Database Management System – cs422 DE

Lab 1 – Wk 3 & 4

This Lab is based on lecture 3 & 4 (chapters 6 & 7).

- Submit your *own work* on time. No credit will be given if the lab is submitted after the due date.
- Note that the completed lab should be submitted in .zip or .rar format only.
- If you think that your answer needs explanation to get credit then please write it down.

Solve the questions from 6.32 to 6.40 in the Case Study 2 on page no. 173 (5th edition).

You are required to run & test all these queries in SQL Server. Note that you'll need to create and populate the tables first.

To get full credit for this lab, you need to submit the following:
(1) Screenshots for at least 4 of the queries with output.
(2) Answer SQL queries for all of the mentioned exercises.

For your quick reference, the schema and the questions are given below.

Employee (**empID**, fName, lName, address, DOB, sex, position, deptNo)

Department (**deptNo**, deptName, mgrEmpID)

Project (**projNo**, projName, deptNo)

WorksOn (**empID**, **projNo**, hoursWorked)

where

- *Employee* contains employee details and *empID* is the key.
- *Department* contains department details and *deptNo* is the key. *mgrEmpID* identifies the employee who is the manager of the department. There is only one manager for each department.
- *Project* contains details of the projects in each department and the key is *projNo* (no two departments can run the same project).
- *WorksOn* contains details of the hours worked by employees on each project, and *empID/projNo* form the key.

Exercises

1. List all employees in alphabetical order of surname and within surname, first name.
   ANS: select * from Employee order by lname, fname;

Result Grid Filter Rows: Search Edit: Export/Impo

empID	fName	lName	address	DOB	sex	position	deptNo
4	Alice	Adhikary	6286 Pine Apt	1998-08-28	female	Account	2
5	Dannish	Cou	6758 Cyrup Rd	2005-11-16	male	Clerk	3
2	Jasmin	Doe	4956 Elon Ln	1985-02-01	female	QA	1
1	Ram	Kumar	1033 NorthSt	1995-05-11	male	Developer	1
3	Harinath	Smith	1789 Eagle St	1970-12-25	male	Engineer	2
NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL

2. List all the details of employees who are female.
ANS: select * from Employee where sex = 'female';

Result Grid Filter Rows: Search Edit: Export/In

empID	fName	lName	address	DOB	sex	position	deptNo
2	Jasmin	Doe	4956 Elon Ln	1985-02-01	female	QA	1
4	Alice	Adhikary	6286 Pine Apt	1998-08-28	female	Account	2
NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL

3. List the names and addresses of all employees who are Managers.
ANS: select fname, lname, address from Employee where deptNo = any (select mgrEmpID from Department);

Result Grid Filter Rows: Search

fname	lname	address
Ram	Kumar	1033 NorthSt
Jasmin	Doe	4956 Elon Ln
Dannish	Cou	6758 Cyrup Rd

4. Produce a list of the names and addresses of all employees who work for the IT department.
ANS: SELECT fname, lname, address from Employee where deptNo = (select deptNo from Department where deptName = 'IT');

Result Grid | Filter Rows: Search

fname	lname	address
Ram	Kumar	1033 NorthSt
Jasmin	Doe	4956 Elon Ln

5. Produce a complete list of all managers who are due to retire this year, in alphabetical order of surname.
   ANS: select * from Employee where deptNo = any (select mgrEmpID from Department) and (year (sysdate()) - year(Employee.DOB))>=60 order by lName;
   (for this i changed one of data of birth)

Result Grid | Filter Rows: Search | Edit:

empID	fName	lName	address	DOB	sex	position	deptNo
5	Dannish	Cou	6758 Cyrup Rd	1930-11-16	male	Clerk	3
NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL

6. Find out how many employees are managed by 'James Adams'.
   ANS: select count(*) as Count from Employee where deptNo = any (select deptNo from Department where mgrEmpID = any (select empID from Employee where fname='James' and lname='Adams'));

Result Grid | Filter Rows:

Count
1

7. Produce a report of the total hours worked by each employee, arranged in order of department number and within department, alphabetically by employee surname.
   ANS: select e.empID, e.fName, e.lName, e.deptNo, ifnull(hoursWorked, 0) as hoursWorked from Employee e left join WorksOn w on e.empID = w.empID inner join Department d on d.deptNo = e.deptNo order by e.deptNo, e.lName;

Result Grid | Filter Rows: Search | Export:

empID	fName	lName	deptNo	hoursWorked
2	Jasmin	Doe	1	60
2	Jasmin	Doe	1	15
1	Ram	Kumar	1	20
4	Alice	Adhikary	2	88
3	Harinath	Smith	2	12
5	James	Adams	3	59

8. For each project on which more than two employees worked, list the project number, project name and the number of employees who work on that project.
ANS: select p.projNo,p.projName, x.empCount from Project p, (select projNo, count(*) as empCount from WorksOn w group by w.projNo having count(*) >2)x where p.projNo = x.projNo;

Result Grid | Filter Rows: Search

projNo	projName	empCount
101	Walterfall	3

9. List the total number of employees in each department for those departments with more than 10 employees. Create an appropriate heading for the columns of the results table.
ANS: select e.deptNo, d.deptName, count(*) as empCount from Employee e inner join Department d on e.deptNo = d.deptNo group by e.deptNo having count(*)>10 order by deptNo;
(here for records i made more or equals to 2)

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35
36 •  select e.deptNo, d.deptName, count(*) as empCount from Employee e inner join
      Department d on e.deptNo = d.deptNo group by e.deptNo having count(*)>=2 order by
      deptNo;
37
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Result Grid | Filter Rows: Search | Export:

deptNo	deptName	empCount
1	IT	2
2	HR	2