Lab3.

Consider the Insurances database given below.

The primary keys are underlined and the data types are specified.

PERSON(DRIVER- ID#:string, name:string, address:string)

CAR (Regno: string, model: string, year:int)

ACCIDENT(report-number: int, date:date, location:string)

OWNS(#driver-id:string, #Regno: string)

PARTICIPATED (#driver-id:string, #Regno: string,#report-number: int, Damageamount :int)

Create the above tables by property specifying the primary keys and the foreign keys. Enter at least five tables for each relation.

Write SQL queries to

i. Demonstrate how you
   a. Update the damage amount for the car with a specific Reg. no in the accident with report number 12 to 25000.
   b. Add a new accident to the database.

ii. Find the total number of people who owned cars that were involved in accident sin 2002.

iii. Find the total number of accidents in which cars belonging to a specific model were involved.

Write PL/SQL program demonstrate exception handling for the above query

---

i) Createtheabovetablesbyproperlyspecifyingtheprimarykeysandtheforeignkeys.

```
Create databases insurance;
Use insurance;
```

```
create  table person(driverid varchar(10),
                    name  varchar(20) not null,
                    address   varchar(20) not null,
              constraint pkp primary key(driverid)) engine = innodb;
```

```
create table car(regno varchar(10) ,
              model  varchar(20) not null,
              year varchar(4) not null,
               constraint pkc primary key(regno)) engine = innodb;
```

```
create table owns (driverid varchar(10),
                  regno varchar(10),
CONSTRAINT FKP FOREIGN KEY (driverid) references person(driverid) on delete cascade,
CONSTRAINT FKC FOREIGN KEY(regno) references car(regno) on delete cascade) engine =
innodb;
```

```
create table accident(report_no varchar(10),
                        accident_date date,
                        location varchar(30) not null,
                        constraint pkc primary key(report_no)) engine = innodb;
```

```
create table participated(driverid varchar(10),
regno varchar(10),
report_no varchar(10),
damage_amt decimal(8,2),
CONSTRAINT FKd foreign key(driverid) references person(driverid) on delete cascade,
CONSTRAINT FKc1 foreign key(regno) references car(regno) on delete cascade,
```

CONSTRAINT FKa foreign key(report_no) references accident(report_no) on delete cascade) engine = innodb;

```
mysql> desc person;
+----------+-------------+------+-----+---------+-------+
| Field    | Type        | Null | Key | Default | Extra |
+----------+-------------+------+-----+---------+-------+
| driverid | varchar(10) | NO   | PRI |         |       |
| name     | varchar(20) | NO   |     | NULL    |       |
| address  | varchar(20) | NO   |     | NULL    |       |
+----------+-------------+------+-----+---------+-------+
3 rows in set (0.00 sec)

mysql> desc car;
+-------+-------------+------+-----+---------+-------+
| Field | Type        | Null | Key | Default | Extra |
+-------+-------------+------+-----+---------+-------+
| regno | varchar(10) | NO   | PRI |         |       |
| model | varchar(20) | NO   |     | NULL    |       |
| year  | varchar(4)  | NO   |     | NULL    |       |
+-------+-------------+------+-----+---------+-------+
3 rows in set (0.00 sec)

mysql> desc owns;
+----------+-------------+------+-----+---------+-------+
| Field    | Type        | Null | Key | Default | Extra |
+----------+-------------+------+-----+---------+-------+
| driverid | varchar(10) | YES  | MUL | NULL    |       |
| regno    | varchar(10) | YES  | MUL | NULL    |       |
+----------+-------------+------+-----+---------+-------+
2 rows in set (0.00 sec)

mysql> desc accident;
+---------------+-------------+------+-----+---------+-------+
| Field         | Type        | Null | Key | Default | Extra |
+---------------+-------------+------+-----+---------+-------+
| report_no     | varchar(10) | NO   | PRI |         |       |
| accident_date | date        | YES  |     | NULL    |       |
| location      | varchar(30) | NO   |     | NULL    |       |
+---------------+-------------+------+-----+---------+-------+
3 rows in set (0.00 sec)

mysql> desc participated;
+------------+--------------+------+-----+---------+-------+
| Field      | Type         | Null | Key | Default | Extra |
+------------+--------------+------+-----+---------+-------+
| driverid   | varchar(10)  | YES  | MUL | NULL    |       |
| regno      | varchar(10)  | YES  | MUL | NULL    |       |
| report_no  | varchar(10)  | YES  | MUL | NULL    |       |
| damage_amt | decimal(8,2) | YES  |     | NULL    |       |
+------------+--------------+------+-----+---------+-------+
4 rows in set (0.00 sec)
```

