

Coding Challenge 3

Solve the below queries:

1. Select all open incidents.

```
1310 • SELECT * FROM CRIME WHERE Status="Open";
1311
```

| 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.

```
1312 • SELECT COUNT(*) AS TotalIncidents FROM Crime;
1313
1314
```

| TotalIncidents |
|----------------|
| 3 |

3. List all unique incident types.

```
1314 • SELECT DISTINCT IncidentType FROM Crime;
1315
1316
```

| IncidentType |
|--------------|
| Robbery |
| Homicide |
| Theft |

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

```
1316 • SELECT * FROM Crime WHERE IncidentDate BETWEEN '2023-09-01' AND '2023-09-10';
1317
```

| 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.

```

1319 • SELECT * FROM Victim UNION SELECT * FROM Suspect ORDER BY Name DESC;
1320
1321

```

Result Grid

Filter Rows:

Export:

Wrap Cell Content:

| | VictimID | CrimeID | Name | ContactInfo | Injuries |
|---|----------|---------|---------------|--------------------------|------------------------------|
| ▶ | 2 | 2 | Unknown | Investigation ongoing | NULL |
| | 3 | 3 | Suspect 1 | Shoplifting suspect | Prior shoplifting arrests |
| | 1 | 1 | Robber 1 | Armed and masked robber | Previous robbery convictions |
| | 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 |

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

```

1321 • ALTER TABLE Victim ADD COLUMN Age INT;
1322 • ALTER TABLE Suspect ADD COLUMN Age INT;
1323 • INSERT INTO Victim(Age) Values
1324     (25),
1325     (30),
1326     (34);
1327 • INSERT INTO Suspect(Age) Values
1328     (25),
1329     (30),
1330     (34);
1331 • SELECT AVG(Age) AS AverageAge FROM (SELECT Age FROM Victim UNION SELECT Age FROM Suspect) AS AgeData;
1332
1333
1334

```

Result Grid

Filter Rows:

Export:

Wrap Cell Content:

| | AverageAge |
|--|------------|
| | 29.6667 |

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

```

1333 • SELECT IncidentType, COUNT(*) AS IncidentCount FROM Crime WHERE Status = 'Open' GROUP BY IncidentType;
1334
1335

```

Result Grid

Filter Rows:

Export:

Wrap Cell Content:

| | IncidentType | IncidentCount |
|---|--------------|---------------|
| ▶ | Robbery | 1 |

8. Find persons with names containing 'Doe'.

```

1335 • SELECT * From Victim Where Name Like "%Doe%";
1336

```

Result Grid

Filter Rows:

Edit:

Export/Import:

| | VictimID | CrimeID | Name | ContactInfo | Injuries | Age |
|--|----------|---------|----------|---------------------|----------------|------|
| | 1 | 1 | John Doe | johndoe@example.com | Minor injuries | NULL |
| | NULL | NULL | NULL | NULL | NULL | NULL |

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

```

1339 • SELECT Name, 'Open' AS CaseStatus
1340 FROM Victim
1341 WHERE CrimeID IN (SELECT CrimeID FROM Crime WHERE Status = 'Open')
1342 UNION
1343 SELECT Name, 'Closed' AS CaseStatus
1344 FROM Victim
1345 WHERE CrimeID IN (SELECT CrimeID FROM Crime WHERE Status = 'Closed')
1346 UNION
1347 SELECT Name, 'Open' AS CaseStatus
1348 FROM Suspect
1349 WHERE CrimeID IN (SELECT CrimeID FROM Crime WHERE Status = 'Open')
1350 UNION
1351 SELECT Name, 'Closed' AS CaseStatus
1352 FROM Suspect
1353 WHERE CrimeID IN (SELECT CrimeID FROM Crime WHERE Status = 'Closed');
1354

```

| Result Grid | | |
|-----------------------------------|------------|--|
| Filter Rows: <input type="text"/> | | |
| Export: Wrap Cell Content: | | |
| Name | CaseStatus | |
| John Doe | Open | |
| Alice Johnson | Closed | |
| Robber 1 | Open | |
| Suspect 1 | Closed | |

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

```

1355 • SELECT DISTINCT c.IncidentType
1356 FROM Crime c
1357 JOIN Victim v ON c.CrimeID = v.CrimeID AND v.Age IN (30, 35)
1358 UNION
1359 SELECT DISTINCT c.IncidentType
1360 FROM Crime c
1361 JOIN Suspect s ON c.CrimeID = s.CrimeID AND s.Age IN (30, 35);

```

| Result Grid | |
|-----------------------------------|--|
| Filter Rows: <input type="text"/> | |
| Export: Wrap Cell Content: | |
| IncidentType | |
| Robbery | |
| Theft | |

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

```
1375 • SELECT * FROM Victim WHERE CrimeID IN (SELECT CrimeID FROM Crime WHERE IncidentType = 'Robbery');
```

| Result Grid | | | | | | |
|---|---------|----------|---------------------|----------------|------|--|
| Filter Rows: | | | | | | |
| Edit: Export/Import: Wrap Cell Content: | | | | | | |
| VictimID | CrimeID | Name | ContactInfo | Injuries | Age | |
| 1 | 1 | John Doe | johndoe@example.com | Minor injuries | 30 | |
| * | NULL | NULL | NULL | NULL | NULL | |

