

DBMS Practicals

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Ques 1.

```
mysql> create database du_library;
```

```
mysql> create table LibraryBooks(  
    -> Accession_Number decimal(10,5) primary key,  
    -> Title varchar(30) not null,  
    -> Author varchar(50) not null,  
    -> Department varchar(50) not null,  
    -> Purchase_Date date not null,  
    -> Price decimal(7,2) not null);
```

```
mysql> Create table IssuedBooks(  
    -> Accession_Number decimal(10,5) not null,  
    -> Borrower Varchar(30) not null  
    -> foreign key (Accession_Number) references LibraryBooks(Accession_Number));
```

(a)Primary Key- Accession_Number in table LibraryBooks

Foreign Key- Accession_Number in table IssuedBooks

```
mysql> insert into LibraryBooks values(51235.56,"The man who counted","Malba  
Tahan","Statistics",'1997-01-12',105.00);  
mysql> insert into LibraryBooks values(21826.46,"Database System Concepts","Sumitra  
Arora","CS",'2003/05/30',620.00);  
mysql> insert into LibraryBooks values(121.4345,"Fundamental of Statistics","V.K.  
Kapoor","Statistics",'2002/03/31',550.00);  
mysql> insert into LibraryBooks values(76389.4647,"Play with  
Python","Navathe","CS",'2002/06/21',499.00);  
mysql> insert into LibraryBooks values(6737.84,"Discrete  
Maths","M.L.Aggrawal","Mathematics",'1999/08/04',450.00);
```

```
mysql> insert into IssuedBooks values( 21826.46,"Sakshi Singh");  
mysql> insert into IssuedBooks values( 121.4345,"Mayank Sharma");  
mysql> insert into IssuedBooks values( 6737.84," Sahil Mathur");  
mysql> insert into IssuedBooks values( 21826.46,"Saksham Singh");  
mysql> insert into IssuedBooks values( 76389.4647,"Anushka Choubey");
```

(b) mysql> set foreign_key_checks=Off;
mysql> delete from librarybooks where accession_number=21826.46;
mysql> delete from librarybooks where title="Database System Concepts";
mysql> set foreign_key_checks=on;

(c) mysql> update librarybooks set department="CS" where title="discrete maths";

(d) mysql> select Title from librarybooks where department="CS";

(e) mysql> select Title from librarybooks where department="CS" and author="navathe";

(f) mysql> select Title from librarybooks l, issuedbooks i where
l.accession_number=i.accession_number and l.department="CS";

(g) mysql> select Title from librarybooks where price<500 and purchase_date between
'1999/01/01' and '2004/01/01';

Ques 2.

mysql> create database cs_student;

mysql> create table personal_informartion(
-> Roll_no int(10) primary key,
-> Name char(30) not null,
-> DOB date not null,
-> Address varchar(70) not null,
-> Marks_in_12th int(2) not null,
-> Phone_number Varchar(10) not null);

mysql> create table Paper_Details(
-> Paper_Code int(4) primary key,
-> NameofPaper char(30) unique);

mysql> create table Academic_Details(
-> Roll_no int(10) primary key,
-> Paper_code int(4) not null,
-> Attendance int(3) not null,

- > Marks int(3) not null,
- > foreign key(roll_no) references personal_informartion(roll_no),
- > foreign key(paper_code) references Paper_details(paper_code));

- (a) Primary key - Roll_no in table personal_informartion
 Paper_code in table Paper_details
 Foreign key - Roll_no in table Academic_Details
 Paper_code in table Academic_Details

```
mysql> insert into personal_informartion values(1240,"Vikas
Singh",'2001-01-04',"UP",91,9102829875);
mysql> insert into personal_informartion values(1233,"Sakshi
Singh",'2001-04-29',"Uttarakhand",89,9748483743);
mysql> insert into personal_informartion
values(1204,"Ananya",'2000-03-19',"Delhi",94,9837643368);
mysql> insert into personal_informartion values(1225,"Neha Gupta",'2001-09-21',"Uttar
Pradesh",97,9637453672);
mysql> insert into personal_informartion values(1223,"Garima
Tiwari",'2001-11-09',"Delhi",92,9764563726);
```

```
mysql> insert into paper_details value(1,"Real Analysis");
mysql> insert into paper_details value(2,"Environmental Studies");
mysql> insert into paper_details value(3,"Algebra");
mysql> insert into paper_details value(4,"Differential Equation");
mysql> insert into paper_details value(5,"Database management system");
```

```
mysql> insert into Academic_details values(1040,2,90,98);
mysql> insert into Academic_details values(1033,2,70,90);
mysql> insert into Academic_details values(1004,2,65,91);
mysql> insert into Academic_details values(1025,2,65,91);
mysql> insert into Academic_details values(1023,1,75,65);
```

