**CRIME MANAGEMENT**

1. Select all open incidents.

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 |

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

1 row in set (0.00 sec)

2. Find the total number of incidents.

mysql> select count(\*) total\_no\_incidents from Crime;

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

| total\_no\_incidents |

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

| 3 |

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

1 row in set (0.01 sec)

3. List all unique incident types.

mysql> select distinct IncidentType from Crime;

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

| IncidentType |

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

| Robbery |

| Homicide |

| Theft |

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

3 rows in set (0.01 sec)

4. Retrieve incidents that occurred 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.

mysql> select v.Name,v.Age,s.Name,s.Age from Victim v

-> join Suspect s on v.CrimeID=s.CrimeID

-> order by v.Age desc , s.Age desc;

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

| Name | Age | Name | Age |

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

| John Doe | 35 | Robber 1 | 25 |

| Jane Smith | 28 | Unknown | 35 |

| Alice Johnson | 22 | Suspect 1 | 45 |

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

3 rows in set (0.00 sec)

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

mysql> select avg(Age) AverageAge from (select Age from Victim union all select Age from Suspect ) as total\_people;

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

| AverageAge |

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

| 31.6667 |

|  |
| --- |
|  |

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

mysql> select IncidentType, count(\*) from Crime where status='Open' group by IncidentType;

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

| IncidentType | count(\*) |

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

| Robbery | 1 |

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

1 row in set (0.01 sec)

8. Find persons with names containing 'Doe'.

mysql> select Name from Victim where Name like '%Doe%';

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

| Name |

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

| John Doe |

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

1 row in set (0.00 sec)

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

select v.Name,c.Status from Victim v join Crime c on v.CrimeID = c.CrimeID where c.Status = 'Open' and 'Close' union all

select s.Name,c.Status from

Suspect s join Crime c on s.CrimeID = c.CrimeID where c.Status = 'Open' and 'Close' ;

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

mysql> select distinct c.IncidentType from Crime c

-> join Victim v on c.CrimeID = v.CrimeID

-> where v.Age in (30,35)

-> union

-> select distinct c.IncidentType from Crime c

-> join Suspect s on c.CrimeID = s.CrimeID

-> where s.Age in (30,35);

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

| IncidentType |

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

| Robbery |

| Homicide |

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

2 rows in set (0.00 sec)

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

mysql> select distinct v.name from Victim v

-> join Crime c on v.CrimeID=c.CrimeID

-> where c.IncidentType='Robbery'

-> union

-> select Distinct s.Name from Suspect s

-> join Crime c on s.CrimeID=c.CrimeID

-> where c.IncidentType='Robbery';

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

| name |

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

| John Doe |

| Robber 1 |

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

2 rows in set (0.00 sec)

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

mysql> select IncidentType from Crime where Status='Open' group by IncidentType having count(\*)>1;

Empty set (0.01 sec)

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

mysql> select distinct c.\* from Crime c

-> join Suspect s on c.CrimeID=s.CrimeID

-> join Victim v on s.Name=v.Name and s.CrimeID <> v.CrimeID;

Empty set (0.01 sec)

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

mysql> select c.\* , v.Name Victim\_name,v.Age Victim\_age , v.VictimID , s.Name Suspect\_name,s.Age Suspect\_age ,s.SuspectID 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 | Description | Status | Victim\_name | Victim\_age | VictimID | Suspect\_name | Suspect\_age | SuspectID |

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

| 1 | Robbery | 2023-09-15 | 123 Main St, Cityville | Armed robbery at a convenience store | Open | John Doe | 35 | 1 | Robber 1 | 25 | 1 |

| 2 | Homicide | 2023-09-20 | 456 Elm St, Townsville | Investigation into a murder case | Under

Investigation | Jane Smith | 28 | 2 | Unknown | 35 | 2 |

| 3 | Theft | 2023-09-10 | 789 Oak St, Villagetown | Shoplifting incident at a mall | Closed | Alice Johnson | 22 | 3 | Suspect 1 | 45 | 3 |

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

3 rows in set (0.00 sec)

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

mysql> select distinct c.\* 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 | 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:

mysql> select Name,count(\*) from Suspect group by Name having count(\*)>1;

Empty set (0.00 sec)

17. List incidents with no suspects involved.

mysql> select c.\* from Crime c left join Suspect s on c.CrimeID=s.CrimeID where s.SuspectID is null;

Empty 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'.

mysql> select \* from Crime where IncidentType='Homicide'

-> and not exists (select 1 from Crime where IncidentType not in ('Homicide','Robbery'));

Empty set (0.01 sec)

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

mysql> select c.CrimeID,c.IncidentType,c.status,coalesce(s.Name,'No Suspect') as SuspectName

-> from Crime c

-> left join Suspect s on c.CrimeID =s.CrimeID;

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

| CrimeID | IncidentType | status | SuspectName |

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

| 1 | Robbery | Open | Robber 1 |

| 2 | Homicide | Under

Investigation | Unknown |

| 3 | Theft | Closed | Suspect 1 |

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

3 rows in set (0.00 sec)

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

mysql> select Name from Suspect s join Crime c on s.CrimeID=c.CrimeID where c.IncidentType in ('Robbery','Assault');

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

| Name |

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

| Robber 1 |

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

1 row in set (0.00 sec)