

SQL Lab Practice Questions

Section -1

1. Create database dac_dbt
2. Switch to database dac_dbt
3. Create the following tables , with the given fields, choose appropriate data type
 - a. create table dept(deptcode varchar(15), deptname varchar(60), budget integer);
 - b. create table grade(gradelevel varchar(15), gradelevel varchar(30), gradedescription varchar(60), basic integer);
 - c. create table desig(desigcode varchar(15), designame varchar(15));
 - d. create table emp(empcode varchar(15), empname varchar(60), deptcode varchar(15), birthdate date not null, joindate date not null, sex char(1) check (sex in ('M', 'F', 'T')), desigcode varchar(15), supcode varchar(15), gradelevel varchar(15), gradelevel varchar(30), basicpay integer);
 - e. create table salary(empcode varchar2(15), salmonth date not null, basic number, allow number, deduct number);
 - f. create table history(empcode varchar2(15), changedate date not null, desigcode varchar2(15), gradelevel varchar2(15), gradelevel varchar2(30), basicpay number);
4. Add the following primary key
 - a. dept add primary key (deptcode)
 - b. desig add primary key (desigcode);
 - c. emp add primary key (empcode);
 - d. salary add primary key (empcode, salmonth)
 - e. history add primary key (empcode, changedate, desigcode, gradelevel)
 - f. grade add primary key (gradelevel, gradelevel);
5. Add the following foreign keys
 - a) emp add foreign key (deptcode) references dept(deptcode)
 - b) emp add foreign key (desigcode) references desig(desigcode)
 - c) emp add foreign key (supcode) references emp(empcode);

- d) emp add foreign key (gradelevel) references grade (gradelevel, gradelevel)
- e) history add foreign key (empcode) references emp (empcode);
- f) history add foreign key (desigcode) references desig(desigcode);
- g) history add foreign key (gradelevel) references grade(gradelevel, gradelevel);
- h) alter table salary add foreign key (empcode) references emp(empcode);

6. Insert the following field (Note that accepted syntax for date in mysql is YYYY-MM-DD e.g 1959-12-12, use the correct syntax wherever required)

a. Insert following filed in dept

- values('ACCT', 'Accounts', 19);
- values('PRCH', 'Purchase', 25);
- values('SALE', 'Sales', 39);
- values('STOR', 'Stores', 33);
- values('FACL', 'Facilities', 42);
- values('PERS', 'Personal', 12);

b. Following filed into grade table

- values('GC1', 'GL1', 'GC-GL-1', 25000);
- values('GC4', 'GL1', 'GC-4-GL-1', 21000);
- values('GC4', 'GL4', 'GC-4-GL-4', 15000);
- values('GC6', 'GL1', 'GC-6-GL-1', 13000);
- values('GC6', 'GL2', 'GC-6-GL-2', 11000);
- values('GC12', 'GL1', 'GC-12-GL-1', 9000);
- values('GC12', 'GL2', 'GC-12-GL-2', 8500);
- values('GC12', 'GL3', 'GC-12-GL-3', 8000);
- values('GC15', 'GL1', 'GC-15-GL-1', 7000);
- values('GC15', 'GL2', 'GC-15-GL-2', 6500);
- values('GC15', 'GL3', 'GC-15-GL-3', 6000);
- values('GC20', 'GL1', 'GC-20-GL-1', 3500);
- values('GC20', 'GL2', 'GC-20-GL-2', 3000);
- values('GC20', 'GL3', 'GC-20-GL-3', 2500);
- values('GC20', 'GL4', 'GC-20-GL-4', 2000);

c. Following table to design

- insert into desig values('CLRK', 'Clerk');
- insert into desig values('SLMN', 'Sales Man');
- insert into desig values('MNGR', 'Manager');
- insert into desig values('SPRV', 'Supervisor');

- insert into desig values('PRES', 'Personal');

