DATABASE LABORATORY

Subject Code: 2TMCAL1 I. A. Marks: 50
Hours/Week: 02 Exam Marks: 50
Total Hours: 24 Exam Hours: 03

Practical – 1 :

Consider the Insurance database given below. The primary keys are underlined and the data types are specified.

DRIVER (driver-id#:String, driver_name : string, address:string)

CAR (Regno:String, car_model:string, yearofpurchase:int)

ACCIDENT (Report-Number:int, dateofaccident:date, location:string)

CAR_OWNER (driver-id#:string, Regno:String)

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

1. Create the above tables by properly specifying the primary keys and the foreign keys.
2. Enter atleast five tuples (i.e. records) for each relation (i.e. table).
3. Demonstrate how you
   a. Update the damage amount for the car with a specific Regno in the accident with report number 12 to 25000.
   b. Add a new accident to the database

Following are the Queries :

Query-1 : List out driver name, address, model of the car, year of purchase for a particular owner :

Query-2 : List out driver name, model of the car, year of purchase, place of accident and date of accident occurred at a particular place.

Query-3 : List the number of accidents done by a particular driver :

Query-4 : List out the accident details (i.e. driver name, model of the car, date of accident, place of accident, damage amount) where the damage amount exceeds Rs. 25,000

Query-5 : Find out the place of accident where the number of accidents occurred are more than one.

Query-6 : Find the number of people who owned car that were involved in an accident in the year 2009

Query-7 : Find the number of accidents in which car belongs to specific model were involved.

Create the tables with the following source codes :

Table : Driver:

```
create table driver(
driver_id       varchar2(6) primary key,
driver_name     varchar2(20),
address         varchar2(30)   ) ;
```

Table : Car

```
create table car(
Reg_no              varchar2(10) primary key,
car_model           varchar2(20),
YearOfPurchase      date  ) ;
```

Table : Accident

```
create table accident(
Report_no               varchar2(10) primary key,
dateofaccident          date,
location                varchar2(30)  ) ;
```

Table : Car_Owner

```
create table car_owner(
driver_id       references  driver(driver_Id),
reg_no          references  car(reg_no)  ) ;
```

Table : Participated

```
create table participated(
driver_id               references  driver(driver_Id),
report_no               references accident(report_no),
damage_amount           number(9,2) ) ;
```

Insert the records in to the tables with the following codes :

To the table Driver :

```
insert into driver values ('D1','Amar','Tumkur');
insert into driver values ('D2','Bhaskar','Bangalore');
insert into driver values ('D3','Dinakar','Kolar');
insert into driver values ('D4','Divakar','Tiptur');
insert into driver values ('D5','Karunakar','Tumkur');
```

To the table Car :

```
insert into car values ('KAO6-7000','Toyota','1-jan-2007');
insert into car values ('KAO2-7001','Maruthi','25-Feb-2008');
insert into car values ('KAO3-7002','Hyundai','15-Mar-2007');
insert into car values ('KAO6-7003','Mahindra','5-Mar-2008');
insert into car values ('KAO6-7004','TATA','15-May-2008');
```

To the table Accident :

```
insert into accident values ('R101','16-jul-2009','Tumkur');
insert into accident values ('R102','17-aug-2009','Tumkur');
insert into accident values ('R103','15-sep-2009','Bangalore');
insert into accident values ('R104','10-Nov-2008','Kolar');
insert into accident values ('R105','11-Oct-2008','Bangalore');
insert into accident values ('R106','21-Oct-2009','Tiptur');
insert into accident values ('R107','25-Dec-2009','Tumkur');
```

To the table Car_Owner :

```
insert into car_owner values ('D1','KAO6-7000');
insert into car_owner values ('D2','KAO2-7001');
insert into car_owner values ('D3','KAO3-7002');
insert into car_owner values ('D4','KAO6-7003');
insert into car_owner values ('D5','KAO6-7004');
```

To the table Participated :

```
insert into participated values ('D1','R101',15000);
insert into participated values ('D2','R102',8000);
insert into participated values ('D3','R103',25000);
insert into participated values ('D4','R105',46000);
insert into participated values ('D5','R104',10000);
insert into participated values ('D1','R106',4000);
insert into participated values ('D2','R107',30000);
```

Execute the queries in the following steps :

Query-1 : List out driver name, address, model of the car, year of purchase for a particular owner :

Step-1 : First try to display the details of driver, address, model and purchase year :

```
SQL > select driver_name,address, car_model, yearofpurchase
      from    driver,car,car_owner
      where  car_owner.driver_id = driver.driver_id
      and     car_owner.reg_no = car.reg_no
```

Step-2 : Then, display the same for a particular driver :

```
SQL > select driver_name,address, car_model, yearofpurchase
      from    driver,car,car_owner
      where  car_owner.driver_id = driver.driver_id
      and     car_owner.reg_no = car.reg_no
      and     driver_name = 'Amar'
```

Query-2 : List out drivername, modelofthe car, year of purchase, place of accident and date of accident occured at a particular place.

