

# Coding Challenge SQL

## Crime Management Shema DDL and DML

Questions, Queries and Output:

1. Select all open incidents.

➔ 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
4	Assault	2023-09-05	321 Pine St, Cityville	Bar fight resulting in injuries	Open
6	Homicide	2023-09-07	987 Cedar St, Villagetown	Gang-related shooting	Open
8	Robbery	2023-09-18	753 Spruce St, Townsville	Jewelry store heist	Open
10	Assault	2023-09-30	123 Mondo St, Cityville	Metro Station altercation	Open

2. Find the total number of incidents.

➔ select count(crimeid) as NoOfIncidents  
➔ from crime;

NoOfIncidents
10

3. List all unique incident types.

➔ select distinct(incidenttype)  
➔ from crime;

incidenttype
Robbery
Homicide
Theft
Assault
Burglary

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
4	Assault	2023-09-05	321 Pine St, Cityville	Bar fight resulting in injuries	Open
5	Robbery	2023-09-02	654 Maple St, Townsville	Bank robbery	Under Investigation
6	Homicide	2023-09-07	987 Cedar St, Villagetown	Gang-related shooting	Open
7	Burglary	2023-09-08	159 Rasengan Ave, Cityville	Blue Lily flower Theft	Closed

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

- ➔ select name, Age
- ➔ from victim
- ➔ union all
- ➔ select name, Age
- ➔ from suspect
- ➔ where age is not null
- ➔ order by age desc;

name	Age
John Doe	50
John Doe	45
Burglar X	45
Daniel Harris	42
Michael Davis	40
John Dillinger	40
Robber 2	38
Robert Brown	35
Jennifer Lee	35
Devin Pratt	35
Jane Smith	35
Jane Smith	32
Robber 3	32
Sarah Miller	30
David Alaba	30
Robber 1	30
Gang Member B	30
Street Fighter	29
Alice Johnson	28
Gang Membe...	28
Muzan Tanjiro	25
Billy Smith	25
Jessica Taylor	22

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

→ select avg(Age) as AvgAge from

→ (select age

→ from victim

→ union all

→ select age

→ from suspect

→ where age is not null)

→ as Ages;

AvgAge
32.7600

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

→ select incidenttype, count(incidenttype) as NoOfIncidents

→ from crime

→ where status= 'open'

→ group by incidenttype;

incidenttype	NoOfIncidents
Robbery	2
Assault	2
Homicide	1

8. Find persons with names containing 'Doe'.

→ select name

→ from victim

→ where name like '%doe%'

→ union all

→ select name

→ from suspect

→ where name like '%doe%';

name
John Doe
John Doe

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

```
→ select v.name, c.status
→ from victim v
→ join crime c on v.crimeid=c.crimeid
→ where c.status in('open','closed')
→
→ union all
→ select s.name, c.status
→
→ from suspect s
→ join crime c on s.crimeid=c.crimeid
→ where c.status in('open','closed');
```

name	status
John Doe	Open
Jennifer Lee	Open
Alice Johnson	Closed
Robert Brown	Open
Daniel Harris	Open
Michael Davis	Open
Muzan Tanjiro	Closed
John Doe	Open
David Alaba	Open
Robber 1	Open
Robber 3	Open
Suspect 1	Closed
Devin Pratt	Open
Billy Smith	Open
Gang Member A	Open
Gang Member B	Open
Burglar X	Closed
Robber 2	Open
Student	Open

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

```
→ select c.incidenttype, v.age
→ from crime c
→ join victim v on c.crimeid=v.crimeid
→ where age in (30,35)
→
→ union
→
→ select c.incidenttype, s.age
→ from crime c
```

- join suspect s on c.crimeid=s.crimeid
- where age in (30,35);

incidenttype	age
Assault	35
Robbery	30
Assault	30
Robbery	35
Homicide	30

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

- select v.name, 'Victim' as Role
- from victim v
- join crime c on v.crimeid=c.crimeid
- where c.incidenttype= 'Robbery'
- 
- union
- 
- select s.name, 'Suspect' as Role
- from suspect s
- join crime c on s.crimeid=c.crimeid
- where c.incidenttype= 'Robbery';

name	Role
John Doe	Victim
Jennifer Lee	Victim
Sarah Miller	Victim
Robber 1	Suspect
Robber 3	Suspect
John Dillinger	Suspect
Jane Smith	Suspect
Robber 2	Suspect

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

- select incidenttype, count(\*) as OpenCase
- from crime

- where status='open'
- group by incidenttype
- having opencase>1;

incidenttype	OpenCase
Robbery	2
Assault	2

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

- select c.\*
- from crime c
- join suspect s on c.crimeid=s.crimeid
- where s.name in
- (select name from victim);

CrimeID	IncidentType	IncidentDate	Location	Description	Status
5	Robbery	2023-09-02	654 Maple St, Townsville	Bank robbery	Under Investigation

