
```

Name	Status	Role
John Doe	Open	Victim
Alice Johnson	Closed	Victim
Bob Harris	Open	Victim
David Lee	Closed	Victim
Jake Doe	Open	Victim
Lara Croft	Open	Victim
Emily Clark	Open	Victim
Robber 1	Open	Suspect
Suspect 1	Closed	Suspect
Mike Tyson	Open	Suspect
Jake Doe	Closed	Suspect
Big Joe	Open	Suspect
Cyber Phantom	Open	Suspect
Robber 2	Open	Suspect

```
14 rows in set (0.00 sec)
```

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

Query:

```
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);
```

```
mysql> 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
Homicide	35
Robbery	30
Burglary	30

3 rows in set (0.00 sec)

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

Query:

```
SELECT v.Name AS PersonName, c.IncidentType
FROM Victim v
JOIN Crime c ON v.CrimeID = c.CrimeID
WHERE c.IncidentType = 'Robbery'
UNION
SELECT s.Name AS PersonName, c.IncidentType
FROM Suspect s
JOIN Crime c ON s.CrimeID = c.CrimeID
WHERE c.IncidentType = 'Robbery';
```

```
mysql> SELECT v.Name AS PersonName, c.IncidentType
-> FROM Victim v
-> JOIN Crime c ON v.CrimeID = c.CrimeID
-> WHERE c.IncidentType = 'Robbery'
->
-> UNION
->
-> SELECT s.Name AS PersonName, c.IncidentType
-> FROM Suspect s
-> JOIN Crime c ON s.CrimeID = c.CrimeID
-> WHERE c.IncidentType = 'Robbery';
```

PersonName	IncidentType
John Doe	Robbery
Jake Doe	Robbery
Emily Clark	Robbery
Robber 1	Robbery
Big Joe	Robbery
Robber 2	Robbery

6 rows in set (0.00 sec)

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

Query:

```
SELECT IncidentType, COUNT(*) AS OpenCaseCount
FROM Crime WHERE Status = 'Open'
GROUP BY IncidentType
HAVING COUNT(*) > 1;
```

```
mysql> SELECT IncidentType, COUNT(*) AS OpenCaseCount
      -> FROM Crime
      -> WHERE Status = 'Open'
      -> GROUP BY IncidentType
      -> HAVING COUNT(*) > 1;
+-----+-----+
| IncidentType | OpenCaseCount |
+-----+-----+
| Robbery      | 3             |
| Assault      | 2             |
+-----+-----+
2 rows in set (0.00 sec)
```

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

Query:

```
SELECT DISTINCT c.CrimeID, c.IncidentType, s.Name AS SuspectName
FROM Crime c
JOIN Suspect s ON c.CrimeID = s.CrimeID
WHERE s.Name IN (
SELECT Name FROM Victim);
```

```
mysql> INSERT INTO Crime (CrimeID, IncidentType, IncidentDate, Location, Description, Status)
      -> VALUES (11, 'Fraud', '2023-09-28', '999 Fraud Lane', 'Scam call', 'Closed');
ERROR 1062 (23000): Duplicate entry '11' for key 'crime.PRIMARY'
mysql> INSERT INTO Victim (VictimID, CrimeID, Name, ContactInfo, Injuries)
      -> VALUES (11, 11, 'Robber 1', 'robberlvictim@example.com', 'Scared');
Query OK, 1 row affected (0.02 sec)

mysql> SELECT DISTINCT c.CrimeID, c.IncidentType, s.Name AS SuspectName
      -> FROM Crime c
      -> JOIN Suspect s ON c.CrimeID = s.CrimeID
      -> WHERE s.Name IN (
      -> SELECT Name FROM Victim
      -> );
+-----+-----+-----+
| CrimeID | IncidentType | SuspectName |
+-----+-----+-----+
| 1       | Robbery      | Robber 1    |
| 5       | Burglary     | Jake Doe    |
+-----+-----+-----+
2 rows in set (0.00 sec)
```

