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INTRODUCTION TO DATABASE

Final Term Project

Submitted to   DR. MD ALAMGIR KABIR

PROJECT NAME

[Vehicle Control and Information Management System]

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INTRODUCTION:

In Bangladesh we cannot easily verify a vehicle or a driver due to shortest of resources. Law enforcement units cannot punish any vehicle just by seeing the number of the vehicle. In this project we try to manage this situation. We try our best to make a good management by which law enforcement units can easily verify a vehicle. They can easily find out all the details about that vehicle, and if there are any other cases against that vehicle by using our management system.
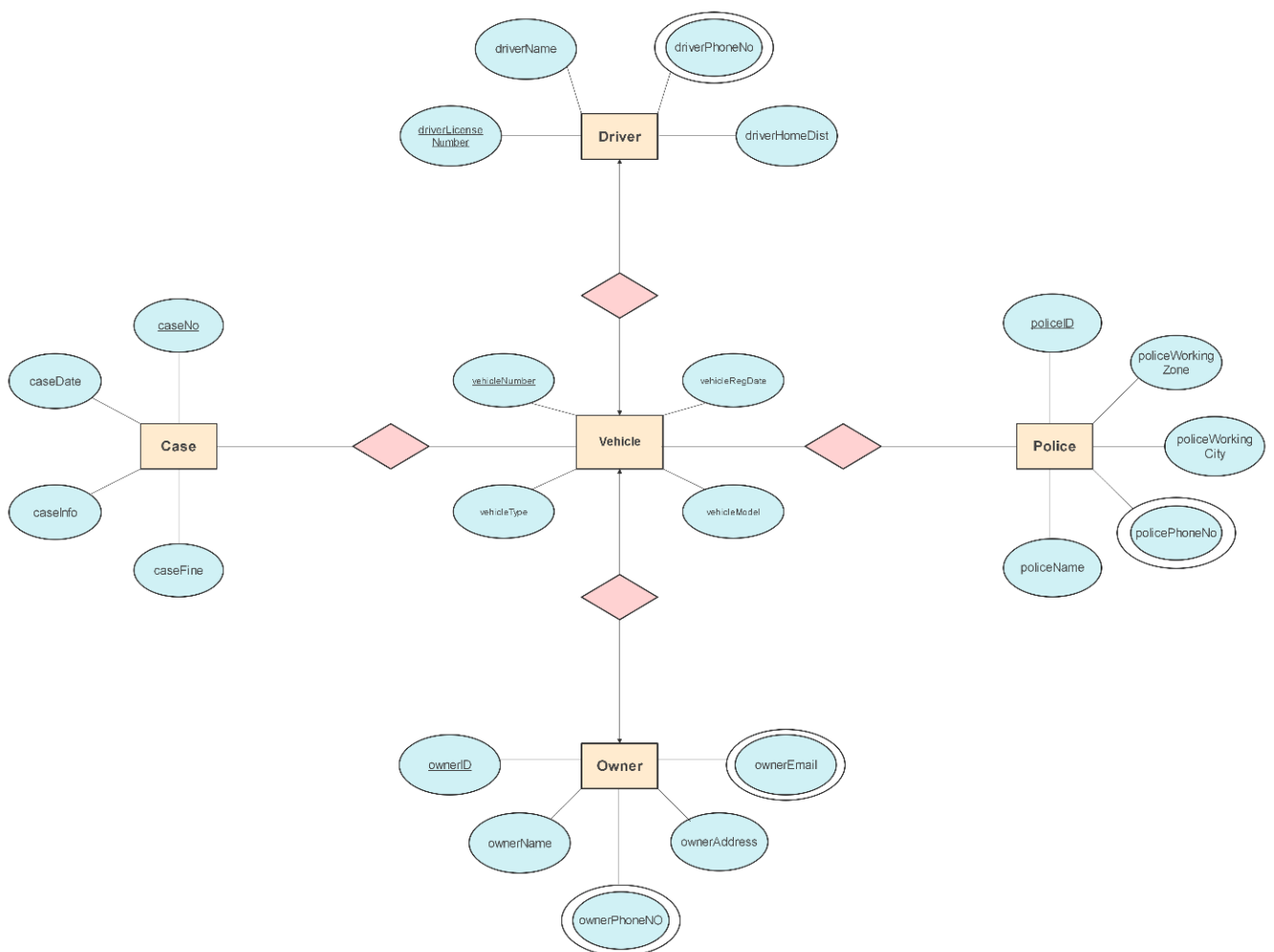
CONTENT LIST:

- Scenario
- ER Diagram
- Normalization
- Table creation
- Data insertion
- Query writing
- Conclusion

SCENARIO:

The main entities of this management system are vehicles, owner, driver, police, and case. Vehicle has vehicleNumber, vehicleRegDate, vehicleType, and vehicleModel. A vehicle has a driver, and a driver has driverLicenseNumber, driverName, driverPhoneNo, and driverHomeDist. Vehicle has also an owner and the owner has ownerID, ownerName, ownerPhoneNo, ownerAddress, and ownerEmail. Police can punish drivers by assigning cases against vehicles and case has caseNo, caseDate, caseInfo, and caseFine. On the other hand, police have policeID, policeName, policePhoneNo, policeWorkingCity, and policeWorkingZone. All the sectors have

some primary key to identify as well as some multivalued attributes. All the things are stored on different tables with specific columns and rows.

ER DIAGRAM:

NORMALIZATION:

- **Vehicle has driver**:

(<u>vehicleNumber</u>, vehicleRegDate, vehicleType, vehicleModel, <u>driverLicenseNumber</u>, driverName, driverPhoneNo, driverHomeDist)

1NF:

driverPhoneNo is multivalued attribute.

2NF:

1. <u>vehicleNumber</u>, vehicleRegDate, vehicleType, vehicleModel.
2. <u>driverLicenseNumber</u>, driverName, driverPhoneNo, driverHomeDist.

3NF:

There is no transitive dependency.

3. <u>vehicleNumber</u>, vehicleRegDate, vehicleType, vehicleModel.
4. <u>driverLicenseNumber</u>, driverName, driverPhoneNo, driverHomeDist.

- **Vehicle has owner:**

(<u>vehicleNumber</u>, vehicleRegDate, vehicleType, vehicleModel, <u>ownerID</u>, ownerName, ownerPhoneNo, ownerAddress, ownerEmail)

1NF:

ownerPhoneNo and ownerEmail are multivalued attribute.

2NF:

1. <u>vehicleNumber</u>, vehicleRegDate, vehicleType, vehicleModel.
2. <u>ownerID</u>, ownerName, ownerPhoneNo, ownerAddress, ownerEmail.

3NF:

There is no transitive dependency.

3. <u>vehicleNumber</u>, vehicleRegDate, vehicleType, vehicleModel.
4. <u>ownerID</u>, ownerName, ownerPhoneNo, ownerAddress, ownerEmail.

- **Police give case to vehicle:**

(<u>policeID</u>, policeName, policePhoneNo, policeWorkingCity, policeWorkingZone, <u>vehicleNumber</u>, vehicleRegDate, vehicleType, vehicleModel)

1NF:

policePhoneNo is multivalued attribute.

2NF:

1. <u>policeID</u>, policeName, policePhoneNo, policeWorkingCity, policeWorkingZone.
2. <u>vehicleNumber</u>, vehicleRegDate, vehicleType, vehicleModel.

3NF:

There is no transitive dependency.

3. <u>policeID</u>, policeName, policePhoneNo, policeWorkingCity, policeWorkingZone.
4. <u>vehicleNumber</u>, vehicleRegDate, vehicleType, vehicleModel.

- **Case is given to vehicle:**

(<u>caseNo</u>, caseDate, caseInfo, caseFine, <u>vehicleNumber</u>, vehicleRegDate, vehicleType, vehicleModel)

1NF:

No multivalued attribute.

2NF:

1. <u>caseNo</u>, caseDate, caseInfo, caseFine.
2. <u>vehicleNumber</u>, vehicleRegDate, vehicleType, vehicleModel.

3NF:

There is no transitive dependency.

3. <u>caseNo</u>, caseDate, caseInfo, caseFine.
4. <u>vehicleNumber</u>, vehicleRegDate, vehicleType, vehicleModel.