(b) mysql> select pd.paper_code, pd.nameofpaper, pi.name from paper_details as pd,
 personal_informartion as pi where paper_code=2 and pi.roll_no in(select roll_no from
 academic_details where paper_code=2 and attendance>75 and marks>60);

(c) mysql> select name from personal_informartion as pi, academic_details as ad where
 pi.roll_no=ad.roll_no and ad.marks>60 and ad.paper_code=1;

(d) mysql> select pi.name, ad.attendance, ad.marks from personal_informartion as pi,
 academic_details as ad where pi.roll_no=ad.roll_no;

(e) mysql> select name from personal_informartion as pi, academic_details as ad where

pi.roll_no=ad.roll_no and pi.roll_no=(select roll_no from academic_details where marks=(select max(marks) from academic_details));

Ques 3.

mysql> create database twowheeler;

mysql> create table customer(

- > CustId varchar(20) primary key,
- > email varchar(50) not null,
- > Name char(30) not null,
- > phone varchar(10) unique,
- > ReferrerID varchar(20));

mysql> create table BicycleModel(

- > ModelNo varchar(10) primary key,
- > Manufacturer Char(20) not null,
- > Style Varchar(20) not null);

mysql> create table Bicycle(

- > BicycleId varchar(20) primary key,
- > DatePurchased date not null,
- > Color Char(10) not null,
- > CustId varchar(20) not null,
- > ModelNo varchar(10) not null,
- > foreign key(CustId) references customer(CustId),
- > foreign key(ModelNo) references BicycleModel(ModelNo));

mysql> create table Service(

- > StartDate date not null,
- > BicycleId varchar(20) not null,
- > EndDate date not null,
- > Foreign key(BicycleId) references Bicycle(BicycleId));

(a) Primary Key - CustId in table Customer

ModelNo in table BicycleModel

BicycleId in table Bicycle

Foreign Key- CustId in table Bicycle

ModelNo in table Bicycle
BicycleId in table Service

```
mysql> insert into customer values(1001,"sakshi28087@gmail.com","Sakshi Singh",8923115689,"C1");
mysql> insert into customer values(1002,"kk4373@gmail.com","Krishna Kumar",8373876327,"A2");
mysql> insert into customer values(1003,"ravinasharma8653@gmail.com","Ravina Sharma",9375472814,"C3");
mysql> insert into customer values(1004,"sumanss7368@gmail.com","Suman Singh",8293765392,"B7");
mysql> insert into customer values(1005,"reenasingh3753@gmail.com","Reena Singh",9375428765,"C5");
```

```
mysql> insert into bicyclemodel values("M101","Honda","Activa");
mysql> insert into bicyclemodel values("M102","Hero","Mastero");
mysql> insert into bicyclemodel values("M103","Bajaj","Discover");
mysql> insert into bicyclemodel values("M104","Hero","Splendor");
mysql> insert into bicyclemodel values("M105","Yamaha","FZ");
```

```
mysql> insert into bicycle values("B501",'2019-02-05',"Red","1002","M101");
mysql> insert into bicycle values("B502",'2018-05-22',"Silver","1001","M105");
mysql> insert into bicycle values("B503",'2020-01-03',"Red","1004","M104");
mysql> insert into bicycle values("B504",'2019-04-17',"blue","1003","M103");
mysql> insert into bicycle values("B505",'2020-02-08',"green","1002","M102");
```

```
mysql> insert into service values('2019-09-09','B505','2019-09-12');
mysql> insert into service values('2018-10-10','B502','2018-10-12');
mysql> insert into service values('2018-04-24','B502','2019-04-26');
mysql> insert into service values('2019-05-17','B501','2019-05-19');
mysql> insert into service values('2020-01-18','B502','2020-01-20');
```