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

Query:

```
SELECT c.CrimeID, c.IncidentType, v.Name AS VictimName, s.Name AS SuspectName
```

```
FROM Crime c
```

```
JOIN Victim v ON c.CrimeID = v.CrimeID
```

```
JOIN Suspect s ON c.CrimeID = s.CrimeID;
```

```
mysql> SELECT c.CrimeID, c.IncidentType, v.Name AS VictimName, s.Name AS SuspectName
-> FROM Crime c
-> JOIN Victim v ON c.CrimeID = v.CrimeID
-> JOIN Suspect s ON c.CrimeID = s.CrimeID;
```

CrimeID	IncidentType	VictimName	SuspectName
1	Robbery	John Doe	Robber 1
2	Homicide	Jane Smith	Unknown
3	Theft	Alice Johnson	Suspect 1
4	Assault	Bob Harris	Mike Tyson
5	Burglary	David Lee	Jake Doe
6	Robbery	Jake Doe	Big Joe
7	Fraud	Lara Croft	Cyber Phantom
8	Cybercrime	Michael Brown	Fraud King
9	Robbery	Emily Clark	Robber 2
10	Homicide	Sandra White	Unknown

```
10 rows in set (0.00 sec)
```



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

Query:

```
SELECT DISTINCT c.CrimeID, c.IncidentType, s.Name AS SuspectName, s.Age  
FROM Crime c  
JOIN Suspect s ON c.CrimeID = s.CrimeID  
WHERE s.Age > (SELECT MAX(Age) FROM Victim);
```

```
mysql> SELECT MAX(Age) FROM Victim;  
+-----+  
| MAX(Age) |  
+-----+  
|      40 |  
+-----+  
1 row in set (0.00 sec)  
  
mysql> SELECT DISTINCT c.CrimeID, c.IncidentType, s.Name AS SuspectName, s.Age  
-> FROM Crime c  
-> JOIN Suspect s ON c.CrimeID = s.CrimeID  
-> WHERE s.Age > (SELECT MAX(Age) FROM Victim);  
+-----+-----+-----+-----+  
| CrimeID | IncidentType | SuspectName | Age |  
+-----+-----+-----+-----+  
|      4 | Assault      | Mike Tyson  | 42 |  
|      6 | Robbery      | Big Joe     | 45 |  
|      9 | Robbery      | Robber 2    | 41 |  
+-----+-----+-----+-----+  
3 rows in set (0.00 sec)
```

**16. Find suspects involved in multiple incidents**

Query:

```
SELECT Name, COUNT(*) AS IncidentCount  
FROM Suspect  
GROUP BY Name  
HAVING COUNT(*) > 1;
```

```
mysql> SELECT Name, COUNT(*) AS IncidentCount  
-> FROM Suspect  
-> GROUP BY Name  
-> HAVING COUNT(*) > 1;  
+-----+-----+  
| Name      | IncidentCount |  
+-----+-----+  
| Robber 1  | 2             |  
| Unknown   | 2             |  
| Mike Tyson | 2             |  
| Jake Doe  | 2             |  
+-----+-----+  
4 rows in set (0.00 sec)
```

### 17. List incidents with no suspects involved.

Query:

```
SELECT c.CrimeID, c.IncidentType, c.Description
FROM Crime c
LEFT JOIN Suspect s ON c.CrimeID = s.CrimeID
WHERE s.SuspectID IS NULL;
```

```
mysql> SELECT c.CrimeID, c.IncidentType, c.Description
-> FROM Crime c
-> LEFT JOIN Suspect s ON c.CrimeID = s.CrimeID
-> WHERE s.SuspectID IS NULL;
```

CrimeID	IncidentType	Description
12	Cylinder Burn	Fire in abandoned building
13	Kidnapping	Missing person case reported

2 rows in set (0.00 sec)

