CIND 110
Data Organization For Data Analysts

Assignment II
Practicing SQL Queries

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Section - D20
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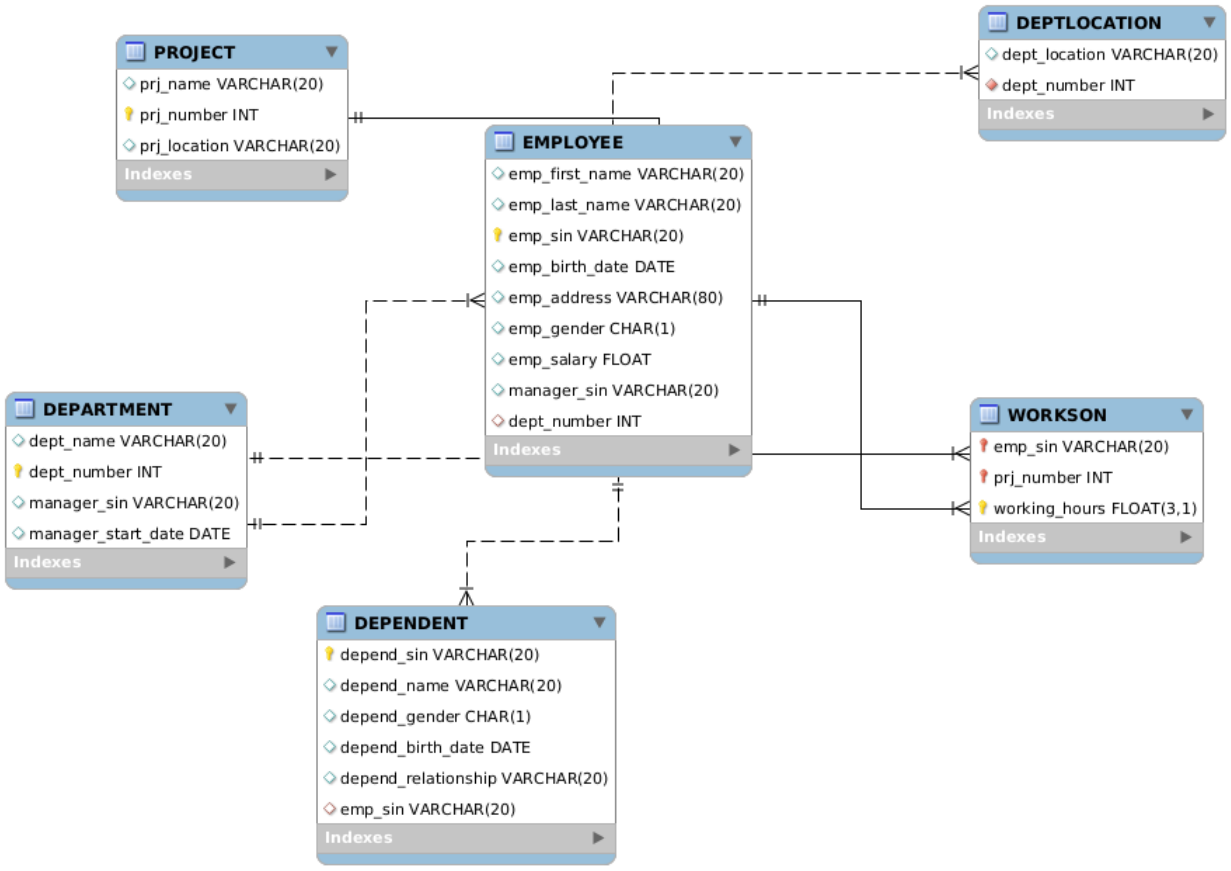

