

```
create database Crime__Management;  
use Crime__Management;
```

```
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)  
);
```

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');

```
mysql> 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 | Under Investigation |
| 3 | Theft | 2023-09-10 | 789 Oak St, Villagetown | Shoplifting incident at a mall | Closed |
+-----+-----+-----+-----+-----+-----+
3 rows in set (0.00 sec)
```

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');

```
mysql> 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 |
+-----+-----+-----+-----+-----+
3 rows in set (0.00 sec)
```

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');

```
mysql> 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

```
3 rows in set (0.00 sec)
```

-- 1. Select all open incidents

select * from Crime where Status='Open';

```
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

select count(*) as Total_Incidents from Crime;

```
+-----+
| Total_Incidents |
+-----+
|                3 |
+-----+
1 row in set (0.00 sec)
```

-- 3. List all unique incident types

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'

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

alter table Victim add age int;

desc Victim;

update Victim set age='30' where VictimID='1';

update Victim set age='40' where VictimID='2';

update Victim set age='38' where VictimID='3';

select * from Victim;

select * from Victim order by age desc;

```

+-----+-----+-----+-----+-----+-----+
| VictimID | CrimeID | Name | ContactInfo | Injuries | age |
+-----+-----+-----+-----+-----+-----+
| 2 | 2 | Jane Smith | janesmith@example.com | Deceased | 40 |
| 3 | 3 | Alice Johnson | alicejohnson@example.com | None | 38 |
| 1 | 1 | John Doe | johndoe@example.com | Minor injuries | 30 |
+-----+-----+-----+-----+-----+-----+
3 rows in set (0.00 sec)

```

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

```
select avg(age) as averag_age from Victim;
```

```
+-----+
| averag_age |
+-----+
|    36.0000 |
+-----+
1 row in set (0.00 sec)
```

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

```
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'

```
select * from Victim
```

```
where name like '%Doe';
```

```

+-----+-----+-----+-----+-----+-----+
| VictimID | CrimeID | Name   | ContactInfo      | Injuries      | age |
+-----+-----+-----+-----+-----+-----+
|         1 |         1 | John Doe | johndoe@example.com | Minor injuries | 30 |
+-----+-----+-----+-----+-----+-----+
1 row in set (0.00 sec)

```

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

```

select Victim.name
from Victim join Crime
on Crime.CrimeID=Victim.CrimeID
where Crime.status in ('open','closed');

```

```

+-----+
| name   |
+-----+
| John Doe |
| Alice Johnson |
+-----+
2 rows in set (0.00 sec)

```

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

```

select IncidentType
from Victim join Crime
on Victim.CrimeID=Crime.CrimeID
where age in(30,35);

```

```

+-----+
| IncidentType |
+-----+
| Robbery      |
+-----+
1 row in set (0.00 sec)

```

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

```
select name
from Crime join Victim on Victim.CrimeID = Crime.CrimeID
where IncidentType='Robbery';
```

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

-- 12. 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)
```

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

```
select * from Crime
join (select CrimeID
from Suspect where exists (select 1
from Victim where Victim.CrimeID=Suspect.CrimeID
and Victim.name=Suspect.name)
)as Subquery on Crime.CrimeID = Subquery.CrimeID;
```

```
Empty set (0.00 sec)
```

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

```
SELECT crime.*,
```

Victim.Name AS VictimName,Victim.VictimID, Victim.ContactInfo, Victim.Injuries,
 Suspect.Name AS SuspectName,Suspect.SuspectID, Suspect.Description, Suspect.CriminalHistory
 from Crime
 join Victim on Victim.CrimeID=Crime.CrimeID
 join Suspect on Suspect.CrimeID=Crime.CrimeID

CrimeID	IncidentType	IncidentDate	Location	Description	Status	VictimName	VictimID
1	Robbery	2023-09-15	123 Main St, Cityville	Armed robbery at a convenience store	Open	John Doe	1
2	Homicide	2023-09-20	456 Elm St, Townsville	Investigation into a murder case	Under Investigation	Jane Smith	2
3	Theft	2023-09-10	789 Oak St, Villagetown	Shoplifting incident at a mall	Closed	Alice Johnson	3

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

```
alter table Suspect add age int;

desc Suspect;

update Suspect set age='37' where SuspectID='1';
update Suspect set age='46' where SuspectID='2';
update Suspect set age='35' where SuspectID='3';

select * from Suspect
```

SuspectID	CrimeID	Name	Description	CriminalHistory	age
1	1	Robber 1	Armed and masked robber	Previous robbery convictions	37
2	2	Unknown	Investigation ongoing	NULL	46
3	3	Suspect 1	Shoplifting suspect	Prior shoplifting arrests	35

3 rows in set (0.00 sec)

```
select * from Crime

join Victim on Crime.CrimeID=Victim.CrimeID

join Suspect on Crime.CrimeID=Suspect.CrimeID

where Suspect.age > Victim.age;
```


CrimeID	IncidentType	IncidentDate	Location	Description	Status	VictimID	CrimeID	Name
ContactInfo	Injuries	age	SuspectID	CrimeID	Name	Description	CriminalHistory	age
1	Robbery	2023-09-15	123 Main St, Cityville	Armed robbery at a convenience store	Open	1	1	John D
oe johndoe@example.com	Minor injuries	30	1	1	Robber 1	Armed and masked	Previous robbery convictions	37
2	Homicide	2023-09-20	456 Elm St, Townsville	Investigation into a murder case	Under	2	2	Unknown
Investigation	2	2	Jane Smith	janesmith@example.com	Deceased	40	2	Investigation ongoing
NULL		46						

2 rows in set (0.00 sec)

-- 16. Find suspects involved in multiple incidents.

```
select Name, count(distinct CrimeID) AS IncidentCount
from Suspect
group by Name
having count(distinct CrimeID) > 1;
```

Empty set (0.00 sec)

-- 17. List incidents with no suspects involved

```
select * from crime
left join Suspect on Crime.CrimeID = Suspect.CrimeID
WHERE Suspect.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'

```
select Crime.*
from Crime
where exists (
select 1
from Crime
where CrimeID = Crime.CrimeID and IncidentType = 'Homicide'
)
```

```

and not exists (
select 1
from Crime
where CrimeID = Crime.CrimeID and IncidentType != '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.

```

SELECT Crime.*, COALESCE(Suspect.Name, 'No Suspect') AS SuspectName
FROM Crime
LEFT JOIN Suspect ON Crime.CrimeID = Suspect.CrimeID;

```

CrimeID	IncidentType	IncidentDate	Location	Description
1	Robbery	2023-09-15	123 Main St, Cityville	Armed robbery at a convenience store
2	Homicide	2023-09-20	456 Elm St, Townsville	Investigation into a murder case
	Unknown			
3	Theft	2023-09-10	789 Oak St, Villagetown	Shoplifting incident at a mall

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

```

SELECT DISTINCT Name
FROM Suspect
WHERE CrimeID IN (
SELECT CrimeID
FROM Crime
WHERE IncidentType IN ('Robbery', 'Assault')
);

```

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