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

```
1377 • SELECT IncidentType, COUNT(*) AS OpenCasesCount
1378 FROM Crime
1379 WHERE Status = 'Open'
1380 GROUP BY IncidentType
1381 HAVING COUNT(*) > 1;
1382
```

| Result Grid | |
|-------------------|----------------|
| Filter Rows: | |
| Export: Wrap Cell | |
| IncidentType | OpenCasesCount |

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

```
1383 • SELECT *
1384 FROM Crime c
1385 WHERE EXISTS (
1386     SELECT 1
1387     FROM Suspect s
1388     WHERE c.CrimeID = s.CrimeID
1389         AND s.Name IN (SELECT Name FROM Victim WHERE CrimeID = c.CrimeID)
1390 );
1391
```

| Result Grid | | | | | | |
|------------------------------------|--------------|--------------|----------|-------------|--------|--|
| Filter Rows: | | | | | | |
| Edit: Export/Import: Wrap Cell Cor | | | | | | |
| CrimeID | IncidentType | IncidentDate | Location | Description | Status | |
| * | NULL | NULL | NULL | NULL | NULL | |

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

```
1392 • SELECT c.*, v.Name AS VictimName, v.ContactInfo AS VictimContactInfo, v.Injuries AS VictimInjuries,
1393     s.Name AS SuspectName, s.Description AS SuspectDescription, s.CriminalHistory AS SuspectCriminalHistory
1394 FROM Crime c
1395 LEFT JOIN Victim v ON c.CrimeID = v.CrimeID
1396 LEFT JOIN Suspect s ON c.CrimeID = s.CrimeID;
```

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

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

```

1398 • SELECT c.*
1399 FROM Crime c
1400 JOIN Victim v ON c.CrimeID = v.CrimeID
1401 JOIN Suspect s ON c.CrimeID = s.CrimeID
1402 WHERE s.Age > ANY (SELECT Age FROM Victim WHERE CrimeID = c.CrimeID);
1403

```

Result Grid

Filter Rows:

Export:

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 |

16. Find suspects involved in multiple incidents:

```

1404 • SELECT Name, COUNT(*) AS IncidentCount
1405 FROM Suspect
1406 GROUP BY Name
1407 HAVING COUNT(*) > 1;
1408

```

Result Grid

Filter Rows:

Export:

Wrap Cell Content:

| Name | IncidentCount |
|------|---------------|
|------|---------------|

17. List incidents with no suspects involved.

```

1409 • SELECT *
1410 FROM Crime
1411 WHERE CrimeID NOT IN (SELECT CrimeID FROM Suspect);
1412

```

Result Grid

Filter Rows:

Edit:

Export

| | CrimeID | IncidentType | IncidentDate | Location | Description | Status |
|---|---------|--------------|--------------|----------|-------------|--------|
| * | NULL | NULL | NULL | NULL | NULL | NULL |

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

```

1413 • SELECT *
1414 FROM Crime
1415 WHERE IncidentType = 'Homicide' AND CrimeID IN (SELECT CrimeID FROM Crime WHERE IncidentType = 'Robbery')
1416 OR IncidentType = 'Robbery' AND CrimeID NOT IN (SELECT CrimeID FROM Crime WHERE IncidentType = 'Homicide');
1417

```

Result Grid

Filter Rows:

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 |
| * | 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.

```

1418 • SELECT c.*, COALESCE(s.Name, 'No Suspect') AS SuspectName, COALESCE(s.Description, '') AS SuspectDescription,
1419 COALESCE(s.CriminalHistory, '') AS SuspectCriminalHistory
1420 FROM Crime c
1421 LEFT JOIN Suspect s ON c.CrimeID = s.CrimeID;
1422
1423

```

| CrimeID | IncidentType | IncidentDate | Location | Description | Status | SuspectName | SuspectDescription | SuspectCriminalHistory |
|---------|--------------|--------------|-------------------------|--------------------------------------|---------------------|-------------|-------------------------|-----------------------------|
| 1 | Robbery | 2023-09-15 | 123 Main St, Cityville | Armed robbery at a convenience store | Open | Robber 1 | Armed and masked robber | Previous robbery conviction |
| 2 | Homicide | 2023-09-20 | 456 Elm St, Townsville | Investigation into a murder case | Under Investigation | Unknown | Investigation ongoing | |
| 3 | Theft | 2023-09-10 | 789 Oak St, Villagetown | Shoplifting incident at a mall | Closed | Suspect 1 | Shoplifting suspect | Prior shoplifting arrests |

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

```

1423 • SELECT DISTINCT s.SuspectID, s.Name
1424 FROM Suspect s
1425 JOIN Crime c ON s.CrimeID = c.CrimeID
1426 WHERE c.IncidentType IN ('Robbery', 'Assault');

```

| SuspectID | Name |
|-----------|----------|
| 1 | Robber 1 |