

**DBMS LAB PROGRAMS: SUTEJ R JANTALI**  
**20GACSE073**  
**SEM V CSE**

### **1. Library Database**

show databases;

create database library;

use library;

```
create table book(  
book_id int,  
title varchar(20),  
publisher_name varchar(20),  
pub_year date,  
primary key (book_id)  
);
```

```
create table book_authors(  
book_id int,  
author_name varchar(20),  
primary key (author_name),  
foreign key(book_id) references book(book_id) on delete cascade  
);
```

```
create table publisher(  
pub_id int,  
nam varchar(20),  
address varchar(40),  
phone int(10),  
primary key(pub_id)  
);
```

```
create table book_copies(  
book_id int,  
branch_id int(4),  
no_of_copies int(5),  
foreign key(book_id) references book(book_id) on delete cascade,  
primary key(branch_id)  
);
```

```
create table book_lending(  
book_id int,  
branch_id int(4),  
card_no int(4),  
date_out date,  
due_date date,  
foreign key(book_id) references book(book_id) on delete cascade,  
foreign key(branch_id) references book_copies(branch_id) on delete cascade  
);
```

```
create table library_branch(  
branch_id int(4),  
branch_name varchar(20),  
address varchar(40),  
foreign key(branch_id) references book_copies(branch_id) on delete cascade  
);
```

```
select a.book_id, a.title, a.publisher_name, b.author_name, c.no_of_copies  
from book a, book_authors b, book_copies c  
where a.book_id = b.book_id and a.book_id = c.book_id and b.book_id = c.book_id;
```

```
INSERT INTO publisher VALUES (300,'CENTRAL LIBRARY','BANGALORE', 998866448);  
INSERT INTO publisher VALUES (301,'KAROL BAGH','NEW DELHI', 988907656);  
INSERT INTO publisher VALUES (302,'SAPNA HOUSE','HYDERABAD', 789203533);  
INSERT INTO publisher VALUES (303,'INNOVATIVE','CHENNAI',897086234);  
INSERT INTO publisher VALUES (304,'BOOK PLANETARIA','BANGALORE',775612023);
```

```
insert into book values(100,'xyz','someone','2019-02-20'),  
(101,'abc','none','2019-05-20'),  
(102,'def','happy','2019-06-20'),  
(103,'ghi','sad','2019-07-20'),  
(104,'jkl','sorrow','2019-07-20');
```

```
insert into book_authors values(100,'raj'),  
(101,'rajesh'),  
(102,'sakshat'),  
(103,'shyam'),  
(104,'jay');  
insert into book_copies  
values(100,200,500),(101,201,510),(102,202,515),(103,203,520),(104,204,525);
```

```
insert into book_lending values(100,200,300,'2019-05-20','2019-04-20'),
(101,201,301,'2019-06-20','2019-05-20'),
(102,202,302,'2019-07-20','2019-06-20'),
(103,203,303,'2019-08-20','2019-07-20'),
(104,204,304,'2019-09-20','2019-08-20');
```

```
insert into book_lending values (104,204,304,'2019-02-20','2019-01-20'),
(104,204,304,'2019-03-01','2019-02-10'),(104,204,304,'2019-04-01','2019-03-10');
insert into book_lending values (104,204,304,'2019-02-19','2019-01-22');
```

```
insert into library_branch values(200,'shilong','meghalaya'),
(201,'agartala','tripura'),
(202,'aizwal','mizoram'),
(203,'guwahati','assam'),
(204,'itanagar','ap');
```

```
select a.book_id, a.title, a.publisher_name, b.author_name, c.no_of_copies
from book a, book_authors b, book_copies c
where a.book_id = b.book_id and a.book_id = c.book_id;
```

```
select * from book_lending;
select card_no
from book_lending
where date_out between '2019-01-22' and '2019-09-20'
group by card_no having count(*) > 3;
```

```
delete from book
where book_id = 100;
```

```
select * from book;
```

```
create view v as
select pub_year,title
from book
order by pub_year;
```

```
select * from v;
```

```
create view v1 as
select b.book_id, b.publisher_name, c.no_of_copies
from book b, book_copies c, library_branch l
where b.book_id = c.book_id and c.branch_id = l.branch_id;
select * from v1;
```

