Assignment:- 3

**Set A:**

mysql> create table student(s\_no int primary key,s\_name varchar(20),s\_class varchar(10) NOT NULL,s\_addr varchar(30));

mysql> insert into student values(1,'Mahi','fybca','pune'),(2,’ raj ','fybca','wagholi'),(3,' meera ','tybca','cidco'),(4,'bhavika','sybca','kothrud'),(5,'purva','tybca','alandi');

mysql> select \* from student;

+------+---------+---------+---------+

| s\_no | s\_name | s\_class | s\_addr |

+------+---------+---------+---------+

| 1 | Mahi | fybca | pune |

| 2 | raj| fybca | wagholi |

| 3 | meera | tybca | cidco |

| 4 | bhavika | sybca | kothrud |

| 5 | purva | tybca | alandi |

+------+---------+---------+---------+

mysql> create table teacher(t\_no int primary key,t\_name varchar(20),qualification varchar(15),experience int);

mysql> insert into teacher values(1,'niraj','phd',12,'os'),(2,'toshita','mca',10,'dbms'),(3,'vaishnavi','msc',13,'web\_technology'),(4,'ritu','phd',5,'computer\_network'),(5,'arnav','phd',8,'data\_structures');

mysql> select \* from teacher;

+------+-----------+---------------+------------+------------------+

| t\_no | t\_name | qualification | experience | subject |

+------+-----------+---------------+------------+------------------+

| 1 | niraj | phd | 12 | os |

| 2 | toshita | mca | 10 | dbms |

| 3 | vaishnavi | msc | 13 | web\_technology |

| 4 | ritu | phd | 5 | computer\_network |

| 5 | arnav | phd | 8 | data\_structures |

+------+-----------+---------------+------------+------------------+

create table s\_t ( s\_no int references student(s\_no), t\_no int references teacher(t\_no) , subject

varchar(30));

CREATE TABLE

insert into s\_t values(1,101,'DBMS');

INSERT 0 1

insert into s\_t values(2,101,'computer networks');

INSERT 0 1

insert into s\_t values(3,102,'computer science');

INSERT 0 1

insert into s\_t values(4,103,'python');

INSERT 0 1

insert into s\_t values(5,104,'java');

INSERT 0 1

insert into s\_t values(5,105,'c');

INSERT 0 1

select \* from s\_t;

s\_no | t\_no | subject

------+------+-------------------

1 | 101 | DBMS

2 | 101 | computer networks

3 | 102 | computer science

4 | 103 | python

5 | 104 | java

5 | 105 | c

(6 rows)

select t\_name from teacher,student,s\_t where teacher.t\_no=s\_t.t\_no and student.s\_no=s\_t.s\_no

and s\_name='tejal';

t\_name

--------

shamal

(1 row)

select s\_name from teacher,student,s\_t where teacher.t\_no=s\_t.t\_no and student.s\_no=s\_t.s\_no

and t\_name='mrunal';

s\_name

--------

nupur

(1 row)

select \* from teacher where t\_name like 'T%';

t\_no | t\_name | qualification | experience

------+--------+---------------+------------

(0 rows)

select \* from teacher where t\_name like 's%';

t\_no | t\_name | qualification | experience

------+--------+---------------+------------

101 | shital | phd | 7

102 | shamal | BEd | 8

105 | sakshi | BEd | 5

(3 rows)

select t\_name from teacher,s\_t where teacher.t\_no=s\_t.t\_no and subject='DBMS';

t\_name

--------

shital

(1 row)

select \* from teacher where qualification='phd';

t\_no | t\_name | qualification | experience

------+-----------+---------------+------------

101 | shital | phd | 7

103 | vaishnavi | phd | 9

(2 rows)

select \* from student where s\_addr='pune';

s\_no | s\_name | s\_class | s\_addr

------+--------+---------+--------

1 | rutuja | FYBCS | pune

(1 row)

select max(experience) from teacher;

max

-----

9

(1 row)

select s\_name from student where s\_class='FYBCA' and s\_addr='kothrud';

s\_name

--------

tejal

(1 row)

select s\_name from student where s\_name like '\_\_\_\_\_\_';

s\_name

--------

rutuja

(1 row)

select t\_name,subject, count(s\_no) from teacher,s\_t where teacher.t\_no=s\_t.t\_no group by

subject,t\_name;

t\_name | subject | count

-----------+-------------------+-------

shital | computer networks | 1

sakshi | c | 1

vaishnavi | python | 1

shital | DBMS | 1

shamal | computer science | 1

mrunal | java | 1

(6 rows)

**Person-Area Database**

Consider the following Entities and their Relationships for Person-Area database. Person (pno integer, pname varchar (20), birthdate date, income money)

Area (aname varchar (20), area\_type varchar (5))

An area can have one or more persons living in it, but a person belongs to exactly one area.