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

Query:

```
SELECT *
FROM Crime
WHERE Location = 'Zone Y';
```

```
mysql> INSERT INTO Crime (CrimeID, IncidentType, IncidentDate, Location, Description, Status)
-> VALUES
-> (17, 'Robbery', '2023-10-15', 'Zone Y', 'Bank robbery', 'Open'),
-> (18, 'Robbery', '2023-10-16', 'Zone Y', 'Street robbery', 'Open');
Query OK, 2 rows affected (0.03 sec)
Records: 2 Duplicates: 0 Warnings: 0

mysql> INSERT INTO Crime (CrimeID, IncidentType, IncidentDate, Location, Description, Status)
-> VALUES
-> (19, 'Homicide', '2023-10-17', 'Zone Y', 'Double murder case', 'Under Investigation');
Query OK, 1 row affected (0.00 sec)

mysql> SELECT *
-> FROM Crime
-> WHERE Location = 'Zone Y';
```

CrimeID	IncidentType	IncidentDate	Location	Description	Status
17	Robbery	2023-10-15	Zone Y	Bank robbery	Open
18	Robbery	2023-10-16	Zone Y	Street robbery	Open
19	Homicide	2023-10-17	Zone Y	Double murder case	Under Investigation

3 rows in set (0.00 sec)

19. Retrieve a list of all incidents and the associated suspects, showing suspects for each incident, or 'No Suspect' if there are none.

Query:

SELECT C.CrimeID, C.IncidentType, C.IncidentDate,

IFNULL(S.Name, 'No Suspect') AS SuspectName

FROM Crime C

LEFT JOIN Suspect S ON C.CrimeID = S.CrimeID;

```
mysql> SELECT
->     C.CrimeID,
->     C.IncidentType,
->     C.IncidentDate,
->     IFNULL(S.Name, 'No Suspect') AS SuspectName
-> FROM Crime C
-> LEFT JOIN Suspect S ON C.CrimeID = S.CrimeID;
```

CrimeID	IncidentType	IncidentDate	SuspectName
1	Robbery	2023-09-15	Robber 1
2	Homicide	2023-09-20	Unknown
3	Theft	2023-09-10	Suspect 1
4	Assault	2023-09-05	Mike Tyson
5	Burglary	2023-09-01	Jake Doe
6	Robbery	2023-09-19	Big Joe
6	Robbery	2023-09-19	Jake Doe
7	Fraud	2023-09-26	Cyber Phantom
8	Cybercrime	2023-09-25	Fraud King
9	Robbery	2023-09-07	Robber 2
9	Robbery	2023-09-07	Robber 1
10	Homicide	2023-09-08	Unknown
11	Assault	2023-09-30	Mike Tyson
12	Cylinder Burn	2023-09-28	No Suspect
13	Kidnapping	2023-09-29	No Suspect
14	Homicide	2023-10-10	No Suspect
15	Robbery	2023-10-11	No Suspect
16	Robbery	2023-10-12	No Suspect
17	Robbery	2023-10-15	No Suspect
18	Robbery	2023-10-16	No Suspect
19	Homicide	2023-10-17	No Suspect

21 rows in set (0.02 sec)

```
mysql>
```

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

Query:

```
SELECT DISTINCT S.*
```

```
FROM Suspect S
```

```
JOIN Crime C ON S.CrimeID = C.CrimeID
```

```
WHERE C.IncidentType IN ('Robbery', 'Assault');
```

```
mysql> SELECT DISTINCT S.*
-> FROM Suspect S
-> JOIN Crime C ON S.CrimeID = C.CrimeID
-> WHERE C.IncidentType IN ('Robbery', 'Assault');
```

SuspectID	CrimeID	Name	Description	CriminalHistory	Age
1	1	Robber 1	Armed and masked robber	Previous robbery convictions	32
4	4	Mike Tyson	Aggressive behavior	Assault record	42
6	6	Big Joe	Tall and old	Robbery mastermind	45
12	6	Jake Doe	Robbery follow-up	Repeat offender	30
9	9	Robber 2	Daylight heist	Repeat robbery	41
13	9	Robber 1	Retail store robbery	Previous robbery convictions	32
11	11	Mike Tyson	Repeated assault incident	Known boxer involved	42

```
7 rows in set (0.00 sec)

mysql>
```