## 2. Sales Order database

```
create database sales;
```

```
use sales;
```

```
create table salesman(  
  salesman_id int,  
  name varchar(20),  
  city varchar(10),  
  commission int(4),  
  primary key(salesman_id)  
);
```

```
create table customer(  
  customer_id int,  
  cust_name varchar(20),  
  city varchar(10),  
  grade int,  
  salesman_id int,  
  foreign key(salesman_id) references salesman(salesman_id) on delete cascade,  
  primary key(customer_id)  
);
```

```
create table orders(  
  ord_no int,  
  purchase_amt int(4),  
  ord_date date,  
  customer_id int,  
  salesman_id int,  
  foreign key(customer_id) references customer(customer_id) on delete cascade,  
  foreign key(salesman_id) references salesman(salesman_id) on delete cascade,  
  primary key(ord_no)  
);
```

```
insert into salesman values(100,'ram','bangalore',500),(101,'shyam','mangalore',510),  
(102,'raj','bidar',300),(103,'aman','udupi',250),(104,'aditya','hubli',600);
```

```
insert into customer values(200,'abc','bangalore',6,100),(201,'def','raichur',5,101),  
(202,'ghi','hubli',8,103),(203,'jkl','udupi',7,104);  
insert into customer values(205,'xyz','bangalore',6,100);
```

```
insert into customer values(204,'mno','kalaburagi',4,102);
insert into orders values(300,3000,'2020-01-01',200,100);
insert into orders values(301,3500,'2020-02-01',201,101);
insert into orders values(302,4000,'2020-03-01',203,104);
insert into orders values(303,4500,'2020-04-01',202,103);
insert into orders values(304,5000,'2020-05-01',204,102);
```

```
select count(distinct a.customer_id), a.grade
from customer a
group by grade
having a.grade > (select avg(grade)
                  from customer
                  where city = 'bangalore');
```

```
select a.name,a.salesman_id
from salesman a
where 1 < (select count(*)
           from customer b
           where a.salesman_id = b.salesman_id);
```

```
select * from salesman;
select * from customer;
select a.salesman_id, a.name, a.city
from salesman a, customer b
where a.city = b.city
union
select salesman_id, name, 'NO MATCH'
from salesman
where not city= any(select city from customer b);
```

```
create view v as
select a.salesman_id, a.purchase_amt, a.customer_id, a.ord_date, b.cust_name
from orders a, customer b
where a.salesman_id = b.salesman_id
and a.purchase_amt = (select max(c.purchase_amt)
                     from orders c);
```

```
select * from v;
```

```
delete from salesman
where salesman_id = 100;
```