Constraints: Primary Key, area\_type can be either ‘urban’ or ‘rural’

create table areaa(aname varchar(20) primary key, area\_type varchar(5));

CREATE TABLE

insert into areaa values('pune','urban');

INSERT 0 1

insert into areaa values('mumbai','urban');

INSERT 0 1

insert into areaa values('khed','rural');

INSERT 0 1

insert into areaa values('bhosari','rural');

INSERT 0 1

insert into areaa values('moshi','rural');

INSERT 0 1

insert into areaa values('goa','urban');

INSERT 0 1

select \* from areaa;

aname | area\_type

---------+-----------

pune | urban

mumbai | urban

khed | rural

bhosari | rural

moshi | rural

goa | urban

(6 rows)

create table person(pno integer primary key, pname varchar(20), birthdate date, income money,aname varchar(20),foreign key (aname) references areaa(aname) );

CREATE TABLE

insert into person values(11,'rutuja','2001-04-01',45000,'pune');

INSERT 0 1

insert into person values(12,'tejal','2000-08-05',50000,'mumbai');

INSERT 0 1

insert into person values(13,'mrunal','1998-07-05',68000,'moshi');

INSERT 0 1

insert into person values(14,'kajal','1996-11-07',70000,'khed');

INSERT 0 1

insert into person values(15,'shweta','2000-12-03',34000,'bhosari');

INSERT 0 1

select \* from person;

pno | pname | birthdate | income | aname

-----+--------+------------+------------+---------

11 | rutuja | 2001-04-01 | ₹45,000.00 | pune

12 | tejal | 2000-08-05 | ₹50,000.00 | mumbai

13 | mrunal | 1998-07-05 | ₹68,000.00 | moshi

14 | kajal | 1996-11-07 | ₹70,000.00 | khed

15 | shweta | 2000-12-03 | ₹34,000.00 | bhosari

(5 rows)

select pname from person where aname = 'pune';

pname

--------

rutuja

(1 row)

select \* from person where pname like 'm%';

pno | pname | birthdate | income | aname

-----+--------+------------+------------+-------

13 | mrunal | 1998-07-05 | ₹68,000.00 | moshi

(1 row)

select aname, count(\*) from person where income > '50000' group by aname;

aname | count

-------+-------

khed | 1

moshi | 1

(2 rows)

select pname from person where income between '40000' and '70000';

pname

--------

rutuja

tejal

mrunal

kajal

(4 rows)

select pname from person where extract(month from birthdate) = 8;

pname

-------

tejal

(1 row)

insert into person values(16,'aditi','2003-03-19',68000,'mumbai');

INSERT 0 1

select \* from person;

pno | pname | birthdate | income | aname

-----+--------+------------+------------+---------

11 | rutuja | 2001-04-01 | ₹45,000.00 | pune

12 | tejal | 2000-08-05 | ₹50,000.00 | mumbai

13 | mrunal | 1998-07-05 | ₹68,000.00 | moshi

14 | kajal | 1996-11-07 | ₹70,000.00 | khed

15 | shweta | 2000-12-03 | ₹34,000.00 | bhosari

16 | aditi | 2003-03-19 | ₹68,000.00 | mumbai

(6 rows)

select pname from person where income in (select income from person group by income having count(\*) > 1);

pname

--------

mrunal

aditi

(2 rows)

select aname, max(income) from person group by aname;

aname | max

---------+------------

mumbai | ₹68,000.00

bhosari | ₹34,000.00

khed | ₹70,000.00

moshi | ₹68,000.00

pune | ₹45,000.00

(5 rows)

update person set income = income+income \* 0.10 where aname in (select aname from area where area\_type = 'rural');

UPDATE 2

select \* from person;

pno | pname | birthdate | income | aname

-----+--------+------------+------------+---------

11 | rutuja | 2001-04-01 | ₹45,000.00 | pune

12 | tejal | 2000-08-05 | ₹50,000.00 | mumbai

15 | shweta | 2000-12-03 | ₹34,000.00 | bhosari

16 | aditi | 2003-03-19 | ₹68,000.00 | mumbai

13 | mrunal | 1998-07-05 | ₹8,228.00 | moshi

14 | kajal | 1996-11-07 | ₹8,470.00 | khed

(6 rows)

delete from person where income < '40000';

