DBMS

Practicals

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Q #1:

mysql> create database du\_library;

mysql> use du\_library;

mysql> create table LibraryBooks(

-> Accession\_Number decimal(10,5) primary key,

-> Title varchar(20) not null,

-> Author varchar(20) not null,

-> Department varchar(30) 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));

Q (a)Primary Key- Accession\_Number in table LibraryBooks

Foreign Key- Accession\_Number in table IssuedBooks

mysql> insert into LibraryBooks values(51235.56,"Introduction to Matrices","Ehsan Karim","ECO",'1997-01-12',105.00);

mysql> insert into LibraryBooks values(21826.46,"Database System Concepts","Ashu Singh","CS",'2001/05/30',620.00);

mysql> insert into LibraryBooks values(121.4345,"Fundamental of History","Abhisake Kaim","History",'2005/03/31',550.00);

mysql> insert into LibraryBooks values(76389.4647,"Programing in R","Navathe","CS",'2002/07/21',499.00);

mysql> insert into LibraryBooks values(6737.84,"Discrete Maths","R. Kapoor","Mathematics",'1999/09/04',450.00);

mysql> insert into IssuedBooks values( 21826.46,"Rahul ");

mysql> insert into IssuedBooks values( 121.4345,"Sunam");

mysql> insert into IssuedBooks values( 6737.84,"Basanty");

mysql> insert into IssuedBooks values( 21826.46," gabar");

mysql> insert into IssuedBooks values( 76389.4647,"Newton");

Q(b) mysql> set foreign\_key\_checks=Off;

mysql> delete from issuedbooks where accession\_number=21826.46;

mysql> delete from librarybooks where title="Database System Concepts";

mysql> set foreign\_key\_checks=on;

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

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

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

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

Q(g) mysql> select Title from librarybooks where price<500 and purchase\_date between '1999/01/01' and '2004/01/01'; 2.

Q #2:

mysql> create database cs\_student;

mysql> use cs\_student;

mysql> create table personal\_information(

-> 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,

-> Attendence int(3) not null,

-> Marks int(3) not null,

-> foreign key(roll\_no) references personal\_information(roll\_no),

-> foreign key(paper\_code) references Paper\_details(paper\_code));

Q (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\_information values(1201,"Amit shah",'2001-01-04',"Delhi",91,9102829875);

mysql> insert into personal\_information values(1205,"Anuj Joshi",'2001-04-29',"Uttarakhand",89,9748483743);

mysql> insert into personal\_information values(1209," AB agrwal",'2000-03-19',"Delhi",94,9837643368);

mysql> insert into personal\_information values(1214,"Ishani",'2001-09-21',"Uttar Pradesh",97,9637453672);

mysql> insert into personal\_information values(1219,"Poonam bhatia",'2001-11-09',"Delhi",92,9764563726);

mysql> insert into paper\_details value(1,"Descriptive Statistics");

mysql> insert into paper\_details value(2,"English Communication");

mysql> insert into paper\_details value(3,"Algebra");

mysql> insert into paper\_details value(4,"Introduction to Matrices");

mysql> insert into paper\_details value(5,"Database management system");

mysql> insert into Academic\_details values(1201,2,80,70);

mysql> insert into Academic\_details values(1205,2,70,90);

mysql> insert into Academic\_details values(1214,2,65,91);

mysql> insert into Academic\_details values(1214,2,65,91);

mysql> insert into Academic\_details values(1219,1,75,65);

Q(b) mysql> select pd.paper\_code, pd.nameofpaper, pi.name from paper\_details as pd, personal\_information as pi where paper\_code=2 and pi.roll\_no in(select roll\_no from academic\_details where paper\_code=2 and attendence>75 and marks>60);

Q (c) mysql> select name from personal\_information as pi, academic\_details as ad where pi.roll\_no=ad.roll\_no and ad.marks>60 and ad.paper\_code=1 and pi.Address="Delhi";

Q (d) mysql> select pi.name, ad.attendence, ad.marks from personal\_information as pi, academic\_details as ad where pi.roll\_no=ad.roll\_no;

Q (e) mysql> select name from personal\_information 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));