Figure 1: ER diagram for CompanyDB

1. ***For every project located in 'Montreal', list the project name, the controlling department number, and the department manager's last name.***

```
mysql> select emp_first_name, emp_last_name, dept_number, prj_name from EMPLOYEE, WORKSON, PROJECT
    -> where EMPLOYEE.manager_sin = WORKSON.emp_sin AND PROJECT.prj_number = WORKSON.prj_number
    -> AND prj_location = 'Montreal';
+----------------+---------------+-------------+----------+
| emp_first_name | emp_last_name | dept_number | prj_name |
+----------------+---------------+-------------+----------+
| Joanne         | English       |           2 | ProductZ |
+----------------+---------------+-------------+----------+
1 row in set (0.00 sec)
```

2. ***Retrieve repeated addresses and the names of employees who lives at these addresses***

```
mysql> select a.emp_first_name, a.emp_last_name, a.emp_address from EMPLOYEE AS a
    -> JOIN ( select emp_address from EMPLOYEE group by emp_address having count(*) > 1) b
    -> on a.emp_address = b.emp_address;
+----------------+---------------+---------------------------------+
| emp_first_name | emp_last_name | emp_address                     |
+----------------+---------------+---------------------------------+
| Amarantha      | Enrique       | 99 University Ave, Kingston, ON |
| Ahmad          | Jabbar        | 99 University Ave, Kingston, ON |
+----------------+---------------+---------------------------------+
2 rows in set (0.00 sec)

mysql>
```

3. ***Retrieve the first name, address and salary of each employee whose last name starts with the letter 'E' and works for either the 'Marketing' or the 'Administration' department***

```
mysql> select emp_first_name, emp_address, emp_salary from EMPLOYEE, DEPARTMENT where
    -> EMPLOYEE.dept_number = DEPARTMENT.dept_number AND emp_last_name like 'E%' AND
    -> (dept_name = 'Marketing' OR dept_name = 'Administration');
+----------------+-----------------------------------------------+------------+
| emp_first_name | emp_address                                   | emp_salary |
+----------------+-----------------------------------------------+------------+
| Jack           | 1455 Boulevard de Maisonneuve O, Montréal, QC |      30000 |
| Joanne         | 85 Ave, Edmonton, AB                          |      25000 |
| Amelia         | 7 King's College Cir, Toronto, ON             |      26000 |
+----------------+-----------------------------------------------+------------+
3 rows in set (0.01 sec)
```

4. ***List the names of managers who have at least one dependent.***

```
mysql> select a.emp_first_name, a.emp_last_name from EMPLOYEE AS a JOIN (select
    -> emp_sin from WORKSON group by emp_sin having count(*) > 0) b on a.manager_sin = b.emp_sin;
+----------------+---------------+
| emp_first_name | emp_last_name |
+----------------+---------------+
| Jack           | English       |
| Joanne         | English       |
| Rakesh         | Narayan       |
| Melinda        | Jones         |
| John           | Baines        |
| Ahmad          | Jabbar        |
| Amelia         | English       |
+----------------+---------------+
7 rows in set (0.00 sec)
```

5. ***Find the sum of the salaries of all employees of the 'Marketing' department***

```
mysql> select SUM(emp_salary) AS 'Sum of salaries in Marketing Dept' from EMPLOYEE, DEPARTMENT where
    -> EMPLOYEE.dept_number = DEPARTMENT.dept_number AND dept_name = 'Marketing';
+-----------------------------------+
| Sum of salaries in Marketing Dept |
+-----------------------------------+
|                            162500 |
+-----------------------------------+
1 row in set (0.00 sec)
```

6. ***For each department that has more than two employees, retrieve the department number and the number of its employees who are making less than $50,000.***

```
mysql> select dept_number, count(*) as 'No. of Employees making under 5000' from EMPLOYEE group by dept_number
    -> having count(dept_number) > 2 AND count(emp_salary) < 50000;
+-------------+-----------------------------------+
| dept_number | No. of Employees making under 5000 |
+-------------+-----------------------------------+
|           2 |                                 5 |
|           4 |                                 3 |
+-------------+-----------------------------------+
2 rows in set (0.00 sec)
```