FINAL TABLE:

- **Vehicle Table:** <u>vehicleNumber</u>, vehicleRegDate, vehicleType, vehicleModel.
- **Driver Table:** <u>driverLicenseNumber</u>, driverName, driverPhoneNo_1, driverPhoneNo_2, driverHomeDist, vehicleNumber_f.
- **Owner Table:** <u>ownerID</u>, ownerName, ownerPhoneNo_1, ownerPhoneNo_2, ownerAddress, ownerEmail_1, ownerEmail_2, vehicleNumber_f.

- **Police Table:** <u>policeID</u>, policeName, policePhoneNo_1, policePhoneNo_2, policeWorkingCity, policeWorkingZone, vehicleNumber_f.
- **Cases Table:** <u>caseNo</u>, caseDate, caseInfo, caseFine, vehicleNumber_f.

TABLE CREAT:

Vehicle Table:

create table Vehicle(

    vehicleNumber number(10),

    vehicleRegdate date,

    vehicletype varchar2(10),

    vehicleModel varchar2(10),

    constraint pk_Vehicle primary key (vehicleNumber)

);

desc VEHICLE;

	COLUMN_NAME	DATA_TYPE	NULLABLE	DATA_DEFAULT	COLUMN_ID	COMMENTS
1	VEHICLENUMBER	NUMBER(10,0)	No	(null)	1	(null)
2	VEHICLEREGDATE	DATE	Yes	(null)	2	(null)
3	VEHICLETYPE	VARCHAR2(10 BYTE)	Yes	(null)	3	(null)
4	VEHICLEMODEL	VARCHAR2(10 BYTE)	Yes	(null)	4	(null)

Driver Table:

create table Driver(

    driverLicenseNumber number(15),

    driverName varchar2(30),

    driverPhoneNo_1 number(15) unique,

    driverPhoneNo_2 number(15) unique,

    driverHomeDist varchar2(15),

    vehicleNumber_f number(10),

    constraint pk_Driver primary key(driverLicenseNumber),

    constraint fk_Vehicle_Driver foreign key (vehicleNumber_f) references Vehicle(vehicleNumber)

```
);
```

desc DRIVER;

	COLUMN_NAME	DATA_TYPE	NULLABLE	DATA_DEFAULT	COLUMN_ID	COMMENTS
1	DRIVERLICENSENUMBER	NUMBER(15,0)	No	(null)	1	(null)
2	DRIVERNAME	VARCHAR2(30 BYTE)	Yes	(null)	2	(null)
3	DRIVERPHONENO_1	NUMBER(15,0)	Yes	(null)	3	(null)
4	DRIVERPHONENO_2	NUMBER(15,0)	Yes	(null)	4	(null)
5	DRIVERHOMEDIST	VARCHAR2(15 BYTE)	Yes	(null)	5	(null)
6	VEHICLENUMBER_F	NUMBER(10,0)	Yes	(null)	6	(null)

Owner Table:

```
create table Owner(

        ownerID number(15),

        ownerName varchar2(30),

        ownerPhoneNo_1 number(15) unique,

        ownerPhoneNo_2 number(15) unique,

        ownerAddress varchar2(40),

        ownerEmail_1 varchar2(40) unique,

        ownerEmail_2 varchar2(40) unique,

        vehicleNumber_f number(10),

        constraint pk_Owner primary key(ownerID),

        constraint fk_Vehicle_Owner foreign key (vehicleNumber_f) references
        Vehicle(vehicleNumber)

);
```

desc OWNER;

	COLUMN_NAME	DATA_TYPE	NULLABLE	DATA_DEFAULT	COLUMN_ID	COMMENTS
1	OWNERID	NUMBER(15,0)	No	(null)	1	(null)
2	OWNERNAME	VARCHAR2(30 BYTE)	Yes	(null)	2	(null)
3	OWNERPHONENO_1	NUMBER(15,0)	Yes	(null)	3	(null)
4	OWNERPHONENO_2	NUMBER(15,0)	Yes	(null)	4	(null)
5	OWNERADDRESS	VARCHAR2(40 BYTE)	Yes	(null)	5	(null)
6	OWNEREMAIL_1	VARCHAR2(40 BYTE)	Yes	(null)	6	(null)
7	OWNEREMAIL_2	VARCHAR2(40 BYTE)	Yes	(null)	7	(null)
8	VEHICLENUMBER_F	NUMBER(10,0)	Yes	(null)	8	(null)