DELETE 3

select \* from person;

pno | pname | birthdate | income | aname

-----+--------+------------+------------+--------

11 | rutuja | 2001-04-01 | ₹45,000.00 | pune

12 | tejal | 2000-08-05 | ₹50,000.00 | mumbai

16 | aditi | 2003-03-19 | ₹68,000.00 | mumbai

(3 rows)

select \* from person order by pname desc;

pno | pname | birthdate | income | aname

-----+--------+------------+------------+--------

12 | tejal | 2000-08-05 | ₹50,000.00 | mumbai

11 | rutuja | 2001-04-01 | ₹45,000.00 | pune

16 | aditi | 2003-03-19 | ₹68,000.00 | mumbai

(3 rows)

**SET B** (Number of Slot – 1)

Movie-Actor Database

Consider the following Entities and their Relationships for Movie-Actor database. Movie (m\_name varchar (25), release\_year integer, budget money)

Actor (a\_name varchar (20), role char(20), charges money, a\_address varchar (20))

Producer (producer\_id integer, p\_name char (30), p\_address varchar (20))

Each actor has acted in one or more movies. Each producer has produced many movies and each movie can be produced by more than one producers. Each movie has one or more actors acting in it, in different roles.

Constraints: Primary Key,role and p\_name should not be null.

create table movie (m\_name varchar(25) primary key, release\_year integer, budget money);

CREATE TABLE

insert into movie values('anand',1971,6000000);

INSERT 0 1

insert into movie values('RRR',2022,550000000);

INSERT 0 1

insert into movie values('adipurush',2023,500000000);

INSERT 0 1

insert into movie values('saahoo',2019,350000000);

INSERT 0 1

insert into movie values('2.0',2018,570000000);

INSERT 0 1

select \* from movie;

m\_name | release\_year | budget

-----------+--------------+-----------------

anand | 1971 | ₹6,000,000.00

RRR | 2022 | ₹550,000,000.00

adipurush | 2023 | ₹500,000,000.00

saahoo | 2019 | ₹350,000,000.00

2.0 | 2018 | ₹570,000,000.00

(5 rows)

create table actorr (a\_name varchar(20) primary key, role char(20) not null, charges money,a\_address varchar(20));

CREATE TABLE

insert into actorr values('rajesh khanna','lead role',100000,'mumbai');

INSERT 0 1

insert into actorr values('ramcharan','lead role',30000000,'tamilnadu');

INSERT 0 1

insert into actorr values('prbhas','lead role',67000000,'karnatak');

INSERT 0 1

insert into actorr values('shradhha kappor','support role',23000000,'mumbai');

INSERT 0 1

insert into actorr values('akshay kumar','lead role',56000000,'goa');

INSERT 0 1

select \* from actorr;

a\_name | role | charges | a\_address

-----------------+----------------------+----------------+-----------

rajesh khanna | lead role | ₹100,000.00 | mumbai

ramcharan | lead role | ₹30,000,000.00 | tamilnadu

prbhas | lead role | ₹67,000,000.00 | karnatak

shradhha kappor | support role | ₹23,000,000.00 | mumbai

akshay kumar | lead role | ₹56,000,000.00 | goa

(5 rows)

create table producer (producer\_id integer primary key, p\_name char(30) not null, p\_address varchar(20));

CREATE TABLE

insert into producer values(1,'Hrishikesh Mukherjee','mumbai');

INSERT 0 1

insert into producer values(2,'D.V.V.Danayya','pune');

INSERT 0 1

insert into producer values(3,'vinod bhanushali','karnataka');

INSERT 0 1

insert into producer values(4,'om raut','chennai');

INSERT 0 1

insert into producer values(5,'shubhanr','bengluru');

INSERT 0 1

select \* from producer;

producer\_id | p\_name | p\_address

-------------+--------------------------------+-----------

1 | Hrishikesh Mukherjee | mumbai

2 | D.V.V.Danayya | pune

3 | vinod bhanushali | karnataka

4 | om raut | chennai

5 | shubhanr | bengluru

(5 rows)

create table movie\_actorr (m\_name varchar(25), a\_name varchar(20),primary key (m\_name, a\_name), foreign key (m\_name)references movie(m\_name),foreign key (a\_name) references actorr(a\_name));