(b) mysql> Select * from customer where custID in(select custid from bicycle where modelno in(select ModelNo from bicyclemodel where manufacturer="Honda"));

(c) mysql> Select * from bicyclemodel where modelno in(select modelno from bicycle where custid in(select custid from customer where referrrId="C1"));

(d) mysql> select bm.manufacturer from bicycle as bi, bicyclemodel as bm where bi.modelno=bm.modelno and bi.color="red";

(e) mysql> select modelno from bicycle where bicycleid in(select distinct bicycleid from service);

Ques 4.

```
mysql> create database employee_details;  
mysql> use employee_details;
```

```
mysql> create table employee(  
-> Person_name char(30) primary key,  
-> Street char(30) not null,  
-> city char(15) not null);
```

```
mysql> create table Company(  
-> Company_name varchar(30) Primary key,  
-> City char(15));
```

```
mysql> create table Works(  
-> Person_name char(30),  
-> Company_name varchar(30),  
-> Salary decimal(10,2),  
-> foreign key(Person_name) references employee(Person_name),  
-> foreign key(Company_name) references Company(Company_name));
```

```
mysql> Create table manages(  
-> Person_name char(30),  
-> Manager_name char(30),  
-> foreign key(Person_name) references employee(Person_name));
```

```
mysql> insert into employee values("Sakshi","23/34 B block","Roorkee");  
mysql> insert into employee values("Gaurav","454/4 V block","Lucknow");  
mysql> insert into employee values("Rahul","65/6 A block","Delhi");  
mysql> insert into employee values("Jatin","87/2 D block","Noida");  
mysql> insert into employee values("Garima","74/2 F block","Banglore");  
mysql> insert into employee values("Suresh","54/2 G block","Lucknow");  
mysql> insert into employee values("Kapil","347-5 A block","Noida");  
mysql> insert into employee values("Pawan","65/8 V block","Rishikesh");  
mysql> insert into employee values("Nikhil","62/7 d block","Delhi");  
mysql> insert into employee values("Nupur","91/8 C block","Banglore");
```

```
mysql> insert into company values("Samba Bank","Delhi");  
mysql> insert into company values("NCB Bank","Rishikesh");  
mysql> insert into company values("Axis Bank","Noida");
```

```
mysql> insert into company values("SBI bank","Lucknow");
mysql> insert into company values("Kotak Bank","Banglore");
```

```
mysql> insert into works values("Sakshi","Samba Bank", 20000);
mysql> insert into works values("Gaurav","NCB Bank",15000);
mysql> insert into works values("Rahul","Samba Bank",5000);
mysql> insert into works values("Jatin","SBI Bank",8000);
mysql> insert into works values("Garima","Axis Bank",10000);
mysql> insert into works values("Suresh","NCB Bank",20000);
mysql> insert into works values("Kapil","Kotak Bank",15000);
mysql> insert into works values("Pawan","Axis Bank",20000);
mysql> insert into works values("Nikhil","SBI Bank",12000);
mysql> insert into works values("Nupur","Kotak Bank",18000);
```

(a) Primary Key- Person_name in table employee
 Company_name in table company
Foreign Key- Person_name in table works
 Company_name in table works
 Person_name in table manages

(b) mysql> alter table employee add column email varchar(20);

(c) mysql> select distinct(manager_name) from manages as m, works as w where
m.person_name=w.person_name and (w.company_name="Samba bank" or
w.Company_name="NCB Bank");

(d) mysql> select e.Person_name, e.Street, e.City, w.salary from employee as e, works as w
where e.person_name=w.person_name and w.company_name="Samba Bank" and
w.salary>10000;

(e) mysql> select e.person_name from employee as e, works as w, company as c where
e.person_name=w.person_name and e.city=c.city and w.company_name=c.company_name;

(f) mysql> select company_name, max(salary), min(salary), avg(salary) from works group by
company_name;