Police Table:

```
create table Police(

        policeID number(10),

        policeName varchar2(30),

        policePhoneNo_1 number(15) unique,

        policePhoneNo_2 number(15) unique,

        policeWorkingCity varchar2(10),

        policeWorkingZone varchar2(10),

        vehicleNumber_f number(10),

        constraint pk_Police primary key(policeID),

        constraint fk_Vehicle_Police foreign key (vehicleNumber_f) references
        Vehicle(vehicleNumber)

    );


    desc POLICE;
```

	COLUMN_NAME	DATA_TYPE	NULLABLE	DATA_DEFAULT	COLUMN_ID	COMMENTS
1	POLICEID	NUMBER(10,0)	No	(null)	1	(null)
2	POLICENAME	VARCHAR2(30 BYTE)	Yes	(null)	2	(null)
3	POLICEPHONENO_1	NUMBER(15,0)	Yes	(null)	3	(null)
4	POLICEPHONENO_2	NUMBER(15,0)	Yes	(null)	4	(null)
5	POLICEWORKINGCITY	VARCHAR2(10 BYTE)	Yes	(null)	5	(null)
6	POLICEWORKINGZONE	VARCHAR2(10 BYTE)	Yes	(null)	6	(null)
7	VEHICLENUMBER_F	NUMBER(10,0)	Yes	(null)	7	(null)

Cases Table:

Create table Cases(

    caseNo number(10),

    caseDate date,

    caseInfo varchar2(40),

    caseFine number(8),

    vehicleNumber_f number(10),

    constraint pk_Case primary key(caseNo),

    constraint fk_Vehicle_Case foreign key (vehicleNumber_f) references
    Vehicle(vehicleNumber)

);

desc CASES;

	COLUMN_NAME	DATA_TYPE	NULLABLE	DATA_DEFAULT	COLUMN_ID	COMMENTS
1	CASENO	NUMBER(10,0)	No	(null)	1	(null)
2	CASEDATE	DATE	Yes	(null)	2	(null)
3	CASEINFO	VARCHAR2(40 BYTE)	Yes	(null)	3	(null)
4	CASEFINE	NUMBER(8,0)	Yes	(null)	4	(null)
5	VEHICLENUMBER_F	NUMBER(10,0)	Yes	(null)	5	(null)

INSERTION:

Vehicle Table:

insert into vehicle values (132868,to_date('12-Apr-2016','DD-MM-YYYY'),'Car','Corolla');

insert into vehicle values (142569,to_date('17-Oct-2012','DD-MM-YYYY'),'Bike','Apace');

insert into vehicle values (256563,to_date('14-Jun-2018','DD-MM-YYYY'),'Bus','Hyundai');

insert into vehicle values (177045,to_date('02-Feb-2014','DD-MM-YYYY'),'Truck','Tata');

insert into vehicle values (166559,to_date('03-Mar-2013','DD-MM-YYYY'),'Car','Allion');

insert into vehicle values (154587,to_date('24-Oct-2015','DD-MM-YYYY'),'Car','Premio');

insert into vehicle values (125253,to_date('11-Nov-2011','DD-MM-YYYY'),'Bus','Scania');

insert into vehicle values (278565,to_date('12-Sep-2020','DD-MM-YYYY'),'Car','BMW');

insert into vehicle values (254548,to_date('10-Jul-2019','DD-MM-YYYY'),'Bike','Gixer');

insert into vehicle values (241963,to_date('22-Aug-2017','DD-MM-YYYY'),'Truck','Eicher');

select * from VEHICLE order by VEHICLENUMBER asc;

	VEHICLENUMBER	VEHICLEREGDATE	VEHICLETYPE	VEHICLEMODEL
1	132868	12-APR-16	Car	Corolla
2	142569	17-OCT-12	Bike	Apace
3	256563	14-JUN-18	Bus	Hyundai
4	177045	02-FEB-14	Truck	Tata
5	166559	03-MAR-13	Car	Allion
6	154587	24-OCT-15	Car	Premio
7	125253	11-NOV-11	Bus	Scania
8	278565	12-SEP-20	Car	BMW
9	254548	10-JUL-19	Bike	Gixer
10	241963	22-AUG-17	Truck	Eicher