---

person table insertion

```
mysql> insert into person values('1d','sachin','mumbai');
Query OK, 1 row affected (0.00 sec)

mysql> insert into person values('2d','sourav','kolkata');
Query OK, 1 row affected (0.00 sec)

mysql> insert into person values('3d','saniya','hyderabad');
Query OK, 1 row affected (0.00 sec)

mysql> insert into person values('4d','sindhu','bengaluru');
Query OK, 1 row affected (0.00 sec)
```

```
mysql> insert into person values('5d','virat','delhi');
Query OK, 1 row affected (0.00 sec)
```

---

car table insertion

```
mysql> insert into car values('1c','santro','2002');
Query OK, 1 row affected (0.00 sec)

mysql> insert into car values('2c','swift','2002');
Query OK, 1 row affected (0.00 sec)

mysql> insert into car values('3c','kia','2020');
Query OK, 1 row affected (0.00 sec)

mysql> insert into car values('4c','maruti','2008');
Query OK, 1 row affected (0.00 sec)

mysql> insert into car values('5c','santro','2012');
Query OK, 1 row affected (0.02 sec)
```

---

owns table insertion

```
mysql> insert into owns values('1d','1c');
Query OK, 1 row affected (0.00 sec)

mysql> insert into owns values('1d','2c');
Query OK, 1 row affected (0.00 sec)

mysql> insert into owns values('2d','3c');
Query OK, 1 row affected (0.00 sec)

mysql> insert into owns values('4d','5c');
Query OK, 1 row affected (0.00 sec)

mysql> insert into owns values('5d','4c');
Query OK, 1 row affected (0.00 sec)
```

---

accident table insertion

```
mysql> insert into accident values('1r','2002-06-12','dharwad');
Query OK, 1 row affected, 1 warning (0.00 sec)

mysql> insert into accident values('2r','2002-06-12','hubli');
Query OK, 1 row affected, 1 warning (0.00 sec)

mysql> insert into accident values('3r','2009-02-07','hubli');
Query OK, 1 row affected, 1 warning (0.00 sec)

mysql> insert into accident values('4r','2002-12-07','gadag');
Query OK, 1 row affected, 1 warning (0.00 sec)

mysql> insert into accident values('5r','2007-09-09','bengaluru');
Query OK, 1 row affected, 1 warning (0.00 sec)
```

---

participated table insertion

```
mysql> insert into participated values('1d','1c','1r',10000);
Query OK, 1 row affected (0.00 sec)

mysql> insert into participated values('1d','2c','2r',90000);
Query OK, 1 row affected (0.00 sec)

mysql> insert into participated values('2d','3c','3r',24000);
Query OK, 1 row affected (0.00 sec)

mysql> insert into participated values('4d','5c','4r',1200);
Query OK, 1 row affected (0.00 sec)
```

```
mysql> insert into participated values('4d','5c','5r',6000);
Query OK, 1 row affected (0.00 sec)
```

```
mysql> select * from person;
+----------+--------+-----------+
| driverid | name   | address   |
+----------+--------+-----------+
| 1d       | sachin | mumbai    |
| 2d       | sourav | kolkata   |
| 3d       | saniya | hyderabad |
| 4d       | sindhu | bengaluru |
| 5d       | virat  | delhi     |
+----------+--------+-----------+
5 rows in set (0.00 sec)


mysql> select * from car;
+-------+--------+------+
| regno | model  | year |
+-------+--------+------+
| 1c    | santro | 2002 |
| 2c    | swift  | 2002 |
| 3c    | kia    | 2020 |
| 4c    | maruti | 2008 |
| 5c    | santro | 2012 |
+-------+--------+------+
5 rows in set (0.00 sec)


mysql> select * from owns;

+----------+-------+
| driverid | regno |
+----------+-------+
| 1d       | 1c    |
| 1d       | 2c    |
| 2d       | 3c    |
| 5d       | 4c    |
| 1d       | 1c    |
| 1d       | 2c    |
| 2d       | 3c    |
| 4d       | 5c    |
| 5d       | 4c    |
+----------+-------+
9 rows in set (0.00 sec)


mysql> select * from accident;
+-----------+---------------+-----------+
| report_no | accident_date | location  |
+-----------+---------------+-----------+
| 1r        | 2002-06-12    | dharwad   |
| 2r        | 2002-06-12    | hubli     |
| 3r        | 2009-02-07    | hubli     |
| 4r        | 2002-12-07    | gadag     |
| 5r        | 2007-09-09    | bengaluru |
+-----------+---------------+-----------+
5 rows in set (0.00 sec)




mysql> select * from participated;
+----------+-------+-----------+------------+
| driverid | regno | report_no | damage_amt |
+----------+-------+-----------+------------+
| 1d       | 1c    | 1r        |   10000.00 |
```

```
| 1d       | 2c    | 2r         |   90000.00 |
| 2d       | 3c    | 3r         |   24000.00 |
| 4d       | 5c    | 4r         |    1200.00 |
| 4d       | 5c    | 5r         |    6000.00 |
+----------+-------+------------+------------+
5 rows in set (0.00 sec)
```

