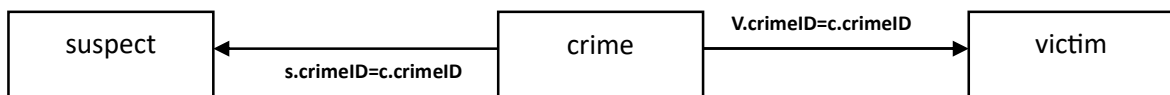


### CODING CHALLENGE SQL

NAME	YALINI SHREE P V
SERIAL NO.	31
TOPIC	Crime Management Shema DDL and DML
DATE	10.04.2024

### ER Diagram for reference



### SQL code with outputs

```
create database crimedb;
```

```
use crimedb;
```

```
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),  
age INT,  
FOREIGN KEY (CrimeID) REFERENCES Crime(CrimeID) );
```

```
CREATE TABLE Suspect (  
  SuspectID INT PRIMARY KEY,  
  CrimeID INT,  
  Name VARCHAR(255),  
  Description TEXT,  
  CriminalHistory TEXT,  
  age INT,  
  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');
```

```
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

```
INSERT INTO Victim (VictimID, CrimeID, Name, ContactInfo, Injuries,age)
```

```
VALUES
```

```
(1, 1, 'John Doe', 'johndoe@example.com', 'Minor injuries',30),
```

```
(2, 2, 'Jane Smith', 'janesmith@example.com', 'Deceased',68),
```

```
(3, 3, 'Alice Johnson', 'alicejohnson@example.com', 'None',11);
```

```
select* from victim;
```

```
+-----+-----+-----+-----+-----+-----+
| VictimID | CrimeID | Name      | ContactInfo      | Injuries  | age |
+-----+-----+-----+-----+-----+-----+
| 1 | 1 | John Doe | johndoe@example.com | Minor injuries | 30 |
| 2 | 2 | Jane Smith | janesmith@example.com | Deceased | 68 |
| 3 | 3 | Alice Johnson | alicejohnson@example.com | None | 11 |
+-----+-----+-----+-----+-----+-----+
```

```
INSERT INTO Suspect (SuspectID, CrimeID, Name, Description, CriminalHistory,age)
```

```
VALUES
```

```
(1, 1, 'Robber 1', 'Armed and masked robber', 'Previous robbery convictions',43),
```

```
(2, 2, 'Unknown', 'Investigation ongoing', NULL,27),
```

```
(3, 3, 'Suspect 1', 'Shoplifting suspect', 'Prior shoplifting arrests',35);
```

```
select* from suspect;
```

```
+-----+-----+-----+-----+-----+-----+
| SuspectID | CrimeID | Name      | Description      | CriminalHistory | age |
+-----+-----+-----+-----+-----+-----+
| 1 | 1 | Robber 1 | Armed and masked robber | Previous robbery convictions | 43 |
| 2 | 2 | Unknown | Investigation ongoing | NULL | 27 |
| 3 | 3 | Suspect 1 | Shoplifting suspect | Prior shoplifting arrests | 35 |
+-----+-----+-----+-----+-----+-----+
```

## Solve the below queries:

### 1. Select all open incidents.

```
select *
```

```
from crime
```

```
where status = 'open';
```

1	Robbery	2023-09-15	123 Main St, Cityville	Armed robbery at a convenience store	Open
---	---------	------------	------------------------	--------------------------------------	------

### 2. Find the total number of incidents.

```
select incidenttype,count(*)
```

```
from crime
```

```
group by incidenttype;
```

Homicide	1
----------	---

Robbery	1
---------	---

Theft	1
-------	---

```
select count(*)
```

```
from crime; -- 3
```

### 3. List all unique incident types.