Driver Table:

insert into Driver values (1285518,'Hasan Ali',01317810827,01317810828,'Dhaka',132868);

insert into Driver values (1286619,'Rafi Ahmed',01715040513,01715040514,'Rajshahi',142569);

insert into Driver values (1284420,'Rubel Hasan',01767808817,01767808815,'Cumilla',256563);

insert into Driver values (1185621,'Ahnaf Sayem',01993927063,01993927064,'Barisal',177045);

insert into Driver values (1185519,'Nayeem Ahmed',01456985258,01456985259,'Natore',166559);

insert into Driver values (1188692,'Aminul Islam',01955696969,01955696960,'Thakurgao',154587);

insert into Driver values (1356695,'Shafwan Ahmed',01836965858,01836965855,'Dhaka',125253);

insert into Driver values (1458558,'Sabit Hasan',01535131063,01535131066,'Dhaka',278565);

insert into Driver values (1178899,'Pantho Ahmed',01818971458,01818971451,'Gazipur',254548);

insert into Driver values (1150258,'Dipto Hasan',01456244569,01456244563,'Joypurhat',241963);

select * from DRIVER order by DRIVERLICENSENUMBER asc;

	DRIVERLICENSENUMBER	DRIVERNAME	DRIVERPHONENO_1	DRIVERPHONENO_2	DRIVERHOMEDIST	VEHICLENUMBER_F
1	1150258	Dipto Hasan	1456244569	1456244563	Joypurhat	241963
2	1178899	Pantho Ahmed	1818971458	1818971451	Gazipur	254548
3	1185519	Nayeem Ahmed	1456985258	1456985259	Natore	166559
4	1185621	Ahnaf Sayem	1993927063	1993927064	Barisal	177045
5	1188692	Aminul Islam	1955696969	1955696960	Thakurgao	154587
6	1284420	Rubel Hasan	1767808817	1767808815	Cumilla	256563
7	1285518	Hasan Ali	1317810827	1317810828	Dhaka	132868
8	1286619	Rafi Ahmed	1715040513	1715040514	Rajshahi	142569
9	1356695	Shafwan Ahmed	1836965858	1836965855	Dhaka	125253
10	1458558	Sabit Hasan	1535131063	1535131066	Dhaka	278565

Owner Table:

insert into Owner values (8711489,'Atia Rasida Silvia',01985640827,01852690828,'Uttora,Dhaka','atia@gmail.com','atia12@gmail.com',132868);

insert into Owner values (1478869,'Ashikur Rahman Jibon',01854120513,01996550514,'Rampur,Feni','ashikur@gmail.com','ashikur12@gmail.com',142569);

insert into Owner values (1472886,'Toukir Ahmed',01928382587,01928344490,'Mirbagh,Dhaka','toukir@gmail.com','toukir45gmail.com',256563);

insert into Owner values (6638188,'Md. Hasib - Al Islam',01928381452,01723812699,'Rampur,Dhaka','hasib@gmail.com','hasib67@gmail.com',177045);

insert into Owner values (1231355,'Dip Ghosh',01928384456,01828381452,'Dhanmondi,Dhaka','dip15@gmail.com','dip33@gmail.com',166559);

insert into Owner values (1212585,'Shatabdi Sarker',01928381122,01728384788,'Doctorpara,Feni','shatabdi@gmail.com','shatabdi22@gmail.com',154587);

insert into Owner values (9999869,'Umaiya Tahiyat Bushra',01928388895,01728384444,'Doctorpara,Feni','tahiyat@gmail.com','tahiyat11@gmail.com',125253);

insert into Owner values (7788585,'Md. Abdur Rouf',01928381478,01728388896,'Khilgao,Dhaka','abdur@gmail.com','abdur78@gmail.com',278565);

insert into Owner values (6653585,'Zafir Ken Zaman',01928384633,01728384456,'Uttora,Dhaka','zafir@gmail.com','zafir11@gmail.com',254548);

insert into Owner values (1266558,'Dipto Roy',01928385565,01828381425,'Malibagh,Dhaka','dipto@gmail.com','dipto99@gmail.com',241963);

select * from Owner order by OWNERID asc;

