**Coding Challenge 3: Crime Management**

**CREATED 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) );**

**ALTER TABLE Victim ADD COLUMN DOB DATE**

**ALTER TABLE Suspect ADD COLUMN DOB DATE;**

**ALTER TABLE Victim ADD COLUMN AGE INT;**

**ALTER TABLE Suspect ADD COLUMN AGE INT;**

**UPDATE Victim SET DOB = '1985-05-15' WHERE VictimID = 1;**

**UPDATE Victim SET DOB = '1979-09-20' WHERE VictimID = 2;**

**UPDATE Victim SET DOB = '1995-03-10' WHERE VictimID = 3;**

**UPDATE Suspect SET DOB = '1980-11-22' WHERE SuspectID = 1;**

**UPDATE Suspect SET DOB = '1990-08-30' WHERE SuspectID = 2;**

**UPDATE Suspect SET DOB = '1989-06-12' WHERE SuspectID = 3;**

**UPDATE Victim SET AGE = 39 WHERE VictimID = 1;**

**UPDATE Victim SET AGE = 45 WHERE VictimID = 2;**

**UPDATE Victim SET AGE = 28 WHERE VictimID = 3;**

**UPDATE Victim SET AGE = 39 WHERE VictimID = 1;**

**UPDATE Victim SET AGE = 45 WHERE VictimID = 2;**

**UPDATE Victim SET AGE = 28 WHERE VictimID = 3;**

**INSERTED VALUES IN TABLES:**

**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');**

**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');**

**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');**

**Q.1. Select All Open Incidents:**

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

**Q.2. Find the Total number of incidents:**

**-> SELECT COUNT(\*) AS TotalIncidents FROM CRIME;**

**Q.3. List all unique incident types:**

**-> SELECT DISTINCT(IncidentType) FROM Crime;**

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

**-> SELECT IncidentType**

**FROM Crime**

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

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

**-> SELECT Name , AGE**

**FROM suspect**

**UNION ALL**

**SELECT Name , AGE**

**FROM victim**

**ORDER BY AGE DESC;**

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

**-> SELECT AVG(AGE)**

**FROM Victim**

**UNION ALL**

**SELECT AVG(AGE)**

**FROM suspect;**

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

**-> SELECT IncidentType, COUNT(\*) AS IncidentCount**

**FROM Crime**

**WHERE Status = 'Open' GROUP BY IncidentType;**

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

**-> SELECT Name FROM Victim**

**WHERE Name LIKE '%Doe%'**

**UNION SELECT**

**Name FROM Suspect WHERE Name LIKE '%Doe%';**

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

**-> FOR STATUS = CLOSED**

**SELECT Name FROM Victim**

**JOIN Crime ON Victim.CrimeID = Crime.CrimeID**

**WHERE Status = 'Closed'**

**UNION**

**SELECT Name FROM Suspect JOIN Crime ON Suspect.CrimeID = Crime.CrimeID**

**WHERE Status = 'Closed';**

**FOR STATUS = OPEN**

**SELECT Name FROM Victim**

**JOIN Crime ON Victim.CrimeID = Crime.CrimeID**

**WHERE Status = 'Open'**

**UNION**

**SELECT Name FROM Suspect JOIN Crime ON Suspect.CrimeID = Crime.CrimeID**

**WHERE Status = 'Open';**

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

**-> SELECT DISTINCT C.IncidentType**

**FROM Crime C**

**LEFT JOIN Victim V ON C.CrimeID = V.CrimeID**

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

**WHERE (V.AGE IN (30, 35)) OR (S.AGE IN (30, 35));**

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

**-> SELECT Name FROM Victim**

**JOIN Crime ON Victim.CrimeID = Crime.CrimeID**

**WHERE IncidentType = 'Robbery'**

**UNION**

**SELECT Name FROM Suspect JOIN Crime ON Suspect.CrimeID = Crime.CrimeID**

**WHERE IncidentType = 'Robbery';**

**Q.12. List incident types with more than one open case:**

**-> SELECT IncidentType, COUNT(\*) AS CaseCount**

**FROM Crime**

**WHERE Status = 'Open'**

**GROUP BY IncidentType**

**HAVING COUNT(\*) > 1;**

**Q.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**

**JOIN Victim V ON S.Name = V.Name;**

**Q.14. Retrieve all incidents along with victim and suspect details:**

**-> SELECT C.\*, V.Name AS VictimName, S.Name AS SuspectName**

**FROM Crime C**

**LEFT JOIN Victim V ON C.CrimeID = V.CrimeID**

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

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

**-> SELECT DISTINCT C.CrimeID, C.IncidentType**

**FROM Crime C**

**JOIN Victim V ON C.CrimeID = V.CrimeID**

**JOIN Suspect S ON C.CrimeID = S.CrimeID**

**WHERE S.AGE > V.AGE;**

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

**-> SELECT Name, COUNT(\*) AS IncidentCount**

**FROM Suspect**

**GROUP BY Name**

**HAVING COUNT(\*) > 1;**

**Q.17. List incidents with no suspects involved:**

**-> SELECT C.\* FROM Crime C**

**LEFT JOIN Suspect S**

**ON C.CrimeID = S.CrimeID**

**WHERE S.SuspectID IS NULL;**

**Q.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'**

**GROUP BY CrimeID**

**HAVING SUM(CASE WHEN IncidentType = 'Homicide' THEN 1 ELSE 0 END) > 0**

**AND SUM(CASE WHEN IncidentType != 'Robbery' THEN 1 ELSE 0 END) = 0;**

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

**->**

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

**-> SELECT DISTINCT S.Name**

**FROM Suspect S**

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

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