

### Coding challenge-3

Name: Athish Bhasskar

1. Select all open incidents

Answer:

```
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

2. Find the total number of incidents.

Answer:

```
select count(CrimeID) as total_incidents from Crime;
```

```
mysql> select count(CrimeID) as total_incidents from Crime;
+-----+
| total_incidents |
+-----+
|                3 |
+-----+
1 row in set (0.04 sec)
```

3. List all unique incident types

Answer

```
select distinct(IncidentType) from Crime;
```

```
mysql> select distinct(IncidentType) from Crime;
+-----+
| IncidentType |
+-----+
| Robbery      |
| Homicide     |
| Theft        |
+-----+
3 rows in set (0.00 sec)
```

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

Answer

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 |
+-----+-----+-----+-----+-----+-----+
1 row in set (0.00 sec)
```

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

Answer

select name,age from Victim order by age desc;

```
mysql> select name,age from Victim order by age desc;
+-----+-----+
| name | age |
+-----+-----+
| Jane Smith | 42 |
| Alice Johnson | 35 |
| John Doe | 30 |
+-----+-----+
3 rows in set (0.00 sec)
```

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

Answer

select avg(age) as avg\_age from victim;

```
mysql> select avg(age) as avg_age from victim;
+-----+
| avg_age |
+-----+
| 35.6667 |
+-----+
1 row in set (0.00 sec)
```

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

Answer

select incidenttype,count(\*) as incident\_count from crime where status="open" group by incidenttype;

```
mysql> select incidenttype,count(*) as incident_count from crime where status="open" group by incidenttype;
+-----+-----+
| incidenttype | incident_count |
+-----+-----+
| Robbery      | 1              |
+-----+-----+
1 row in set (0.00 sec)
```

8. Find persons with names containing 'Doe'.

Answer

select name from victim where name like '%doe%';

```
mysql> select name from victim where name like '%doe%';
+-----+
| name      |
+-----+
| John Doe  |
+-----+
```

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

Answer

select name,status from victim v join crime c on v.crimeID=c.crimeID where status="open" or status="closed";

```
mysql> select name,status from victim v join crime c on v.crimeID=c.crimeID where status="open" or status="closed";
+-----+-----+
| name      | status |
+-----+-----+
| John Doe  | Open   |
| Alice Johnson | Closed |
+-----+-----+
```

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

Answer

select incidenttype, age from crime c join victim v on v.crimeID=c.crimeID  
where age=30 or age=35;

```
mysql> select incidenttype, age from crime c join victim v on v.crimeID=c.crimeID where age=30 or age=35;
+-----+-----+
| incidenttype | age |
+-----+-----+
| Robbery      | 30  |
| Theft        | 35  |
+-----+-----+
2 rows in set (0.00 sec)
```

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

Answer

select v.name as victimname,s.name as suspectname, incidenttype from crime  
c join victim v on c.crimeID=v.crimeID join suspect s on s.crimeid=c.crimeid  
where incidenttype="robbery";

```
mysql> select v.name as victimname,s.name as suspectname, incidenttype from crime c join victim v on c.crimeID=v.crimeID join suspect s on s.crimeid=c.crimeid where incidenttype="robbery";
+-----+-----+-----+
| victimname | suspectname | incidenttype |
+-----+-----+-----+
| John Doe   | Robber 1    | Robbery      |
| robber 1   | suspect 1   | robbery      |
+-----+-----+-----+
2 rows in set (0.00 sec)
```

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

Answer

select incidenttype, count(\*) from crime where status="open" group by  
incidenttype having count(\*)>1;

```
mysql> select incidenttype, count(*) from crime where status="open" group by incidenttype having count(*)>1;
+-----+-----+
| incidenttype | count(*) |
+-----+-----+
| Robbery      | 2        |
+-----+-----+
1 row in set (0.00 sec)
```

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

Answer

```
select c.* from crime c join suspect s on c.crimeID=s.crimeID join victim v on v.name=s.name and v.crimeID <> s.crimeID;
```

```
mysql> select c.* from crime c join suspect s on c.crimeID=s.crimeID join victim v on v.name=s.name and v.crimeID <> s.crimeID;
+-----+-----+-----+-----+-----+-----+
| CrimeID | IncidentType | IncidentDate | Location | Description | Status |
+-----+-----+-----+-----+-----+-----+
| 1 | Robbery | 2023-09-15 | 123 Main St, Cityville | Armed robbery at a convenience store | Open |
+-----+-----+-----+-----+-----+-----+
1 row in set (0.00 sec)
```