	OWNERID	OWNERNAME	OWNERPHONENO_1	OWNERPHONENO_2	OWNERADDRESS	OWNEREMAIL_1	OWNEREMAIL_2	VEHICLENUMBER_F
1	1212585	Shatabdi Sarker	1928381122	1728384788	Doctorpara,Feni	shatabdi@gmail.com	shatabdi22@gmail.com	154587
2	1231355	Dip Ghosh	1928384456	1828381452	Dhanmondi,Dhaka	dip15@gmail.com	dip33@gmail.com	166559
3	1266558	Dipto Roy	1928385565	1828381425	Malibagh,Dhaka	dipto@gmail.com	dipto99@gmail.com	241963
4	1472886	Toukir Ahmed	1928382587	1928344490	Mirbagh,Dhaka	toukir@gmail.com	toukir45gmail.com	256563
5	1478869	Ashikur Rahman Jibon	1854120513	1996550514	Rampur,Feni	ashikur@gmail.com	ashikur12@gmail.com	142569
6	6638188	Md. Hasib - Al Islam	1928381452	1723812699	Rampur,Dhaka	hasib@gmail.com	hasib67@gmail.com	177045
7	6653585	Zafir Ken Zaman	1928384633	1728384456	Uttora,Dhaka	zafir@gmail.com	zafir11@gmail.com	254548
8	7788585	Md. Abdur Rouf	1928381478	1728388896	Khilgao,Dhaka	abdur@gmail.com	abdur78@gmail.com	278565
9	8711489	Atia Rasida Silvia	1985640827	1852690828	Uttora,Dhaka	atia@gmail.com	atia12@gmail.com	132868
10	9999869	Umaiya Tahiyat Bushra	1928388895	1728384444	Doctorpara,Feni	tahiyat@gmail.com	tahiyat11@gmail.com	125253

Police Table:

insert into Police values (20235,'Kibria Hossain',01928382457,01928172444,'Dhaka','Uttora',132868);

insert into Police values (20236,'Rubel Ali',01928385898,01928982000,'Dhaka','Moghbazar',142569);

insert into Police values (20252,'Golam Ahmed',01928380295,01622582569,'Syhlet','Airport',256563);

insert into Police values (21285,'Rakib Hossain',01928345496,01428382400,'Rajshahi','Station',177045);

insert into Police values (45852,'Rajib Khan',01928303490,01728382331,'Barisal','Ilish-mor',166559);

insert into Police values (25692,'Redwan Ahmed',01928092587,01828380001,'Khulna','Khulna',154587);

insert into Police values (48528,'Raji Khan',01928782257,01628380002,'Gazipur','Chondra',125253);

insert into Police values (58282,'Zerin Ahmed',01928522997,01928384523,'Savar','Nobinogor',278565);

insert into Police values (45823,'Nayeem Khan',01928389905,01428388726,'Chandpur','Motlob',254548);

insert into Police values (45825,'Rafsan Chowdhury',01928345404,01728020101,'Chittagong','Port-Area',241963);

select *from POLICE order by POLICEID asc;

	POLICEID	POLICENAME	POLICEPHONENO_1	POLICEPHONENO_2	POLICEWORKINGCITY	POLICEWORKINGZONE	VEHICLENUMBER_F
1	20235	Kibria Hossain	1928382457	1928172444	Dhaka	Uttora	132868
2	20236	Rubel Ali	1928385898	1928982000	Dhaka	Moghbazar	142569
3	20252	Golam Ahmed	1928380295	1622582569	Syhlet	Airport	256563
4	21285	Rakib Hossain	1928345496	1428382400	Rajshahi	Station	177045
5	25692	Redwan Ahmed	1928092587	1828380001	Khulna	Khulna	154587
6	45823	Nayeem Khan	1928389905	1428388726	Chandpur	Motlob	254548
7	45825	Rafsan Chowdhury	1928345404	1728020101	Chittagong	Port-Area	241963
8	45852	Rajib Khan	1928303490	1728382331	Barisal	Ilish-mor	166559
9	48528	Raji Khan	1928782257	1628380002	Gazipur	Chondra	125253
10	58282	Zerin Ahmed	1928522997	1928384523	Savar	Nobinogor	278565