Step-1 : First try to display the details of driver, model, purchase year, place of accident and date of accident :

```
SQL > select driver_name, car_model, yearofpurchase, dateofaccident, location
      from driver,car,car_owner, accident, participated
      where car_owner.driver_id = driver.driver_id
      and    car_owner.reg_no = car.reg_no
      and    participated.report_no = accident.report_no
      and    participated.driver_id = driver.driver_Id
```

Step-2 : Then, display the same for a particular place of accident :

```
SQL > select driver_name, car_model, yearofpurchase, dateofaccident, location
      from driver,car,car_owner, accident, participated
      where car_owner.driver_id = driver.driver_id
      and   car_owner.reg_no = car.reg_no
      and   participated.report_no = accident.report_no
      and   participated.driver_id = driver.driver_Id
      and location = 'Tumkur'
```

Query-3 : List the number of accidents done by a particular driver :

Step-1 : First try to display driver name and their number of accident details :

```
SQL > select driver_name, count(driver_name) as NoofAccidents
      from participated, driver
      where participated.driver_id = driver.driver_id
      group by driver_name
```

Step-2 : Then try to display the same for a particular driver :

```
SQL > select driver_name, count(driver_name) as NoofAccidents
      from participated, driver
      where participated.driver_id = driver.driver_id
      and driver_name = 'Amar'
      group by driver_name
```

Query-4 : List out the accident details (i.e. drivername, modelofthe car, date of accident, place of accident, damage amount) where the damage amount exceeds Rs. 25,000

Step-1 : First try to display the details of driver, model, purchase year, place of accident and damage_amount :

```
SQL > select driver_name, car_model,dateofaccident, damage_amount, location
      from driver,car,car_owner, accident, participated
      where car_owner.driver_id = driver.driver_id
      and   car_owner.reg_no = car.reg_no
      and   participated.report_no = accident.report_no
      and   participated.driver_id = driver.driver_Id
```

Step-2 : Then, display the same, where the damage amount exceeds Rs. 25,000

```
SQL > select driver_name, car_model,dateofaccident, damage_amount, location
      from driver,car,car_owner, accident, participated
      where car_owner.driver_id = driver.driver_id
      and   car_owner.reg_no = car.reg_no
      and   participated.report_no = accident.report_no
      and   participated.driver_id = driver.driver_Id
      and damage_amount > 25000
```

Query-5 : Find out the place of accident where the number of accidents occurred are more than one.

Step-1 : First try to display place of accidents and their number of accident details :

```
SQL > select location, count(location) as NoofAccidents
      from    participated, accident
      where  participated.report_no = accident.report_no
      group by location
```

Step-2 : Then try to display the same for a particular place of accident :

```
SQL > select location, count(location) as NoofAccidents
      from   participated, accident
      where  participated.report_no = accident.report_no
      group by location
      having count(location) > 1
```

Query - 6 : Find the total number of people who owned car that were involved in an accident in the year 2009

Step-1 : First try to display the driver name and their number of accident details :

```
SQL > select driver_name, dateofaccident, to_char(dateofaccident,'yyyy') as yearofaccident
      from driver, accident, participated
      where participated.report_no = accident.report_no
      and    participated.driver_id = driver.driver_Id
```

Step-2 : Then try to display the same for a particular year 2009 :

```
SQL > select driver_name, dateofaccident, to_char(dateofaccident,'yyyy') as yearofaccident
      from driver, accident, participated
      where participated.report_no = accident.report_no
      and   participated.driver_id = driver.driver_Id
      and   to_char(dateofaccident,'yyyy') = 2009
```

Step-3 : Then try to display year of accidents and number of people involved

```
SQL > select to_char(dateofaccident,'yyyy') as yearofaccident,
      count(to_char(dateofaccident,'yyyy')) as noofpeople
      from accident
      group by to_char(dateofaccident,'yyyy')
```

Step-4 : Then try to display year of accidents and number of people involved for an year 2009

```
SQL > select to_char(dateofaccident,'yyyy') as yearofaccident,
      count(to_char(dateofaccident,'yyyy')) as noofpeople
      from accident
      where to_char(dateofaccident,'yyyy') = 2009
      group by to_char(dateofaccident,'yyyy')
```

Query - 7 : Find the number of accidents in which car belongs to specific model were involved.

Step-1 : First try to display Car Models and their number of accident details :

```
SQL > select car_model, count(car_model) as noofaccidents
      from car, accident, participated, driver, car_owner
      where participated.report_no = accident.report_no
      and car_owner.driver_id = driver.driver_id
      and car_owner.reg_no = car.reg_no
      and   participated.driver_id = driver.driver_Id
      group by car_model
```

Step-2 : Then try to display the Car Model and number of accidents :

```
SQL > select car_model, count(car_model) as noofaccidents
      from car, accident, participated, driver, car_owner
      where participated.report_no = accident.report_no
      and car_owner.driver_id = driver.driver_id
      and car_owner.reg_no = car.reg_no
      and   participated.driver_id = driver.driver_Id
      and car_model = 'Maruthi'
      group by car_model
```