Q #3:

mysqI> create database twowheeler;

mysqI> create table customer(

-> Custld varchar(20) primary key,

-> email varchar(50) not null,

-> Name char(30) not null,

-> phone varchar(10) unique,

-> ReferrerlD varchar(20));

mysqI> create table BicycleModel(

-> ModelNo varchar(10) primary key,

-> Manufacturer Char(20) not null,

-> Style Varchar(20) not null);

mysqI> create table Bicycle(

-> Bicycleld varchar(20) primary key,

-> DatePurchased date not null,

-> Color Char(10) not null,

-> Custld varchar(20) not null,

-> ModelNo varchar(10) not null,

-> foreign key(Custld) references customer(Custld),

-> foreign key(ModeINo) references BicycIeModeI(ModeINo));

mysqI> create table Service(

-> StartDate date not null,

-> Bicycleld varchar(20) not null,

-> EndDate date not null,

-> Foreign key(Bicycleld) references Bicycle(Bicycleld));

1. Primary Key - Custld in table Customer

ModelNo in table BicycleModel Bicycleld in table Bicycle

Foreign Key- Custld in table Bicycle

ModelNo in table Bicycle Bicycleld in table Service

mysqI> insert into customer values(1001,"Ehsanullahkarim7@gmaiI.com","Ehsankarim",9203115689,"C1");

mysqI> insert into customer values(1002,"ak2000@gmaiI.com","anhisaqu Kaim",8373876327,"A2");

mysqI> insert into customer values([1003,"Ashu007@gmaiI.com","](mailto:1003,%22Ashu007@gmaiI.com%22,%22%20) Ashu Singh",9399472888,"C3");

mysqI> insert into customer values([1004,"sumanss7368@gmaiI.com","Suman](mailto:sumanss7368@gmaiI.com)Singh",8293765392,"B7");

mysqI> insert into customer values([1005,"reenasingh3753@gmaiI.com","Reena](mailto:reenasingh3753@gmaiI.com) Singh",9375428765,"C5");

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

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

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

1. mysqI> Select \* from customer where custlD in(Select custid from bicycle where modelno in(select Modelno from bicyclemodel where manufacturer="Honda"));
2. mysqI> Select \* from bicyclemodel where modelno in(select modelno from bicycle where custid in(select custid from customer where referrerId="C1"));
3. mysqI> select bm.manufacturer from bicycle as bi, bicyclemodel as bm where bi.modeIno=bm.modelno and bi.coIor="red";

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

Q #4

(This question is done in word)

create database employees;

use employess;

create table employee(

person\_name varchar(50) primary key,

street varchar(50),

city varchar(50));

create table company (

company\_name varchar(50) primary key,

city varchar(50));

create table works(

person\_name varchar(50),

company\_name varchar(50),

salary decimal(10,3),

foreign key (person\_name) references employee(person\_name) on delete cascade,

foreign key(company\_name) references company(company\_name) on delete cascade);

create table manages(

person\_name varchar(50),

manager\_name varchar(50),

foreign key (person\_name) references employee(person\_name) on delete cascade);

insert into employees values

(‘Helen’,’23 Hudson’,’Delhi’),

(‘Harry’,’24 Milton’, ‘Dehradun’),

(‘Henry’, ’24 Lane’,’Delhi’),

(‘John’, ’12 Lane’,’Delhi’),

(‘jake’,’1 Hudson’,’Gurgaon’));

Insert into company values

(‘Samba Bank’,’Delhi’),

(‘Axis Bank’,’Kerala’),

(‘SBI Bank’,’Delhi’),

(‘NCB bank’,’Noida’),

(‘Samba Bank’,’Gurgaon’);

Insert into works values

(‘Henry’,’Samba bank’,200000),

(‘Helen’,’Axis Bank’,’500000,

(‘Harry’ ,’NCB bank’, 3400000),

(‘John’, ‘Axis bank’, 45000),

(‘Jake’,’NCB bank’,450000);

Insert into manages values

(‘Henry’,’Tina’),

(‘Harry’,’John’),

(‘Helen’,’ Alan’),

(‘John’, ‘Daisy’),

(‘Jake’,’Jake’);

1. primary key: person\_name in table employee, company\_name in table company

foreign key: person\_name from table works, company\_table in table works, person\_name in table manages

1. alter table employee

add column email varchar(20);

1. select distinct(manager\_name) from manages m, works w where m.person\_name=w.person\_name and (w.company\_name="Samba bank" or w.Company\_name="NCB Bank");
2. select e.person\_name, e.street, e.city, w.salary from employee e, works w where e.person\_name=w.person\_name and w.company\_name="Samba Bank" and w.salary>10000;
3. select e.person\_name from employee e, works w, company c where e.person\_name=w.person\_name and e.city=c.city and w.company\_name=c.company\_name;
4. select company\_name, max(salary), min(salary), avg(salary) from works

group by company\_name;

1. select company\_name, sum(salary), count(company\_name) as "number of employees" from works group by company\_name;
2. select company\_name,

max(salary) from works;

Q # 5:

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"; |