Computer Science Division
Department of Mathematics
Faculty of Science

Level 2- Semester 1
Course: COMP 207
Date: Week 8 (Nov 4), 2017

Sheet 5 model answer[1]

Q) Using the COMPANY database, write the SQL command that answers the following queries:

1. List the count of employees for each department.

```
SELECT d.Dname,
            count(e.Ssn) as EmpNum
FROM Employee e, Department d
WHERE e.Dno=d.Dno
GROUP BY d.Dname
```

Dname	EmpNum
Administration	3
Headquarters	1
Research	4

2. List the summation of salaries for each department that are paid to their employees.

```
SELECT d.Dname,
            sum(e.Salary) as SumSal
FROM Employee e, Department d
WHERE e.Dno=d.Dno
GROUP BY d.Dname
```

Dname	SumSal
Administration	93000.00
Headquarters	55000.00
Research	133000.00

3. Retrieve the name of department which give their employees' salaries greater than 5000 60000

```
SELECT d.Dname, sum(e.Salary) as
SumSalary
FROM Employee e, Department d
WHERE e.Dno=d.Dno
GROUP BY d.Dname
HAVING sum(e.Salary)>60000
```

Dname	SumSal
Administration	93000.00
Research	133000.00

4. Retrieve the names of all employees in department 5 who work more than 20 hours per week on the "ProductX" project.

```
SELECT e.fname
FROM Employee e,
            works_on w ,
```

Fname
John

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```
        project p
WHERE e.Ssn=w.Essn and
w.Pnumber=p.Pnumber and
p.Pname='ProductX'and p.Dno=5
and w.Hours>20
```

5. List the name of each employee and his/her spouse.

```
SELECT
e.Fname,d.Dependent_name
FROM  employee e,dependent d
WHERE e.Ssn=d.Essn
and        d.Relationship='Spouse'
```

Fname	Dependent_name
John	Elizabeth
Franklin	Joy
Jennifer	Abner

6. Sort the department name according to their paid salaries.

```
SELECT d.Dname,
            sum(e.Salary) as SumSal
FROM Employee e, Department d
WHERE e.Dno=d.Dno
GROUP BY d.Dname
ORDER BY 2

OR

SELECT d.Dname,
            sum(e.Salary) as SumSal
FROM Employee e, Department d
WHERE e.Dno=d.Dno
GROUP BY d.Dname
ORDER BY  SumSal ASC
```

Dname	SumSal
Headquarters	55000.00
Administration	93000.00
Research	133000.00

7. Retrieve the name, salary, and phone of an employee who takes the smallest salary.

```
SELECT fname,salary
FROM Employee
WHERE salary =
(SELECT min(salary) FROM EMPLOYEE);
```

8. Retrieve each department name and the average of their employees' salaries.

```
SELECT AVG(salary), D.Dname
FROM Employee E NATURAL JOIN Department D
GROUP by D.Dname ;
```

9. Retrieve the research department and the average of their employees' salaries.

```
SELECT AVG(salary)
FROM Employee E NATURAL JOIN Department D
WHERE D.dname ='Research';
```

10. Retrieve the details of each employee who takes salary greater than the average salaries of the research department's employees.

```
SELECT fname,salary
FROM Employee
WHERE salary > (SELECT AVG(salary)
FROM Employee E NATURAL JOIN Department D
WHERE D.dname ='Research');
```

11. Retrieve the name, salary, project number, project name, and hours of each employee either works on project or not.

```
SELECT
E.fname,E.salary,P.Pnumber,P.pname,W.Hours
FROM (Employee E RIGHT OUTER JOIN Works_on W
on E.ssn=W.Essn) JOIN Project p on
W.Pnumber=P.Pnumber
```

12. Retrieve the summation of both males' salaries and female' salaries.

```
SELECT sex, sum(salary)
FROM Employee
GROUP BY sex
```

13. Retrieve each employee name and his/her dependent name (if exist).

```
SELECT E.fname,D.Dependent_name
FROM Employee E LEFT OUTER JOIN Dependent D ON
E.ssn=D.Essn
```