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

- select c.\*,v.\*,s.\*
- 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	VictID	CrimID	Name	ContactInfo	Injuries	Age	SuID	CrimID	Name	Description	CrimID	Age
1	Robbery	2023-09-15	123 Main St, ...	Armed robbery...	Open	1	1	John Doe	johndoe@example.com	Minor injuries	45	1	1	Robber 1	Armed...	Pre...	30
1	Robbery	2023-09-15	123 Main St, ...	Armed robbery...	Open	1	1	John Doe	johndoe@example.com	Minor injuries	45	12	1	Robber 3	Getaw...	Pre...	32
1	Robbery	2023-09-15	123 Main St, ...	Armed robbery...	Open	11	1	Jennifer Lee	jenniferl@example.com	Minor injuries	35	1	1	Robber 1	Armed...	Pre...	30
1	Robbery	2023-09-15	123 Main St, ...	Armed robbery...	Open	11	1	Jennifer Lee	jenniferl@example.com	Minor injuries	35	12	1	Robber 3	Getaw...	Pre...	32
2	Homicide	2023-09-20	456 Elm St, T...	Investigation i...	Under In...	2	2	Jane Smith	jan smith@example....	Deceased	32	2	2	Unknown	Invest...	NULL	NULL
3	Theft	2023-09-10	789 Oak St, ...	Shoplifting inci...	Closed	3	3	Alice Joh...	alicejohnson@exampl...	None	28	3	3	Suspe...	Shoplif...	Prio...	22
4	Assault	2023-09-05	321 Pine St, ...	Bar fight result...	Open	4	4	Robert Br...	robertb@example.com	Broken nose	35	4	4	Devin ...	Known...	Prio...	35
4	Assault	2023-09-05	321 Pine St, ...	Bar fight result...	Open	4	4	Robert Br...	robertb@example.com	Broken nose	35	6	4	Billy S...	Bar pa...	No ...	25
4	Assault	2023-09-05	321 Pine St, ...	Bar fight result...	Open	12	4	Daniel Ha...	danielh@example.com	Broken arm	42	4	4	Devin ...	Known...	Prio...	35
4	Assault	2023-09-05	321 Pine St, ...	Bar fight result...	Open	12	4	Daniel Ha...	danielh@example.com	Broken arm	42	6	4	Billy S...	Bar pa...	No ...	25
5	Robbery	2023-09-02	654 Maple St...	Bank robbery	Under In...	5	5	Sarah Miller	sarahm@example.com	None	30	5	5	John D...	Bank r...	Mul...	40
5	Robbery	2023-09-02	654 Maple St...	Bank robbery	Under In...	5	5	Sarah Miller	sarahm@example.com	None	30	13	5	Jane S...	Bank e...	Em...	35
6	Homicide	2023-09-07	987 Cedar St...	Gang-related s...	Open	6	6	Michael D...	michaeld@example.com	Gunshot wo...	40	7	6	Gang ...	Known...	Viol...	28
6	Homicide	2023-09-07	987 Cedar St...	Gang-related s...	Open	6	6	Michael D...	michaeld@example.com	Gunshot wo...	40	14	6	Gang ...	Secon...	We...	30
7	Burglary	2023-09-08	159 Rasenga...	Blue Lily flower...	Closed	7	7	Muzan Ta...	emilyw@example.com	None	25	8	7	Burglar X	Profes...	Mul...	45
8	Robbery	2023-09-18	753 Spruce S...	Jewelry store ...	Open	8	8	John Doe	johndoe2@example....	Trauma	50	9	8	Robber 2	Jewelr...	Int...	38
9	Assault	2023-09-22	456 Heuco St...	Park altercation	Under In...	9	9	Jessica T...	jessicat@example.com	Bruises	22	10	9	Street ...	Local t...	Mul...	29
10	Assault	2023-09-30	123 Mondo S...	Metro Station ...	Open	10	10	David Alaba	davida@example.com	None	30	11	10	Student	High s...	No ...	16

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

- ➔ select c.\* from crime c
- ➔ join suspect s on c.crimeid=s.crimeid
- ➔ join victim v on c.crimeid=v.crimeid
- ➔ where s.age>v.age;

Crime	IncidentT	IncidentDate	Location	Description	Status
5	Robbery	2023-09-02	654 Maple St...	Bank robbery	Under In...
5	Robbery	2023-09-02	654 Maple St...	Bank robbery	Under In...
7	Burglary	2023-09-08	159 Rasenga...	Blue Lily flower...	Closed
9	Assault	2023-09-22	456 Heuco St...	Park altercation	Under In...

16. Find suspects involved in multiple incidents:

- ➔ select name, count(\*) as Incidents
- ➔ from suspect
- ➔ group by name
- ➔ having incidents>1;

name	Incidents
Robber 2	2

17. List incidents with no suspects involved.

- ➔ select c.\*
- ➔ from crime c
- ➔ join suspect s on c.crimeid=s.crimeid
- ➔ where s.name='Unknown';

Crime	IncidentT	IncidentDate	Location	Description	Status
2	Homicide	2023-09-20	456 Elm St, T...	Investigation i...	Under In...

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

- ➔ select \* from crime
- ➔ where incidenttype in ('homicide', 'robbery')

- ➔ and exists (
  - ➔ select 1 from crime where incidenttype = 'homicide')
- ➔ and not exists (
  - ➔ select 1 from crime where incidenttype not in ('homicide', 'robbery'));

Crime	IncidentT	IncidentDate	Location	Description	Status
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.

- ➔ select c.crimeid,
- ➔ coalesce(s.name, 'No Suspect') as SuspectName, c.incidenttype
- ➔ from crime c
- ➔ join suspect s on c.crimeid = s.crimeid;

crimeid	SuspectName	incidenttype
1	Robber 1	Robbery
1	Robber 3	Robbery
2	Unknown	Homicide
3	Suspect 1	Theft
4	Devin Pratt	Assault
4	Billy Smith	Assault
5	John Dillinger	Robbery
5	Jane Smith	Robbery
5	Robber 2	Robbery
6	Gang Member A	Homicide
6	Gang Member B	Homicide
7	Burglar X	Burglary
8	Robber 2	Robbery
9	Street Fighter	Assault
10	Student	Assault

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



```
select s.name
from suspect s
join crime c on s.crimeid=c.crimeid
where c.incidenttype in('Robbery','Assault');
```

name
Robber 1
Robber 3
Devin Pratt
Billy Smith
John Dillinger
Jane Smith
Robber 2
Robber 2
Street Fighter
Student