---

iii) Demonstrate how you

a. Update the damage amount for the car with a specific Reg. no in the accident with report number 1r to 25000

Query:-

```
mysql> update participated   set damage_amt='25000'
      where   regno='1c' and  report_no='1r';
Query OK, 1 row affected (0.02 sec)
Rows matched: 1  Changed: 1  Warnings: 0
```

output after applying updated query

```
mysql> select * from participated;
+----------+-------+-----------+------------+
| driverid | regno | report_no | damage_amt |
+----------+-------+-----------+------------+
| 1d       | 1c    | 1r        |   25000.00 |
| 1d       | 2c    | 2r        |   90000.00 |
| 2d       | 3c    | 3r        |   24000.00 |
| 4d       | 5c    | 4r        |    1200.00 |
| 4d       | 5c    | 5r        |    6000.00 |
+----------+-------+-----------+------------+
5 rows in set (0.00 sec)
```

---

b) Add a new accident to the database

```
mysql> insert into accident values('6r','2002-09-02','hubli');
Query OK, 1 row affected, 1 warning (0.00 sec)

mysql> insert into participated values('5d','4c','6r',9000);
Query OK, 1 row affected (0.00 sec)
```

output after applying insertion query(shown in red color)

```
mysql> select * from accident;
+-----------+---------------+-----------+
| report_no | accident_date | location  |
+-----------+---------------+-----------+
| 1r        | 2002-06-12    | dharwad   |
| 2r        | 2002-06-12    | hubli     |
| 3r        | 2009-02-07    | hubli     |
| 4r        | 2002-12-07    | gadag     |
| 5r        | 2007-09-09    | bengaluru |
| 6r        | 2002-09-02    | hubli     |
+-----------+---------------+-----------+
6 rows in set (0.00 sec)

mysql> select * from participated;
+----------+-------+-----------+------------+
| driverid | regno | report_no | damage_amt |
+----------+-------+-----------+------------+
| 1d       | 1c    | 1r        |   25000.00 |
| 1d       | 2c    | 2r        |   90000.00 |
| 2d       | 3c    | 3r        |   24000.00 |
| 4d       | 5c    | 4r        |    1200.00 |
| 4d       | 5c    | 5r        |    6000.00 |
| 5d       | 4c    | 6r        |    9000.00 |
```

```
+----------+-------+----------+------------+
6 rows in set (0.00 sec)
```

---

iv) Find the total number of people who owned cars that were involved in accidents in 2002.

Query:

```
mysql> select count(distinct p.driverid) as "Tot_No_of_People " from person p ,accident a,
participated pa where a.report_no = pa.report_no and p.driverid=pa.driverid and accident_date like
'2002%';
```

output of the query:-

```
+-------------------+
| Tot_No_of_People  |
+-------------------+
|                 3 |
+-------------------+
1 row in set, 1 warning (0.00 sec)
```

---

v) Find the number of accidents in which cars belonging to a specific model were involved.

Query:

```
mysql> select count(report_no) as "Number of ACCIDENTS " from car c,participated p
where c.regno=p.regno and c.model='santro';
```

output of the query:-

```
+--------------------+
| No  of  ACCIDENTS  |
+--------------------+
|                  3 |
+--------------------+
1 row in set (0.00 sec)
```

******end**********

Do not write this pl/sql

(II) Write PL/SQL program demonstrate exception handling for the above query

(I)

```
mysql> delimiter //
mysql> create procedure Participated_update()
       BEGIN
       declare exit handler for 1054
       BEGIN
       select 'GOT AN UPDATE ERROR' AS Message;
       END;
       update participated set Damageam=20000 where Regno='C502';
       END//
Query OK, 0 rows affected (0.00 sec)

mysql> delimiter ;
mysql> call Participated_update();

+---------------------+
| Message             |
+---------------------+
| GOT AN UPDATE ERROR |
+---------------------+
1 row in set (0.08 sec)

Query OK, 0 rows affected (0.00 sec)
```

(II)

```
mysql> delimiter $$
mysql> create procedure Procedure_Person()
```

```
       BEGIN
       declare exit handler for 1054
       BEGIN
       select 'GOT AN ERROR WHILE DISPLAYING THE DATA' AS Message;
       END;
       select name,Address,Damageamt from Person p,Participated pa, Accident a where
       p.Driver_id=pa.Driver_id and a.Reportno= pa.Reportno ;
       END$$
Query OK, 0 rows affected (0.00 sec)

mysql> delimiter ;
mysql> call Procedure_Person();
+---------------------------------------+
| Message                               |
+---------------------------------------+
| GOT AN ERROR WHILE DISPLAYING THE DATA |
+---------------------------------------+
1 row in set (0.00 sec)

Query OK, 0 rows affected (0.01 sec)
```

****