Cases Table:

create sequence cases_caseNo

increment by 1

start with 101

maxvalue 20000

nocache

nocycle;

insert into Cases values (cases_caseNo.nextval,to_date('12-May-2018','DD-MM-YYYY'),'High-Speed',5000,132868);

insert into Cases values (cases_caseNo.nextval,to_date('17-Oct-2016','DD-MM-YYYY'),'Break Signal',6500,142569);

insert into Cases values (cases_caseNo.nextval,to_date('20-Jun-2021','DD-MM-YYYY'),'High-Speed',8000,256563);

insert into Cases values (cases_caseNo.nextval,to_date('02-Feb-2022','DD-MM-YYYY'),'Modified Car',3000,177045);

insert into Cases values (cases_caseNo.nextval,to_date('03-Mar-2019','DD-MM-YYYY'),'High-Speed',8000,166559);

insert into Cases values (cases_caseNo.nextval,to_date('20-Nov-2020','DD-MM-YYYY'),'Headlight missing',1500,154587);

insert into Cases values (cases_caseNo.nextval,to_date('16-Oct-2022','DD-MM-YYYY'),'Break Signal',10000,125253);

insert into Cases values (cases_caseNo.nextval,to_date('13-Dec-2022','DD-MM-YYYY'),'Accident',15000,278565);

insert into Cases values (cases_caseNo.nextval,to_date('15-Jul-2021','DD-MM-YYYY'),'Breaklight missing',2000,254548);

insert into Cases values (cases_caseNo.nextval,to_date('22-Aug-2017','DD-MM-YYYY'),'Wrong way use',20000,241963);

select * from CASES order by CASENO asc;

	CASENO	CASEDATE	CASEINFO	CASEFINE	VEHICLENUMBER_F
1	101	12-MAY-18	High-Speed	5000	132868
2	102	17-OCT-16	Break Signal	6500	142569
3	103	20-JUN-21	High-Speed	8000	256563
4	104	02-FEB-22	Modified Car	3000	177045
5	105	03-MAR-19	High-Speed	8000	166559
6	106	20-NOV-20	Headlight missing	1500	154587
7	107	16-OCT-22	Break Signal	10000	125253
8	108	13-DEC-22	Accident	15000	278565
9	109	15-JUL-21	Breaklight missing	2000	254548
10	110	22-AUG-17	Wrong way use	20000	241963

QUERY WRITING:

1. Single row function:

- Write a query to display the Owner Name in upper case?

  Answer:

  select UPPER(OwnerName)

  from Owner;

	UPPER(OWNERNAME)
1	ATIA RASIDA SILVIA
2	ASHIKUR RAHMAN JIBON
3	TOUKIR AHMED
4	MD. HASIB - AL ISLAM
5	DIP GHOSH
6	SHATABDI SARKER
7	UMAIYA TAHIYAT BUSHRA
8	MD. ABDUR ROUF
9	ZAFIR KEN ZAMAN
10	DIPTO ROY

- Display the Police Name who works in Dhaka?

  Answer:

  select policeName

  from Police

  where policeWorkingCity = 'Dhaka';

	POLICENAME
1	Kibria Hossain
2	Rubel Ali

- Show the Vehicle Number which type is Car?

  Answer:

  select vehicleNumber

  from Vehicle

  where vehicleType = 'Car';

	VEHICLENUMBER
1	132868
2	166559
3	154587
4	278565

- Write a query to display the Vehicle Number which Case Info is High Speed?

  Answer:

  select vehicleNumber_f as "Vehicle Number"

  from Cases

  where caseInfo = 'High-Speed';

	Vehicle Number
1	132868
2	256563
3	166559

2. Joining:

- Display the Vehicle Number, Driver License Number and Case Information?

Answer:

select V.vehicleNumber as "Vehicle Number",D.driverLicenseNumber as "Driver License No",C.caseInfo as "Case Information"

from Vehicle V,Driver D,Cases C

where V.vehicleNumber = D.vehicleNumber_f

and V.vehicleNumber = C.vehicleNumber_f;

	Vehicle Number	Driver License No	Case Information
1	132868	1285518	High-Speed
2	142569	1286619	Break Signal
3	256563	1284420	High-Speed
4	177045	1185621	Modified Car
5	166559	1185519	High-Speed
6	154587	1188692	Headlight missing
7	125253	1356695	Break Signal
8	278565	1458558	Accident
9	254548	1178899	Breaklight missing
10	241963	1150258	Wrong way use

- Display the Vehicle Number and the information of Police Officer (Name, ID, City, Zone) who punish a Vehicle and which Vehicle?