d. Following table to emp table

- insert into emp values('7839', 'Reddy', 'ACCT', '1959-12-12', '1981-07-17', 'M', 'PRES', null, 'GC1', 'GL1', 32000);
- insert into emp values('7566', 'Jain', 'PRCH', '24-jan-1955', '02-apr-1981', 'F', 'MNGR', '7839', 'GC6', 'GL2', 12400);
- insert into emp values('7698', 'Murthy', 'SALE', '16-sep-1960', '01-may-1981', 'F', 'MNGR', '7839', 'GC6', 'GL1', 14700);
- insert into emp values('7782', 'Menon', 'ACCT', '30-aug-1967', '09-june-1981', 'M', 'MNGR', '7839', 'GC6', 'GL2', 12400);
- insert into emp values('7902', 'Naik', 'PRCH', '20-feb-1958', '03-dec-1981', 'M', 'MNGR', '7839', 'GC6', 'GL2', 11800);
- insert into emp values('7654', 'Gupta', 'SALE', '22-jan-1957', '28-sep-1981', 'M', 'SLMN', '7698', 'GC6', 'GL2', 12600);
- insert into emp values('7521', 'Wilson', 'STOR', '18-mar-1956', '22-feb-1981', 'M', 'MNGR', '7698', 'GC6', 'GL2', 12200);
- insert into emp values('7844', 'Singh', 'SALE', '09-sep-1956', '08-sep-1981', 'F', 'SLMN', '7698', 'GC6', 'GL1', 14300);
- insert into emp values('7900', 'Shroff', 'SALE', '28-jun-1956', '03-dec-1981', 'M', 'CLRK', '7698', 'GC6', 'GL2', 12000);
- insert into emp values('7788', 'Khan', 'PRCH', '03-feb-1957', '09-dec-1982', 'M', 'SPRV', '7566', 'GC6', 'GL2', 11900);
- insert into emp values('7499', 'Roy', 'SALE', '27-apr-1957', '20-feb-1981', 'M', 'SLMN', '7698', 'GC6', 'GL1', 14200);
- insert into emp values('7934', 'Kaul', 'ACCT', '02-may-1957', '23-jan-1982', 'M', 'CLRK', '7782', 'GC6', 'GL2', 11950);
- insert into emp values('7369', 'Shah', 'PRCH', '25-may-1960', '17-dec-1983', 'M', 'CLRK', '7902', 'GC6', 'GL2', 12200);
- insert into emp values('7876', 'Patil', 'PRCH', '02-sep-1965', '17-dec-1990', 'M', 'CLRK', '7788', 'GC6', 'GL2', 12300);
- insert into emp values('7999', 'Sinha', 'SALE', '11-apr-1970', '20-feb-1992', 'M', 'SLMN', '7782', 'GC6', 'GL1', 14600);
- insert into emp values('7939', 'Rai', 'PRCH', '10-aug-1988', '06-dec-2012', 'M', 'CLRK', '7782', 'GC6', 'GL2', 11800);
- insert into emp values('7192', 'John', 'ACCT', '05-nov-1968', '03-dec-1994', 'M', 'CLRK', '7902', 'GC6', 'GL2', 12300);
- insert into emp values('9902', 'Ahmad', 'SALE', '16-feb-1970', '17-apr-1992', 'M', 'SLMN', '7698', 'GC6', 'GL1', 14200);

- insert into emp values('7802', 'Sanghvi','STOR', '06-may-1980', '01-jan-1993', 'M', 'MNGR', '7566', 'GC6', 'GL2', 12400);
- insert into emp values('6569', 'Tiwari', 'STOR', '19-aug-1989', '21-aug-2010', 'M', 'MNGR', '7782', 'GC6', 'GL2', 12400);

e. Following values to salary table

- insert into salary values('7839', '01-dec-2011', 30000, 3000, 1200);
- insert into salary values('7839', '01-jan-2012', 32000, 3200, 1250);
- insert into salary values('7839', '01-feb-2012', 32000, 3200, 1250);
- insert into salary values('7566', '01-dec-2011', 12000, 600, 400);
- insert into salary values('7566', '01-jan-2012', 12400, 1240, 550);
- insert into salary values('7566', '01-feb-2012', 12400, 1240, 550);
- insert into salary values('7698', '01-dec-2011', 13900, 800, 500);
- insert into salary values('7698', '01-jan-2012', 14700, 1470, 650);
- insert into salary values('7698', '01-feb-2012', 14700, 1470, 650);
- insert into salary values('7782', '01-dec-2011', 11800, 600, 500);
- insert into salary values('7782', '01-jan-2012', 12400, 1240, 550);
- insert into salary values('7782', '01-feb-2012', 12400, 1240, 550);
- insert into salary values('7902', '01-dec-2011', 11200, 600, 450);
- insert into salary values('7902', '01-jan-2012', 11800, 1180, 550);
- insert into salary values('7902', '01-feb-2012', 11800, 1180, 550);
- insert into salary values('7654', '01-dec-2011', 11900, 700, 500);
- insert into salary values('7654', '01-jan-2012', 12600, 1260, 550);
- insert into salary values('7654', '01-feb-2012', 12600, 1260, 550);
- insert into salary values('7521', '01-dec-2011', 11400, 800, 500);
- insert into salary values('7521', '01-jan-2012', 12200, 1220, 550);
- insert into salary values('7521', '01-feb-2012', 12200, 1220, 550);
- insert into salary values('7844', '01-dec-2011', 13400, 900, 600);
- insert into salary values('7844', '01-jan-2012', 14300, 1430, 650);
- insert into salary values('7844', '01-feb-2012', 14300, 1430, 650);
- insert into salary values('7900', '01-dec-2011', 11500, 500, 300);
- insert into salary values('7900', '01-jan-2012', 12000, 1200, 550);
- insert into salary values('7900', '01-feb-2012', 12000, 1200, 550);
- insert into salary values('7788', '01-dec-2011', 11300, 600, 450);
- insert into salary values('7788', '01-jan-2012', 11900, 1190, 550);
- insert into salary values('7788', '01-feb-2012', 11900, 1190, 550);
- insert into salary values('7499', '01-dec-2011', 13400, 800, 550);
- insert into salary values('7499', '01-jan-2012', 14200, 1420, 650);
- insert into salary values('7499', '01-feb-2012', 14200, 1420, 650);
- insert into salary values('7934', '01-dec-2011', 11450, 500, 250);
- insert into salary values('7934', '01-jan-2012', 11950, 1195, 550);