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

Answer

```
select incidenttype,v.*,s.* from crime c join suspect s on c.crimeID=s.crimeID join victim v on v.crimeID=c.crimeID;
```

```
mysql> select incidenttype,v.*,s.* from crime c join suspect s on c.crimeID=s.crimeID join victim v on v.crimeID=c.crimeID;
+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+
| incidenttype | VictimID | CrimeID | Name | ContactInfo | Injuries | age | SuspectID | CrimeID | Name | Description | CriminalHistory | age |
+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+
| Robbery | 1 | 1 | John Doe | johndoe@example.com | Minor injuries | 30 | 1 | 1 | Robber 1 | Armed and masked robber | Previous robbery convictions | 30 |
| Homicide | 2 | 2 | Jane Smith | janesmith@example.com | Deceased | 42 | 2 | 2 | Unknown | Investigation ongoing | NULL | 33 |
| Theft | 3 | 3 | Alice Johnson | alicejohnson@example.com | None | 35 | 3 | 3 | Suspect 1 | Shoplifting suspect | Prior shoplifting arrests | 29 |
+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+
3 rows in set (0.00 sec)
```

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

Answer

```
select c.* from crime c join suspect s on c.crimeid=s.suspectid join victim v on v.crimeid=c.crimeid where v.age>(select max(age) from suspect);
```

```
mysql> select c.* from crime c join suspect s on c.crimeid=s.suspectid join victim v on v.crimeid=c.crimeid where v.age>(select max(age) from suspect);
+-----+-----+-----+-----+-----+-----+
| CrimeID | IncidentType | IncidentDate | Location | Description | Status |
+-----+-----+-----+-----+-----+-----+
| 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 |
+-----+-----+-----+-----+-----+-----+
2 rows in set (0.00 sec)
```

16. Find suspects involved in multiple incidents:

Answer

select name,count(suspectID) from suspect group by name having count(suspectID)>1;

```
mysql> select name,count(suspectID) from suspect group by name having count(suspectID)>1;
+-----+-----+
| name      | count(suspectID) |
+-----+-----+
| Suspect 1 | 2                |
+-----+-----+
1 row in set (0.00 sec)
```

17. List incidents with no suspects involved.

Answer

select c.\* from crime c join suspect s on c.crimeID=s.crimeID where s.name="unknown";

```
mysql> select c.* from crime c join suspect s on c.crimeID=s.crimeID where s.name="unknown";
+-----+-----+-----+-----+-----+-----+
| CrimeID | IncidentType | IncidentDate | Location                | Description                | Status |
+-----+-----+-----+-----+-----+-----+
| 2       | Homicide     | 2023-09-20   | 456 Elm St, Townsville | Investigation into a murder case | Under Investigation |
+-----+-----+-----+-----+-----+-----+
1 row 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'

Answer

select \* from crime where incidenttype="homicide" or incidenttype="robbery";

```
mysql> 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 |
| 4       | robbery     | 2023-09-11   | 124 acb street         | open                       |         |
+-----+-----+-----+-----+-----+-----+
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.

Answer:

```
select c.crimeid,incidenttype,c.description,name as suspectname from crime c
join suspect s on c.crimeid=s.crimeid;
```

```
mysql> select c.crimeid,incidenttype,c.description,name as suspectname from crime c join suspect s on c.crimeid=s.crimeid;
+-----+-----+-----+-----+
| crimeid | incidenttype | description | suspectname |
+-----+-----+-----+-----+
| 1 | Robbery | Armed robbery at a convenience store | Robber 1 |
| 2 | Homicide | Investigation into a murder case | Unknown |
| 3 | Theft | Shoplifting incident at a mall | Suspect 1 |
| 4 | robbery | mall | suspect 1 |
+-----+-----+-----+-----+
4 rows in set (0.00 sec)
```

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

Answer

```
select suspectid,s.crimeid,name as suspectname, incidenttype from suspect s
join crime c on c.crimeid=s.crimeid where incidenttype="robbery" or
incidenttype="assault";
```

```
mysql> select suspectid,s.crimeid,name as suspectname, incidenttype from suspect s join crime c on c.crimeid=s.crimeid where incidenttype="robbery" or incidenttype="assault";
+-----+-----+-----+-----+
| suspectid | crimeid | suspectname | incidenttype |
+-----+-----+-----+-----+
| 1 | 1 | Robber 1 | Robbery |
| 4 | 4 | suspect 1 | robbery |
+-----+-----+-----+-----+
2 rows in set (0.00 sec)
```