(g) mysql> select company_name, sum(salary), count(company_name) as "number of
employees" from works group by company_name;

(h) mysql> select company_name,max(salary) from works;

Ques 5.

```
mysql> create database product;
```

```
mysql> use product;
```

```
mysql> create table suppliers(
```

- > Sno int(8) primary key,
- > Sname varchar(20) not null,
- > Status char(20) not null,
- > Scity char(30) not null);

```
mysql> create table Parts(
```

- > PNo int(8) primary key,
- > Pname varchar(20) not null,
- > Colour varchar(20) not null,
- > Weight int(4) not null,
- > City char(20) not null);

```
mysql> create table Project(
```

- > Jno int(8) Primary key,
- > Jname char(20) not null,
- > Jcity char(20) not null);

```
mysql> create table Shipment(
```

- > Sno varchar(20) not null,
- > Pno int(8) not null,
- > Jno int(8) not null,
- > Quantity int(8) not null,
- > foreign key(Sno) references suppliers(Sno),
- > foreign key(Pno) references Parts(Pno),
- > Foreign key(Jno) references Project(Jno));

```
mysql> insert into suppliers values("101","S1",30,"London");
```

```
mysql> insert into suppliers values("102","S2",19,"New York");
```

```
mysql> insert into suppliers values("103","S1",22,"Paris");
```

```
mysql> insert into suppliers values("104","S2",70,"Los Angeles");
```

```
mysql> insert into suppliers values("104","S2",70,"Los Angeles");
```

```
mysql> insert into parts values( "501","P1","Black",16,"Paris");
```

```
mysql> insert into parts values( "502","P2","Red",40,"London");
```

```
mysql> insert into parts values( "503","P3","Gray",20,"London");
```



```
mysql> insert into parts values( "503","P2","Green",60,"Singapore");
mysql> insert into parts values( "505","P2","Black",10,"New York");
```

```
mysql> insert into project values(1001,"J1","London");
mysql> insert into project values(1002,"J2","New York");
mysql> insert into project values(1003,"J3","New York");
mysql> insert into project values(1004,"J4","Singapore");
mysql> insert into project values(1005,"J4","Delhi");
```

```
mysql> insert into shipment values(101,504,1002,250);
mysql> insert into shipment values(103,505,1003,100);
mysql> insert into shipment values(105,502,1003,500);
mysql> insert into shipment values(101,503,1001,300);
mysql> insert into shipment values(102,501,1005,750);
mysql> insert into shipment values(101,501,1002,100);
```

(a) Primary Key- Sno in table Suppliers
Pno in table Parts
Jno in table Project

Foreign Key- Sno in table Shipment
Pno in table Shipment
Jno in table Shipment

(b) mysql> select Sno from suppliers where scity="Paris" and Status>20;

(c) mysql> Select * from suppliers where Sno in(select Sno from shipment where Pno in(select Pno from parts where Pname="P2")) Order by sno;

(d) mysql> Select Sname from suppliers where Sno in(Select distinct sno from shipment where Pno in(select Pno from parts where Pname!="P2"));

(e) mysql> select s.Sno, s.Pno, s.Jno, s.Quantity, s.quantity*p.weight as "Total_shipment_weight" from shipment as s, parts as p where s.pno=p.pno;

(f) mysql> Select * from shipment where quantity between 300 and 750;

(g) mysql> select Pno from parts where weight>16 or pno in(select pno from shipment where sno in(select s.sno from shipment as s, suppliers as su where s.sno=su.sno and su.sname="S2"));

(h) mysql> select city from parts where colour="Red" and Pno in(select pno from shipment where quantity>5);

(i) mysql> select * from parts where pno in(select Pno from shipment where sno in(select sno from suppliers where Scity="London"));

(j) mysql> select Pno from shipment where sno in(select sno from suppliers where scity="London") and Jno in(Select jno from project where Jcity="London");

(k) mysql> select count(distinct(Jno)) as "No. of Project Supplied by supplier S1" from shipment where sno in(select sno from suppliers where Sname="S1");

(l) mysql> select count(*) from parts where Pno in(Select Pno from shipment where sno in(select Sno from suppliers where sname ="S1")) and Pname="P1";
