CODING CHALLENGE – SQL

TABLE CREATION:

```
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)
);
```

INSERTING RECORDS:

```
insert into Crime 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');
/*VictimID,CrimeId,Name,ContactInfo,Injuries */
insert into Victim 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');
insert into Suspect values (1,1,'Robber 1','Armed and masked robber','Previous robbery
convitions'),
(2,2,'Unknown','Investigation Ongoing',NULL),
(3,3,'Suspect 1','Shoplifting suspect','Prior shoplifting arrests');
-- Table Updation
alter table Victim add (VictimAge int);
alter table Suspect add (SuspectAge int);
update Victim set VictimAge=42 where VictimId=1;
update Victim set VictimAge=32 where VictimId=2;
update Victim set VictimAge=35 where VictimId=3;
update Suspect Set SuspectAge=27 where SuspectId=1;
update Suspect Set SuspectAge=NULL where SuspectId=2;
update Suspect Set SuspectAge=30 where SuspectId=3;
```

QUESTIONS:

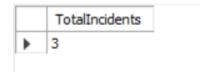
1 Query to select all open incidents

select * from crime where Status='Open';

	CrimeId	IncidentType	IncidentDate	Location	Description	Status
Þ	1	Robbery	2023-09-15	123 Main St, Cityville	Armed Robbery at a convenience store	Open
	NULL	NULL	NULL	HULL	NULL	NULL

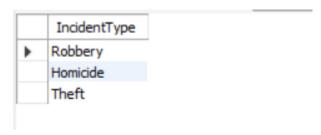
2 Query to find the total number of incidents

select count(*) as TotalIncidents from Crime;



3 Query to list all unique incident types

select distinct IncidentType from Crime;



4 Query to retrieve incidents 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
	NULL	NULL	NULL	NULL	NULL	NULL

5 Query to list persons involved in incidents in descending order of age

(select C.CrimeID, V.Name as Name, V. VictimAge as Age from Crime C join Victim V

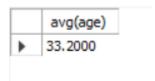
on C.CrimeId=V.CrimeId union select C.CrimeID,S.Name as Name,S.SuspectAge as Age from Crime C join Suspect S

on C.CrimeId=S.SuspectID) order by Age desc;

	CrimeID	Name	Age
•	1	John Doe	42
	3	Alice Johnson	35
	2	Jane Smith	32
	3	Suspect 1	30
	1	Robber 1	27
	2	Unknown	NULL

6 Query to find the average age of persons involved in incidents

select avg(age) from(select V.VictimAge as age from Victim V union select S.SuspectAge as age from Suspect S) as AvgAge;



7 Query to list incident types and their counts, only for open cases

select IncidentType,count(*) as IncidentTypeCount from Crime where Status='Open' group by IncidentType;

	IncidentType	IncidentTypeCount
•	Robbery	1

8 Query to find persons with names containing 'Doe'

select * from Victim where Name like '%Doe';

	VictimID	CrimeId	Name	ContactInfo	Injuries	VictimAge
•	1	1	John Doe	johndoe@example.com	Minor Injuries	42
	NULL	NULL	NULL	NULL	NULL	NULL

9 Query to retrieve the names of persons involved in open cases and closed cases.

select V.Name,'Victim' as PersonType,'Open' as CaseStatus from Victim V join Crime C on V.CrimeId=C.CrimeId where C.Status='Open'

union select S.Name, 'Suspect' as PersonType, 'Open' as CaseStatus from Suspect S join Crime C on S.CrimeId=C.CrimeID where C.Status='Open'

union

select V.Name, 'Victim' as PersonType, 'Closed' as CaseStatus from Victim V join Crime C on V.CrimeId=C.CrimeID where C.Status='Closed'

union select S.Name, 'Suspect' as PersonType, 'Cloesed' as CaseStatus from Suspect S join Crime C on

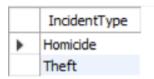
S.CrimeId=C.CrimeId where C.Status='Closed';

	Name	PersonType	CaseStatus
١	John Doe	Victim	Open
	Robber 1	Suspect	Open
	Alice Johnson	Victim	Closed
	Suspect 1	Suspect	Cloesed

10 Query to list incident types where there are persons aged 30 or 35 involved

select distinct C.IncidentType from Crime C join(select CrimeId from Victim where VictimAge between 30 and 35

union select CrimeId from Suspect where SuspectAge between 30 and 35) as PersonAge on C.CrimeId = PersonAge.CrimeId;



11 Query to find persons involved in incidents of the same type as 'Robbery'

select Name,'Robbery' as IncidentType from (

select V.Name from Victim V join Crime C on V.CrimeId=C.CrimeId where C.IncidentType='Robbery' union

select S.Name from Suspect S join Crime C on S.CrimeID=C.CrimeId where C.IncidentType='Robbery') as PersonsInvolved;

	Name	IncidentType
•	John Doe	Robbery
	Robber 1	Robbery

12 Query to list incident types with more than one open case

select IncidentType, count(Status) as Count from Crime where Status='Open' group by IncidentType;

	IncidentType	Count
•	Robbery	1

13 Query to list all incidents with suspects whose names also appear as victims in other incidents

select * from Crime C join Suspect S on C.CrimeId = S.CrimeId

join Victim V on S.Name = V.Name AND S.CrimeId != V.CrimeId;



as

14 Query to retrieve all incidents along with victim and suspect details

select C.CrimeID,C.IncidentType,C.IncidentDate,V.VictimId,V.Name VictimName,v.ContactInfo,

V.Injuries, S.SuspectId, S.Name as SuspectName, S.Description, S.Criminal History

from Crime C left join Victim V on C.CrimeID=V.CrimeID left join Suspect S on C.CrimeId=S.CrimeID;



15 Query to incidents where the suspect is older than any victim

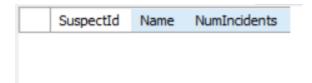
select * from (select C.CrimeId,C.IncidentType,C.IncidentDate from Crime C join Victim V on C.CrimeId=V.CrimeId

join Suspect S on S.CrimeId=C.CrimeId where S.SuspectAge>V.VictimAge) as Age;



16 Query to find suspects involved in multiple incidents

select SuspectId, Name, count(distinct CrimeId) as NumIncidents from Suspect group by SuspectId, Name having count(distinct CrimeId) > 1;



17 Query to list incidents with no suspects involved

select C.CrimeId,C.IncidentType,C.IncidentDate from Crime C join Suspect S on C.CrimeId=S.CrimeId

where S.Name='Unknown';

	CrimeId	IncidentType	IncidentDate
•	2	Homicide	2023-09-20

18 Query to 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='Homicide' union

select * from Crime where IncidentType='Robbery') order by CrimeId;

	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

19 Query to 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, C.IncidentType, C.IncidentType, C.Location, C.Description, S.SuspectId,

if(S.Name!='Unknown',S.Name,'No Suspect') as SuspectName from Crime C left join Suspect S on C.CrimeId=S.CrimeId;

	CrimeId	IncidentType	IncidentType	Location	Description	SuspectId	SuspectName
۰	1	Robbery	Robbery	123 Main St, Cityville	Armed Robbery at a convenience store	1	Robber 1
	2	Homicide	Homicide	456 Elm St, Townsville	Investigation into a murder case	2	No Suspect
	3	Theft	Theft	789 Oak St, Village 456 E	Im St, Townsville It at a mall	3	Suspect 1

20 Query to list all suspects who have been involved in incidents with incident types 'Robbery' or 'Assault

select distinct * from Suspect S join Crime C on S.CrimeId = C.CrimeId

where C.IncidentType = 'Robbery' or C.IncidentType = 'Assault';