```
select distinct incidenttype
```

```
from crime;
```

Robbery
---------

Homicide
----------

Theft
-------

### 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';
```

3	Theft	2023-09-10	789 Oak St, Villagetown	Shoplifting incident at a mall	Closed
---	-------	------------	-------------------------	--------------------------------	--------

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

```
select name,age
from suspect
order by age DESC;
```

Robber 1	43
Suspect 1	35
Unknown	27

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

```
select AVG(age)
from suspect; -- 35.000
```

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

```
select incidenttype,count(*)
from crime
where status='open';
```

Robbery	1
---------	---

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

```
select *
from victim
where Name like '%doe%';
```

1	1	John Doe	johndoe@example.com	Minor injuries	30
---	---	----------	---------------------	----------------	----

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

```
select V.Name AS VictimName, S.Name AS SuspectName,c.status
from Crime c
join Victim v ON V.CrimeID = C.CrimeID
join Suspect s ON S.CrimeID = C.CrimeID
where C.Status = 'open' or C.Status= 'closed' ;
```

John Doe	Robber 1	Open
Alice Johnson	Suspect 1	Closed

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

```
select v.name as victimname,c.incidenttype,v.age
from Crime c
join Victim v ON V.CrimeID = C.CrimeID
where v.age = '30' or v.age = '35' ;
```

John Doe	Robbery	30
----------	---------	----

```
select s.name as suspectname,c.incidenttype,s.age
from Crime c
join Suspect s ON S.CrimeID = C.CrimeID
where s.age = '30' or s.age = '35' ;
```

Suspect 1	Theft	35
-----------	-------	----

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

```
select V.Name AS VictimName, S.Name AS SuspectName
from Crime c
join Victim v ON V.CrimeID = C.CrimeID
join Suspect s ON S.CrimeID = C.CrimeID
where C.IncidentType = 'robbery';
```

John Doe	Robber 1
----------	----------

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

```
select incidenttype, count(*) as number_of_cases
from crime
where status='open'
group by incidenttype
having number_of_cases >1; -- null
```

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

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

```
select *
```

from Crime

```
join Victim ON Crime.CrimeID = Victim.CrimeID
```

```
join Suspect ON Crime.CrimeID = Suspect.CrimeID;
```

1	Robbery		2023-09-15		123 Main St, Cityville		Armed robbery at a convenience				
	Open	1	1	John Doe	johndoe@example.com		Minor injuries		30	1	
	1	Robber	1	Armed and masked robber		Previous robbery convictions		43			
2	Homicide		2023-09-20		456 Elm St, Townsville		Investigation into a murder case				
	Under Investigation		2	2	Jane Smith	janesmith@example.com					
	Deceased		68	2	2	Unknown	Investigation ongoing		27		
3	Theft	2023-09-10		789 Oak St, Villagetown		Shoplifting incident at a mall				Closed	3
	3	Alice Johnson		alicejohnson@example.com		None	11	3	3		
	Suspect 1		Shoplifting suspect		Prior shoplifting arrests		35				

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

```
select V.Name AS VictimName,v.age as victimage, S.Name AS SuspectName,s.age as
suspectage,incidenttype
```

from Crime c

```
join Victim v ON V.CrimeID = C.CrimeID
```

```
join Suspect s ON S.CrimeID = C.CrimeID
```

where  $s.age > v.age$  ;

John Doe	30	Robber 1	43	Robbery
Alice Johnson	11	Suspect 1	35	Theft

### 16. Find suspects involved in multiple incidents

```
select S.Name AS SuspectName,COUNT(C.CrimeID) AS NumberOfIncidents
```

from crime c

```
join suspect s ON s.CrimeID = C.CrimeID
```

```
group BY S.Name
```

```
having NumberOfIncidents > 1;
```

nill

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

```
select *  
from Crime c  
join Suspect s ON s.CrimeID = c.CrimeID  
where S.SuspectID IS NULL;  
nill
```

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

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

```
select c.incidenttype,s.name as suspectname  
from crime c  
join suspect s on s.crimeid=c.crimeid;  
Robbery      Robber 1  
Homicide      Unknown  
Theft         Suspect 1
```

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

```
select s.name as suspectname,c.incidenttype  
from crime c  
join suspect s on s.crimeid=c.crimeid  
where c.incidenttype='robbery'or c.incidenttype='assault';  
Robber 1      Robbery
```