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.**

empID	fName	lName	address	DOB	sex	position	deptNo
4	Carlos	Palma	Ecuador	2001-04-09 00:00:00	M	Student	1
7	Emma	Tigasi	Ecuador	1968-03-22 00:00:00	F	Master	1
6	Hector	Palma	Ecuador	1966-11-06 00:00:00	M	Master	2
1	Jimmy	Palma	USA	1990-02-10 00:00:00	M	Senior	1
2	Maryam	Gh	USA	1980-12-04 00:00:00	F	Student	2
NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL

SELECT * FROM dbmn.Employee ORDER BY fName ASC;

2. **List all the details of employees who are female.**

   SELECT * FROM dbmn.Employee WHERE SEX = 'F';

empID	fName	lName	address	DOB	sex	position	deptNo
2	Maryam	Gh	USA	1980-12-04 00:00:00	F	Student	2
7	Emma	Tigasi	Ecuador	1968-03-22 00:00:00	F	Master	1

3. **List the names and addresses of all employees who are Managers.**

   SELECT fName, address FROM dbmn.Employee WHERE POSITION = 'Master';

fName	address
Hector	Ecuador
Emma	Ecuador

4. **Produce a list of the names and addresses of all employees who work for the IT department.**

   SELECT e.fName, e.address FROM dbmn.Employee e join dbmn.Department d on e.deptNo = d.deptNo WHERE deptName = 'IT department';

fName	address
Maryam	USA
Hector	Ecuador

5. **Produce a complete list of all managers who are due to retire this year, in alphabetical order of surname.**

```
SELECT * FROM dbmn.Employee e
where position ="Master"
and YEAR(CURDATE())-YEAR(e.DOB)>=65;
```

empID	fName	lName	address	DOB	sex	position	deptNo
6	James	Adams	Ecuador	1946-11-06 00:00:00	M	Master	2
NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL

6. **Find out how many employees are managed by 'James Adams'.**

ANS:

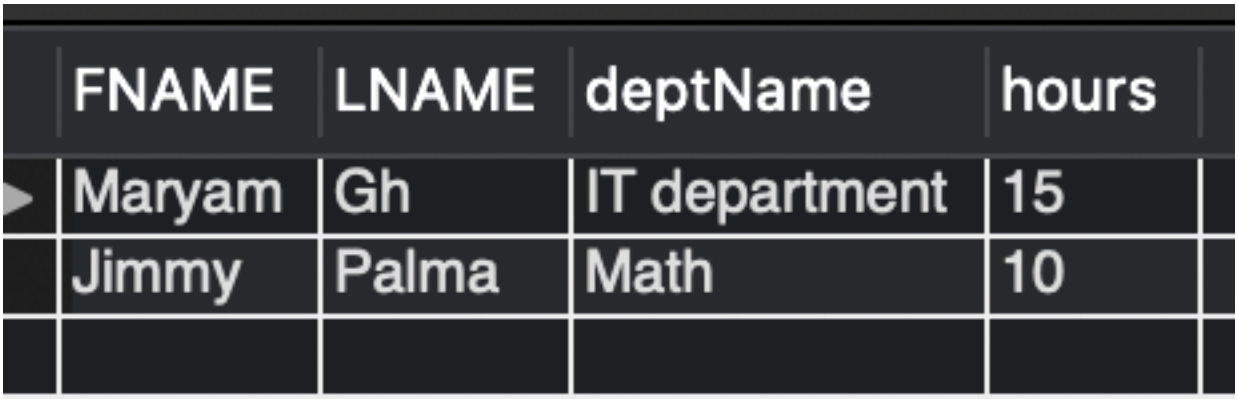
```
SELECT e.fName, e.address FROM dbmn.Employee e
join dbmn.Department d on e.deptNo = d.deptNo
WHERE d.mgrEmpID in (select empID from dbmn.Employee where fName = 'James'
and lName = 'Adams');
```


fName	address
Jimmy	USA
Carlos	Ecuador
Emma	Ecuador
Andre	Ecuador
Alejandro	Ecuador

   a. **Produce a report of the total hours worked by each employee, arranged in order of department number and within department, alphabetically by employee surname.**

```
SELECT e.FNAME,e.LNAME,d.deptName,sum(w.hoursworked) as hours FROM dbmn.WORKSON w
JOIN dbmn.EMPLOYEE e ON w.empID=e.empID
```

Join dbmn.DEPARTMENt d ON d.deptNo= e.deptNo
group by e.empID
order by d.deptName,e.LNAME;



FNAME	LNAME	deptName	hours
Maryam	Gh	IT department	15
Jimmy	Palma	Math	10

7. **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.**

SELECT w.projNo,p.projName,count(w.empID) empCount
from dbmn.project p join dbmn.worksOn w
group by w.projNo,p.projName
having empCount>2

8. **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.**

SELECT DEPTNO,count(empID) as empCount
from dbmn.Employee
group by DEPTNO
having empCount>10