CREATE TABLE

insert into movie\_actorr values('anand','rajesh khanna');

INSERT 0 1

insert into movie\_actorr values('RRR','ramcharan');

INSERT 0 1

insert into movie\_actorr values('adipurush','prbhas');

INSERT 0 1

insert into movie\_actorr values('saahoo','shradhha kappor');

INSERT 0 1

insert into movie\_actorr values('2.0','akshay kumar');

INSERT 0 1

insert into movie\_actorr values('anand','prbhas');

INSERT 0 1

insert into movie\_actorr values('RRR','akshay kumar');

INSERT 0 1

select \* from movie\_actorr;

m\_name | a\_name

-----------+-----------------

anand | rajesh khanna

RRR | ramcharan

adipurush | prbhas

saahoo | shradhha kappor

2.0 | akshay kumar

anand | prbhas

RRR | akshay kumar

(7 rows)

create table movie\_producer (m\_name varchar(25), producer\_id integer,primary key (m\_name, producer\_id), foreign key (m\_name) references movie(m\_name), foreign key (producer\_id) references producer(producer\_id));

CREATE TABLE

insert into movie\_producer values('anand','1');

INSERT 0 1

insert into movie\_producer values('RRR','2');

INSERT 0 1

insert into movie\_producer values('adipurush','3');

INSERT 0 1

insert into movie\_producer values('saahoo','4');

INSERT 0 1

insert into movie\_producer values('2.0','5');

INSERT 0 1

insert into movie\_producer values('RRR','3');

INSERT 0 1

insert into movie\_producer values('anand','4');

INSERT 0 1

insert into movie\_producer values('2.0','2');

INSERT 0 1

select \* from movie\_producer;

m\_name | producer\_id

-----------+-------------

anand | 1

RRR | 2

adipurush | 3

saahoo | 4

2.0 | 5

RRR | 3

anand | 4

2.0 | 2

(8 rows)

select a\_name, m\_name from movie\_actorr;

a\_name | m\_name

-----------------+-----------

rajesh khanna | anand

ramcharan | RRR

prbhas | adipurush

shradhha kappor | saahoo

akshay kumar | 2.0

prbhas | anand

akshay kumar | RRR

(7 rows)

select m\_name from movie\_producer where producer\_id = (select producer\_id from producer where p\_name = 'om raut');

m\_name

--------

saahoo

anand

(2 rows)

select min(budget) from movie;

min

---------------

₹6,000,000.00

(1 row)

select \* from movie where budget = (select min(budget) from movie);

m\_name | release\_year | budget

--------+--------------+---------------

anand | 1971 | ₹6,000,000.00

(1 row)

select m\_name from movie where release\_year > 2015;

m\_name

-----------

RRR

adipurush

saahoo

2.0

(4 rows)

select count(\*), sum(budget) from movie where release\_year = 2018;

count | sum

-------+-----------------

1 | ₹570,000,000.00

(1 row)

select a\_name from movie\_actorr group by a\_name having count(m\_name) = (select min(movie\_count) from (select count(m\_name) as movie\_count from movie\_actorr group by a\_name) subquery);

a\_name

-----------------

rajesh khanna

shradhha kappor

ramcharan

(3 rows)

select m\_name from movie\_producer group by m\_name having count(producer\_id) > 1;

m\_name

--------

RRR

anand

2.0

(3 rows)

select a\_name from actorr where role = 'lead role';

a\_name

---------------

rajesh khanna

ramcharan

prbhas

akshay kumar

(4 rows)

select distinct a\_name from movie\_actorr where m\_name in (select m\_name from movie\_actorr where a\_name = 'akshay kumar');

a\_name

--------------

akshay kumar

ramcharan

(2 rows)

select count(a\_name) from movie\_actorr where m\_name = 'anand';

count

-------

2

(1 row)

Q.2)

Bank database

Consider the following Entities and their Relationships for Bank database.

Branch (bid integer, brname char (30), brcity char (10))

Customer (cno integer, cname char (20), caddr char (35), city char(20))

Loan\_application (lno integer, l\_amt\_require money, l\_amt\_approved money, l\_date date)

The relationships are as follows:

Branch, Customer, Loan\_application are related with ternary relationship.

