**CRIME MANAGEMENT SYSTEM**

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

desc Crime;

+--------------+--------------+------+-----+---------+-------+

| 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 | |

+--------------+--------------+------+-----+---------+-------+

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

desc Victim;

+-------------+--------------+------+-----+---------+-------+

| 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 | |

+-------------+--------------+------+-----+---------+-------+

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

desc Suspect;

+-----------------+--------------+------+-----+---------+-------+

| 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 | |

+-----------------+--------------+------+-----+---------+-------+

**Insert 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');**

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 | UnderInvestigation |

| 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');**

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 |

+----------+---------+---------------+--------------------------+----------------+

**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');**

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 |

+-----------+---------+-----------+-------------------------+------------------------------+

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 |

+---------+--------------+--------------+------------------------+--------------------------------------+--------+

1. **Find the total number of incidents.**

select count(IncidentType) AS TotalIncident from Crime;

+---------------+

| TotalIncident |

+---------------+

| 3 |

+---------------+

1. **List all unique incident types.**

select DISTINCT IncidentType from Crime;

+--------------+

| IncidentType |

+--------------+

| Robbery |

| Homicide |

| Theft |

+--------------+

1. **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 |

+---------+--------------+--------------+-------------------------+--------------------------------+--------+

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

select avg(Age) AS averageage from Suspect UNION select age from Victim ;

+------------+

| averageage |

+------------+

| 33.6667 |

| 30.0000 |

| 25.0000 |

| 35.0000 |

+------------+

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

select IncidentType , count(IncidentType) from Crime where Status = 'Open' GROUP BY IncidentType;

+--------------+---------------------+

| IncidentType | count(IncidentType) |

+--------------+---------------------+

| Robbery | 1 |

+--------------+---------------------+

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

select Name from Victim where Name LIKE '%DOE';

+----------+

| Name |

+----------+

| John Doe |

+----------+

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

SELECT Name FROM Victim WHERE CrimeID IN (SELECT CrimeID FROM Crime WHERE Status IN ('Open', 'Closed')) UNION SELECT Name FROM Suspect WHERE CrimeID IN (SELECT CrimeID FROM Crime WHERE Status IN ('Open', 'Closed'));

+---------------+

| Name |

+---------------+

| John Doe |

| Alice Johnson |

| Robber 1 |

| Suspect 1 |

+---------------+

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

SELECT c.IncidentType FROM Crime c JOIN Victim v ON c.CrimeID = v.CrimeID WHERE v.Age IN (30, 35) UNION SELECT c.IncidentType from Crime c JOIN Suspect s ON c.CrimeID = s.CrimeID WHERE s.Age IN (30, 35);

+--------------+

| IncidentType |

+--------------+

| Robbery |

| Theft |

+--------------+

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

SELECT Name FROM Victim WHERE CrimeID IN (SELECT CrimeID FROM Crime WHERE IncidentType = 'Robbery') UNION SELECT Name FROM Suspect WHERE CrimeID IN (SELECT CrimeID FROM Crime WHERE IncidentType = 'Robbery');

+----------+

| Name |

+----------+

| John Doe |

| Robber 1 |

+----------+

**11. List incident types with more than one open case.**

select IncidentType from Crime WHERE Status = 'Open' GROUP BY IncidentType Having COUNT(\*) > 1;

Empty set (0.00 sec)

**12. List all incidents with suspects whose names also appear as victims in other incidents.**

select c.CrimeID , c.IncidentType , c.IncidentDate , c.Location FROM Crime c JOIN Suspect s ON c.CrimeID = s.CrimeID WHERE s.Name IN (select v.Name from Victim v WHERE v.Name is NOT NULL GROUP BY v.Name );

Empty set (0.00 sec)

**13. Retrieve all incidents along with victim and suspect details.**

SELECT c.CrimeID, c.IncidentType, c.IncidentDate, c.Location , v.Name as VictimName , v.ContactInfo , v.Injuries , s.Name as SuspectName , s.Description as SuspectDescription 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 | VictimName | ContactInfo | Injuries | SuspectName | SuspectDescription |

+---------+--------------+--------------+-------------------------+---------------+--------------------------+----------------+-------------+-------------------------+

| 1 | Robbery | 2023-09-15 | 123 Main St, Cityville | John Doe | johndoe@example.com | Minor injuries | Robber 1 | Armed and masked robber |

| 2 | Homicide | 2023-09-20 | 456 Elm St, Townsville | Jane Smith | janesmith@example.com | Deceased | Unknown | Investigation ongoing |

| 3 | Theft | 2023-09-10 | 789 Oak St, Villagetown | Alice Johnson | alicejohnson@example.com | None | Suspect 1 | Shoplifting suspect |

+---------+--------------+--------------+-------------------------+---------------+--------------------------+----------------+-------------+-------------------------+

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

SELECT DISTINCT c.CrimeID, c.IncidentType, c.IncidentDate, c.Location from Crime c JOIN Victim v ON c.CrimeID = v.CrimeID JOIN Suspect s ON c.CrimeID = s.CrimeID WHERE s.Age > v.Age;

+---------+--------------+--------------+------------------------+

| CrimeID | IncidentType | IncidentDate | Location |

+---------+--------------+--------------+------------------------+

| 1 | Robbery | 2023-09-15 | 123 Main St, Cityville |

| 2 | Homicide | 2023-09-20 | 456 Elm St, Townsville |

+---------+--------------+--------------+------------------------+

**15. Find suspects involved in multiple incidents:**

select s.Name , COUNT(DISTINCT c.CrimeID) as incidentcount from Suspect s JOIN Crime c ON c.CrimeID = s.CrimeID GROUP BY s.Name HAVING incidentcount>1;

**16. List incidents with no suspects involved.**

select \* from Crime WHERE CrimeID NOT IN (select CrimeID from Suspect);

Empty set (0.00 sec)

**17. 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';

+---------+--------------+--------------+------------------------+--------------------------------------+----------------------+

| 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 |

+---------+--------------+--------------+------------------------+--------------------------------------+----------------------+

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

select s.Name from Suspect s JOIN Crime c ON c.CrimeID = s.CrimeID WHERE c.IncidentType = 'Robbery' OR c.IncidentType = 'Assault';

+----------+

| Name |

+----------+

| Robber 1 |

+----------+