  Answer:

  select V.vehicleNumber as "Vehicle Number", P.policeName as "Police Name", P.policeID as "ID", P.policeWorkingCity as "Working City", P.policeWorkingZone as "Working Zone"

  from Vehicle V, Police P

  where V.vehicleNumber = P.vehicleNumber_f;

	Vehicle Number	Police Name	ID	Working City	Working Zone
1	132868	Kibria Hossain	20235	Dhaka	Uttora
2	142569	Rubel Ali	20236	Dhaka	Moghbazar
3	256563	Golam Ahmed	20252	Syhlet	Airport
4	177045	Rakib Hossain	21285	Rajshahi	Station
5	166559	Rajib Khan	45852	Barisal	Ilish-mor
6	154587	Redwan Ahmed	25692	Khulna	Khulna
7	125253	Raji Khan	48528	Gazipur	Chondra
8	278565	Zerin Ahmed	58282	Savar	Nobinogor
9	254548	Nayeem Khan	45823	Chandpur	Motlob
10	241963	Rafsan Chowdhury	45825	Chittagong	Port-Area

3. Subquery:

- Display the Case No, Case Information and Date of Case whose Case Fine is minimum?

   Answer:

   select caseNo, caseInfo, caseDate

   from Cases

   where caseFine = (select min(caseFine) from Cases);

	CASENO	CASEINFO	CASEDATE
1	106	Headlight missing	20-NOV-20

- Display the Case No and Case Information which Cases Fine are greater than the Modified Car Case?

   Answer:

   select caseNo,caseInfo

   from Cases

   where caseFine > (select caseFine from Cases where caseInfo = 'Modified Car');

	CASENO	CASEINFO
1	101	High-Speed
2	102	Break Signal
3	103	High-Speed
4	105	High-Speed
5	107	Break Signal
6	108	Accident
7	110	Wrong way use

4. Group function:

- Display the average amount of Case Fine?

   Answer:

   select avg(caseFine)

   from Cases;

	AVG(CASEFINE)
1	7900

- Display the sum of all Case Fine and name the column as Total Amount of Fine?

   Answer:

select sum(caseFine) as "Total Amount of Fine"

from Cases;

	Total Amount of Fine
1	79000

5. <u>View:</u>

- Create a view and display the Vehicle Number, Owner Name, Owner ID, Driver Name and Driver License Number?

    Answer:

    create view vehicle_info

    as select Vehicle.vehicleNumber, Owner.OwnerName, Owner.OwnerID, driver.driverName, driver.driverLicenseNumber

    from Vehicle, Owner, Driver

    where Vehicle.vehicleNumber = Owner.vehicleNumber_f

    and vehicle.vehicleNumber = driver.vehicleNumber_f;

    select * from Vehicle_Info order by vehicleNumber asc;

	VEHICLENUMBER	OWNERNAME	OWNERID	DRIVERNAME	DRIVERLICENSENUMBER
1	125253	Umaiya Tahiyat Bushra	9999869	Shafwan Ahmed	1356695
2	132868	Atia Rasida Silvia	8711489	Hasan Ali	1285518
3	142569	Ashikur Rahman Jibon	1478869	Rafi Ahmed	1286619
4	154587	Shatabdi Sarker	1212585	Aminul Islam	1188692
5	166559	Dip Ghosh	1231355	Nayeem Ahmed	1185519
6	177045	Md. Hasib - Al Islam	6638188	Ahnaf Sayem	1185621
7	241963	Dipto Roy	1266558	Dipto Hasan	1150258
8	254548	Zafir Ken Zaman	6653585	Pantho Ahmed	1178899
9	256563	Toukir Ahmed	1472886	Rubel Hasan	1284420
10	278565	Md. Abdur Rouf	7788585	Sabit Hasan	1458558

- Create a view and show the table of Driver who's Home Town is Dhaka?

    Answer:

    create view Driver_Dhaka ("Name", "License Number")

    as select driverName, driverLicenseNumber

    from Driver

    where driverHomeDist = 'Dhaka';

select * from Driver_Dhaka;

	Name	License Number
1	Hasan Ali	1285518
2	Shafwan Ahmed	1356695
3	Sabit Hasan	1458558

CONCLUSION:

This is a very small scenario of a Vehicle Control and Information Management System. The main lacking of this application is its few features. In reality this management system is very big and its stored huge amount of data. But it might be helpful for them who wants to build this type of management system. They can take the idea from this management system.