### 3. Movies Database

```
create database movie;
```

```
use movie;
```

```
create table actor(  
  act_id int,  
  act_name varchar(20),  
  act_gender enum('m','f'),  
  primary key(act_id)  
);
```

```
create table director(  
  dir_id int,  
  dir_name varchar(20),  
  dir_phone int(11),  
  primary key(dir_id)  
);
```

```
create table movies(  
  mov_id int,  
  mov_title varchar(20),  
  mov_year date,  
  mov_lang varchar(10),  
  dir_id int,  
  foreign key(dir_id) references director(dir_id),  
  primary key(mov_id)  
);
```

```
create table movie_cast(  
  act_id int,  
  mov_id int,  
  role varchar(20),  
  primary key(act_id,mov_id)  
);
```

```
create table rating(  
  mov_id int,  
  rev_stars int,  
  primary key(mov_id)  
);
```

```
insert into actor
values(100,'raj','m'),(101,'leela','f'),(102,'rishab','m'),(103,'vinod','m'),(104,'riya','f');
```

```
insert into director
values(200,'aman',996662247),(201,'piyush',657894213),(202,'namitha',664559884),(203,'ashn
eer',664559874),(204,'anupam',664488557);
```

```
insert into movies values(300,'abc','2012-01-01','kan',200),(301,'def','2013-03-02','eng',202),
(302,'ghi','2006-05-01','tel',201),(303,'jkl','2003-03-01','tam',203),(304,'mno','2004-04-01','hin',20
4);
```

```
insert into movie_cast
values(101,302,'lead'),(100,301,'side'),(102,303,'supportive'),(103,300,'villain'),(104,304,'side');
insert into movie_cast values(102,302,'lead'),(103,303,'villain');
insert into rating values(300,2),(301,5),(302,4),(303,3),(304,1);
```

```
select a.mov_title
from movies a
where a.dir_id = (select d.dir_id
                  from director d
                  where dir_name = 'aman');
```

```
select mov_title
from movies a, movie_cast b
where a.mov_id = b.mov_id and act_id in (select act_id
                                          from
                                          movie_cast
                                          group by act_id
                                          having count(act_id)>1
                                          );
```

```
select a.act_id,a.act_name
from actor a
join movie_cast c on a.act_id = c.act_id
join movies m on c.mov_id = m.mov_id
where m.mov_year not between '2015-01-01' and '2000-01-01';
```

```
select a.mov_title, b.rev_stars
from movies a, rating b
where a.mov_id = b.mov_id
order by a.mov_title;
```

```
select a.mov_title, b.rev_stars
```





#### **4. College Database**

```
create database college;
```

```
use college;
```

```
create table student(  
  usn int,  
  sname varchar(20),  
  address varchar(20),  
  phone int(11),  
  gender enum('m','f'),  
  primary key(usn)  
);
```

```
create table semsec(  
  ssid int,  
  sem int,  
  sec char,  
  primary key(ssid)  
);
```

```
create table class(  
  usn int,  
  ssid int,  
  primary key(usn,ssid)  
);
```

```
create table subject(  
  subcode int,  
  title varchar(20),  
  sem int,  
  credits decimal(2,1),  
  primary key(subcode)  
);
```

```
create table ia_marks(  
  usn int,  
  subcode int,  
  ssid int,
```

```
test1 int,  
test2 int,  
test3 int,  
finalia int,  
primary key(usn,subcode,ssid)  
);
```

```
insert into student  
values(100,'abc','bangalore',996633321,'m'),(101,'def','mangalore',996644557,'f'),  
(102,'ghi','udupi',662244887,'m'),(103,'jkl','hubli',664477522,'f'),(104,'mno','dharwad',664477855,'  
m');
```

```
insert into semsec values(200,1,'a'),(201,4,'b'),(202,4,'c'),(203,4,'d'),(204,4,'d');
```

```
insert into class values(100,201),(101,200),(102,202),(103,204),(104,203);
```

```
insert into subject  
values(300,'egd',3,4.0),(301,'dbms',4,4.0),(302,'electric',4,5.0),(303,'dsd',4,3.5),(304,'mpmc',3,3.  
5);
```

```
insert into ia_marks  
values(100,300,200,30,40,50,60),(101,301,201,32,38,48,58),(102,302,202,34,36,46,56),(103,30  
3,203,36,34,44,58),(104,304,204,56,12,33,45);
```

```
select *  
from student a  
join  
class c on a.usn = c.usn  
join  
semsec d on c.ssid = d.ssid and d.sem = 4 and d.sec = 'c';
```

```
select a.usn,a.gender, b.sem, b.sec, count(a.gender)  
from student a, semsec b, class c  
where a.usn = c.usn and b.ssid = c.ssid  
group by a.usn,b.sem,b.sec, a.gender  
order by b.sem;
```

```
create view v as  
select a.usn, a.sname, b.subcode, b.title, c.test1  
from student a, subject b, ia_marks c  
where b.subcode = c.subcode and c.usn = 100 and a.usn = 100;  
select * from v;
```

```
select * from ia_marks;
set SQL_SAFE_UPDATES = 0;
update ia_marks
set finalia = (test1+test2+test3 - least(test1,test2,test3))/2;
SET sql_safe_updates = 1;
```

```
select a.usn, a.sname, b.subcode, c.sem, b.finalia,
(
case
when b.finalia between 47 and 50 then 'OUTSTANDING'
when b.finalia between 45 and 47 then 'Avg'
when b.finalia between 40 and 45 then 'weak'
end) as performance
from student a, ia_marks b, semsec c
where a.usn = b.usn and b.ssid = c.ssid;
```