- insert into salary values('7934', '01-feb-2012', 11950, 1195, 550);
- insert into salary values('7369', '01-dec-2011', 11600, 600, 450);
- insert into salary values('7369', '01-jan-2012', 12200, 1220, 550);
- insert into salary values('7369', '01-feb-2012', 12200, 1220, 550);
- insert into salary values('7876', '01-dec-2011', 11700, 600, 500);
- insert into salary values('7876', '01-jan-2012', 12300, 1230, 550);
- insert into salary values('7876', '01-feb-2012', 12300, 1230, 550);
- insert into salary values('7999', '01-dec-2011', 13950, 650, 600);
- insert into salary values('7999', '01-jan-2012', 14600, 1460, 650);
- insert into salary values('7999', '01-feb-2012', 14600, 1460, 650);
- insert into salary values('7939', '01-dec-2011', 11100, 700, 400);
- insert into salary values('7939', '01-jan-2012', 11800, 1180, 550);
- insert into salary values('7939', '01-feb-2012', 11800, 1180, 550);
- insert into salary values('7192', '01-dec-2011', 11700, 600, 500);
- insert into salary values('7192', '01-jan-2012', 12300, 1230, 550);
- insert into salary values('7192', '01-feb-2012', 12300, 1230, 550);
- insert into salary values('9902', '01-dec-2011', 13400, 800, 500);
- insert into salary values('9902', '01-jan-2012', 14200, 1420, 650);
- insert into salary values('9902', '01-feb-2012', 14200, 1420, 650);
- insert into salary values('7802', '01-dec-2011', 11900, 500, 300);
- insert into salary values('7802', '01-jan-2012', 12400, 1240, 550);
- insert into salary values('7802', '01-feb-2012', 12400, 1240, 550);
- insert into salary values('6569', '01-dec-2011', 11800, 600, 400);
- insert into salary values('6569', '01-jan-2012', 12400, 1240, 550);
- insert into salary values('6569', '01-feb-2012', 12400, 1240, 550);

f. Following values into history table

- insert into history values ('7839', '17-nov-1981', 'CLRK', 'GC15','GL1', 7000);
- insert into history values ('7839', '31-dec-1985', 'SLMN', 'GC12','GL3', 8000);
- insert into history values ('7839', '31-dec-1988', 'SPRV', 'GC12','GL2', 8500);
- insert into history values ('7839', '31-dec-1990', 'MNGR', 'GC12','GL1', 9000);
- insert into history values ('7839', '31-dec-1994', 'CLRK', 'GC6', 'GL2', 11000);
- insert into history values ('7839', '31-dec-1998', 'SLMN', 'GC6', 'GL1', 13000);
- insert into history values ('7839', '31-dec-2001', 'SPRV', 'GC4', 'GL4', 15000);