Ternary (bid integer, cno integer, lno integer).

create table branch(bid int primary key, brname varchar(30), brcity char(10));

CREATE TABLE

insert into branch values(1,'nagar','Ahemdnagar');

INSERT 0 1

insert into branch values(2,'karve nagar','pune');

INSERT 0 1

insert into branch values(3,'vashi','mumbai');

INSERT 0 1

insert into branch values(4,'surat','gujrat');

INSERT 0 1

insert into branch values(5,'shivaji nagar','pune');

INSERT 0 1

select \* from branch;

bid | brname | brcity

-----+---------------+------------

1 | nagar | Ahemdnagar

2 | karve nagar | pune

3 | vashi | mumbai

4 | surat | gujrat

5 | shivaji nagar | pune

(5 rows)

create table customer(cno int primary key, cname char(20), caddr char(35), city char(20));

CREATE TABLE

insert into customer values(11,'rutuja','karve nagar','pune');

INSERT 0 1

insert into customer values(12,'omkar','vashi','mumbai');

INSERT 0 1

insert into customer values(13,'rushikesh','nagar','Ahemdnagar');

INSERT 0 1

insert into customer values(14,'divya','khed','ratnagiri');

INSERT 0 1

insert into customer values(15,'yash','shivaji nagar','pune');

INSERT 0 1

select \* from customer;

cno | cname | caddr | city

-----+----------------------+-------------------------------------+----------------------

11 | rutuja | karve nagar | pune

12 | omkar | vashi | mumbai

13 | rushikesh | nagar | Ahemdnagar

14 | divya | khed | ratnagiri

15 | yash | shivaji nagar | pune

(5 rows)

create table ternary (bid integer, cno integer, lno integer, primary key (bid,cno, lno), foreign key (bid) references branch(bid), foreign key (cno) references customer(cno), foreign key (lno) references loan\_application(lno));

CREATE TABLE

insert into ternary values(1,12,111);

INSERT 0 1

insert into ternary values(2,11,133);

INSERT 0 1

insert into ternary values(3,13,144);

INSERT 0 1

insert into ternary values(4,15,122);

INSERT 0 1

insert into ternary values(5,14,155);

INSERT 0 1

select \* from ternary;

bid | cno | lno

-----+-----+-----

1 | 12 | 111

2 | 11 | 133

3 | 13 | 144

4 | 15 | 122

5 | 14 | 155

(5 rows)

select sum(l\_amt\_approved) from loan\_application l join ternary t on l.lno = t.lno where t.bid = (select bid from branch where brname = 'nagar');

sum

-------------

₹180,000.00

(1 row)

select cname from customer c join ternary t on c.cno = t.cno where t.bid = (select bid from branch where brname = 'karve nagar');

cname

----------------------

rutuja

(1 row)

select distinct c.cname from customer c join ternary t on c.cno = t.cno join branch b on t.bid = b.bid where c.city = b.brcity;

cname

----------------------

rutuja

(1 row)

select c.cname from customer c join ternary t on c.cno = t.cno join loan\_application l on t.lno = l.lno where l.l\_amt\_approved<l.l\_amt\_require;

cname

----------------------

omkar

rutuja

rushikesh

yash

divya

(5 rows)

select cname from customer c join ternary t on c.cno = t.cno where t.bid = (select bid from branch where brcity = 'mumbai');

cname

----------------------

rushikesh

(1 row)

select c.cname, b.brname from customer c join ternary t on c.cno = t.cno join loan\_application l on t.lno = l.lno join branch b on t.bid = b.bid where extract(month from l.l\_date) = 6;

cname | brname

----------------------+--------

omkar | nagar

(1 row)

select c.cname from customer c join ternary t on c.cno = t.cno join loan\_application l on t.lno = l.lno where l.l\_amt\_require > '100000';

cname

----------------------

omkar

rutuja

rushikesh

yash

divya

(5 rows)

select max(l\_amt\_approved) from loan\_application;

max

-------------

₹560,000.00

(1 row)

select cname from customer c join ternary t on c.cno = t.cno where t.bid = (select bid from branch where brname = 'karve nagar');

cname

----------------------

rutuja

(1 row)

select c.cname from customer c join ternary t on c.cno = t.cno join loan\_application l on t.lno = l.lno where l.l\_amt\_require between '200000' and '400000';

cname

----------------------

omkar

rutuja

yash

(3 rows)

select b.brname, c.cname from customer c join ternary t on c.cno =t.cno join branch b on t.bid = b.bid;

brname | cname

---------------+----------------------

nagar | omkar

karve nagar | rutuja

vashi | rushikesh

surat | yash

shivaji nagar | divya

(5 rows)