## **5. Company Database**

```
create database company;  
use company;
```

```
create table department(  
  dno int,  
  dname varchar(20),  
  mgrssn int,  
  mgrstartdate date,  
  primary key(dno)  
);  
create table employee(  
  ssn int,  
  name varchar(20),  
  address varchar(20),  
  sex enum('m','f'),  
  salary int(10),  
  superssn int,  
  dno int,  
  foreign key(dno) references department(dno),  
  primary key(ssn)  
);
```

```
create table dlocation(  
  dno int,  
  dloc int,  
  primary key(dno,dloc)  
);
```

```
create table project(  
  pno int,  
  pname varchar(20),  
  plocation varchar(20),  
  dno int,  
  foreign key(dno) references department(dno),  
  primary key(pno)  
);
```

```
create table works_on(  
  ssn int,  
  pno int,  
  hours int,
```

```
primary key(ssn,pno,hours)
);
```

```
insert into department
values(200,'iot',300,'2020-01-01'),(201,'z',301,'2021-01-01'),(202,'y',302,'2022-01-01'),
(203,'x',303,'2019-01-01'),(204,'w',304,'2018-01-01');
```

```
insert into employee
values(100,'scott','bangalore','m',500000,103,200),(101,'abc','mangalore','f',600000,102,201),
(102,'def','udupi','m',700000,103,203),(103,'ghi','hubli','f',800000,102,204),(104,'jkl','dharwad','m',
850000,103,202);
```

```
insert into employee values(105,'scott','mangalore','m',600000,104,201);
```

```
insert into employee
values(106,'set','mangalore','m',600000,104,203),(107,'test','mangalore','m',500000,104,203);
```

```
insert into dlocation values(200,999),(201,998),(202,997),(203,996),(204,995);
```

```
insert into project
values(1,'a1b1','bangalore',200),(2,'a2b2','mangalore',201),(3,'a3b3','udupi',202),(4,'a4b4','hubli',
203),(5,'a5b5','dharwad',204);
```

```
insert into project values(6,'a6b6','bangalore',203);
```

```
insert into works_on values(100,1,5),(101,2,6),(102,3,7),(103,4,8),(104,5,9);
```

```
(select distinct a.pno
from project a, employee b, department d
where b.ssn = d.mgrssn and a.dno = b.dno and name = 'scott')
union
(select distinct p.pno
from project p, employee e, works_on w
where p.pno = w.pno and e.ssn = w.ssn and name = 'scott');
```

```
select distinct a.name, a.ssn, a.salary+0.1*a.salary as ten_percent_increment
from employee a, department d
where a.dno = (select dno
                from department
                where dname = 'iot');
```

```
select sum(a.salary) as total_salary, min(a.salary) as minimum_salary, max(a.salary) as
max_salary
from employee a
where a.dno = (select dno
                from department
                where dname = 'x');
```

```
select a.name
from employee a
where not exists
(select pno
from project
where dno = 203 AND pno NOT IN(select pno
                                from works_on
                                where a.ssn = ssn));
```

```
select a.dno, count(*)
from department a, employee b
where a.dno = b.dno and b.salary > 600000
and a.dno in (select dno
              from employee
              group by dno
              having count(*) > 2)
group by a.dno;
```