- insert into history values ('7839', '31-dec-2006', 'MNGR', 'GC4', 'GL1', 21000);
- insert into history values ('7839', '31-dec-2011', 'PRES', 'GC1', 'GL1', 25000);
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- insert into history values ('7566', '02-apr-1981', 'CLRK', 'GC12', 'GL3', 8000);
- insert into history values ('7566', '31-dec-1991', 'SLMN', 'GC12', 'GL2', 8500);
- insert into history values ('7566', '31-dec-2001', 'SPRV', 'GC12', 'GL1', 9000);
- insert into history values ('7566', '31-dec-2011', 'MNGR', 'GC6', 'GL2', 11000);
- insert into history values ('7698', '01-may-1981', 'CLRK', 'GC12', 'GL3', 8000);
- insert into history values ('7698', '01-may-1991', 'SLMN', 'GC12', 'GL2', 8500);
- insert into history values ('7698', '01-may-2001', 'MNGR', 'GC12', 'GL1', 9000);
- insert into history values ('7698', '01-may-2006', 'SPRV', 'GC6', 'GL2', 11000);
- insert into history values ('7698', '01-may-2011', 'MNGR', 'GC6', 'GL1', 13000);
- insert into history values ('7782', '09-jun-1981', 'CLRK', 'GC12', 'GL3', 8000);
- insert into history values ('7782', '09-jun-1991', 'SLMN', 'GC12', 'GL2', 8500);
- insert into history values ('7782', '09-jun-2001', 'SPRV', 'GC12', 'GL1', 9000);
- insert into history values ('7782', '09-jun-2011', 'MNGR', 'GC6', 'GL2', 11000);
- insert into history values ('7902', '03-dec-1981', 'CLRK', 'GC12', 'GL3', 8000);
- insert into history values ('7902', '03-dec-1991', 'SLMN', 'GC12', 'GL2', 8500);
- insert into history values ('7902', '03-dec-2001', 'SPRV', 'GC12', 'GL1', 9000);
- insert into history values ('7902', '03-dec-2011', 'MNGR', 'GC6', 'GL2', 11000);

- insert into history values ('7654', '28-sep-1981', 'SLMN', 'GC12','GL3', 8000);
- insert into history values ('7654', '28-sep-1991', 'SLMN', 'GC12','GL2', 8500);
- insert into history values ('7654', '28-sep-2001', 'SLMN', 'GC12','GL1', 9000);
- insert into history values ('7654', '28-sep-2011', 'SLMN', 'GC6', 'GL2', 11000);
- insert into history values ('7521', '22-feb-1981', 'CLRK', 'GC12','GL3', 8000);
- insert into history values ('7521', '22-feb-1991', 'SLMN', 'GC12','GL2', 8500);
- insert into history values ('7521', '22-feb-2001', 'SPRV', 'GC12','GL1', 9000);
- insert into history values ('7521', '22-feb-2011', 'MNGR', 'GC6', 'GL2', 11000);
- insert into history values ('7844', '08-sep-1981', 'SLMN', 'GC12','GL3', 8000);
- insert into history values ('7844', '08-sep-1991', 'SLMN', 'GC12','GL2', 8500);
- insert into history values ('7844', '08-sep-2001', 'SLMN', 'GC12','GL1', 9000);
- insert into history values ('7844', '08-sep-2006', 'SLMN', 'GC6', 'GL2', 11000);
- insert into history values ('7844', '08-sep-2011', 'SLMN', 'GC6', 'GL1', 13000);
- insert into history values ('7900', '03-dec-1981', 'SLMN', 'GC12','GL3', 8000);
- insert into history values ('7900', '03-dec-1991', 'SLMN', 'GC12','GL2', 8500);
- insert into history values ('7900', '03-dec-2001', 'CLRK', 'GC12','GL1', 9000);
- insert into history values ('7900', '03-dec-2011', 'CLRK', 'GC6', 'GL2', 11000);
- insert into history values ('7788', '09-dec-1982', 'SLMN', 'GC12','GL3', 8000);
- insert into history values ('7788', '09-dec-1992', 'CLRK', 'GC12','GL2', 8500);
- insert into history values ('7788', '09-dec-2002', 'MNGR', 'GC12','GL1', 9000);

- insert into history values ('7788', '09-dec-2012', 'SPRV', 'GC6', 'GL2', 11000);
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- insert into history values ('7499', '20-feb-1981', 'SLMN', 'GC12','GL3', 8000);
- insert into history values ('7499', '20-feb-1991', 'SLMN', 'GC12','GL2', 8500);
- insert into history values ('7499', '20-feb-2001', 'SLMN', 'GC12','GL1', 9000);
- insert into history values ('7499', '20-feb-2006', 'SLMN', 'GC6', 'GL2', 11000);
- insert into history values ('7499', '20-feb-2011', 'SLMN', 'GC6', 'GL1', 13000);
- insert into history values ('7934', '23-jan-1982', 'SLMN', 'GC12','GL3', 8000);
- insert into history values ('7934', '23-jan-1992', 'SLMN', 'GC12','GL2', 8500);
- insert into history values ('7934', '23-jan-2002', 'CLRK', 'GC12','GL1', 9000);
- insert into history values ('7934', '23-jan-2012', 'CLRK', 'GC6', 'GL2', 11000);
- insert into history values ('7369', '17-dec-1983', 'SLMN', 'GC12','GL3', 8000);
- insert into history values ('7369', '17-dec-1993', 'SLMN', 'GC12','GL2', 8500);
- insert into history values ('7369', '17-dec-2003', 'CLRK', 'GC12','GL1', 9000);
- insert into history values ('7369', '17-dec-2006', 'CLRK', 'GC6', 'GL2', 11000);

Section -2

Execute the following query based on the Database created in section -1

1. List the name, employee code and designation of each employee of the office
2. List all the departments and the budgets
3. List the employees and their respective department names
4. List the employees who are not having any superior to work under
5. List the employees who are working directly under superior most employee of the office. (Assume the superior most employee is the employee who does not have a supervisor)
6. List the employee(s) who is senior most in the office
7. List the employees who will retire from the office next.
8. List the departments with the respective department managers
9. List the employees who work as 'manager' to at least one department.
10. List the number of employees working for either 'accounts' or 'personal' or 'purchase' departments
11. List the employees working for 'accounts' or 'personal' department
12. List the employees working for 'accounts' and 'personal' department
13. List the employees working for 'accounts' but not for 'personal' department
14. List the youngest employee of the office
15. List the employees who are drawing basic pay not equal to 12400.
16. List the employees who are drawing basic salary between 11000 and 12000.
17. List the employees who are drawing basic salary not between 11000 and 12000
18. List the employees who got salary allowance between Rs.1000 to Rs.1500 in the month of January 2012.

19. List the employees whose name ends with 'i' or 'y'.
20. List the employees who have atleast 25 years of experience
21. List the 'Salesmen' who have minimum 30 to 20 years of experience
22. List the basic salary and half of the basic salary for each employee.
23. List the employees and the latest take-home-pay of each employee. (Hint: Take-home-pay = basic + allowance - deductions)
24. List the employees and the latest take-home-pay of each employee of 'Accounts' department.
25. List employees and their respective ages.
26. List all the 'Accounts' department employees, first ordered by their age and then by their names.
27. List the number of employees directly reporting to 'Reddy'
28. List the employees who have atleast one person working under him/her and the number of their subordinates. List the employee with highest number of subordinates first, next the person with next highest number of subordinates and so on.
29. List the employees who have minimum 3 employees working under him/her.
30. List the minimum and maximum salaries drawn in each grade code.
31. List the employees with names of their supervisors (Hint: Use Join).
32. List the number of officers reporting to each supervisor having more than 3 people working under them
33. List the employees who have not got any promotion till now.
34. List the employee with maximum number of promotions. Also list the number of promotions that he/she got.
35. List the employees who got promoted in the year 1991.

36. List the department budget and the total salary drawn (by the employees of this department).
37. Display the employee names in full uppercase.
38. List all the employees drawing salary higher than the salary drawn by 'Jain'
39. List all the employees who have higher salary than all the employees who draw salary in the range of 11000 to 12000.
40. List all the employees who have greater than average pay. Display the result in the increasing order of the salary.
41. List the employees who draws highest salary
42. List all the employees other than the employees who draw highest salary
43. List the employees who draw highest salary in each department
44. List the employee(s) getting second highest salary
45. List the employee(s) who are getting fifth highest salary.
46. List the female employee who draws the highest salary higher than any other female employee
47. List the department name of the female employee who draws the highest salary higher than any other female employee
48. List the department manager of the department, in which the female employee who draws the highest salary higher than any other female employee works in
49. List all male employees who draw salary greater than atleast one female employee
50. List the departments in which average salary of employees is more than average salary of the company
51. List the employees drawing salary lesser than the average salary of employees working for 'accounts' department

Section -3

Views Practice questions:

1. Write a view to compute the employee age of the organization
2. Write a view to compute the employee experience with the organization
3. Write a view that computes the employee pay for the current month for all the employees. Hint: Compute the employee pay as the Basic+Allowance-Deduction
4. List the employees who are older than their supervisors. Hint: Use views to implement employee age
5. Write a view to display the total number of employees in each department
6. Write a view to display the total number of employees in the organization
7. Use the views in Qn No 5 & Qn No 6, to display the percentage of employees in each department

Section -4

Index and temporary tables

1. Create emp_index on table emp on the field birthdate.
2. Create unique index dept_index on table dept on the field deptname.
3. Create students table, with field id, name, age, gender, index on id
4. Drop index of table emp
5. Find all the index of table dept
6. Create a temporary table student with field with field id, name, age, gender
7. Logout from session and login again to check if temporary table exists.
8. Create a temporary table test
9. Drop temporary table test