7. ***For each department whose average employee salary is less than $90,000, retrieve the department name and the number of employees working for that department.***

```
mysql> select dept_name, COUNT(*) AS 'No. of Employees in department' from EMPLOYEE, DEPARTMENT where
    -> EMPLOYEE.dept_number = DEPARTMENT.dept_number group by dept_name having AVG(emp_salary) < 90000;
+----------------+--------------------------------+
| dept_name      | No. of Employees in department |
+----------------+--------------------------------+
| Headquarters   |                              2 |
| Marketing      |                              5 |
| Finance        |                              1 |
| Administration |                              3 |
+----------------+--------------------------------+
4 rows in set (0.00 sec)
```

8. ***Retrieve the names of all employees who work in the department that has the employee with the highest salary among all employees***

```
mysql> select dept_name, COUNT(*) AS 'No. of Employees in department' from EMPLOYEE, DEPARTMENT where
    -> EMPLOYEE.dept_number = DEPARTMENT.dept_number group by dept_name having AVG(emp_salary) < 90000;
+----------------+-------------------------------+
| dept_name      | No. of Employees in department |
+----------------+-------------------------------+
| Headquarters   |                             2 |
| Marketing      |                             5 |
| Finance        |                             1 |
| Administration |                             3 |
+----------------+-------------------------------+
4 rows in set (0.00 sec)
```

9. ***Retrieve the names of employees who make at least $20,000 more than the employee who is paid the least in the company***

```
mysql> select emp_first_name, emp_last_name from EMPLOYEE where emp_salary > (select MIN(emp_salary) from EMPLOYEE) + 20000;
+---------------+--------------+
| emp_first_name | emp_last_name |
+---------------+--------------+
| Susan          | Westerberg    |
| John           | Baines        |
| Janine         | Wallace       |
+---------------+--------------+
3 rows in set (0.00 sec)
```

10. ***Find the number of employees who are working on more than 2 projects and show the result in descending order***

```
mysql> select prj_number, COUNT(*) As 'No. of Employees' from WORKSON group by prj_number having count(*) > 2
    -> order by COUNT(*) desc;
+------------+------------------+
| prj_number | No. of Employees |
+------------+------------------+
|        500 |                4 |
|        600 |                4 |
|        100 |                3 |
|        200 |                3 |
|        400 |                3 |
+------------+------------------+
5 rows in set (0.00 sec)
```

11. ***Retrieve the employee names and their dependent names. Return employee names even if the dependent name is not present for the employee.***

```
mysql> select a.emp_first_name, a.emp_last_name,b.depend_name from EMPLOYEE AS a LEFT OUTER JOIN DEPENDENT AS b
    -> on a.emp_sin = b.emp_sin;
+----------------+---------------+-------------+
| emp_first_name | emp_last_name | depend_name |
+----------------+---------------+-------------+
| Susan          | Westerberg    | Theodore    |
| Jack           | English       | Nabil       |
| Amarantha      | Enrique       | NULL        |
| Frank          | Wong          | NULL        |
| Joanne         | English       | Andrew      |
| Joanne         | English       | Elizabeth   |
| Rakesh         | Narayan       | Alice       |
| Rakesh         | Narayan       | Joyce       |
| Melinda        | Jones         | NULL        |
| John           | Baines        | John        |
| Janine         | Wallace       | NULL        |
| Ahmad          | Jabbar        | Alice       |
| Ahmad          | Jabbar        | Joy         |
| Ahmad          | Jabbar        | Jennifer    |
| Ahmad          | Jabbar        | John        |
| Amelia         | English       | NULL        |
+----------------+---------------+-------------+
16 rows in set (0.00 sec)
```

12. ***If more than one employee is working on the same project with the same number of hours, then display the number of these employees along with the project number.***

```
mysql> select prj_number, count(*) AS 'No. of Employees' from WORKSON group by prj_number, working_hours
    -> having count(*) > 1;
+------------+------------------+
| prj_number | No. of Employees |
+------------+------------------+
|        400 |                2 |
|        500 |                2 |
|        600 |                3 |
+------------+------------------+
3 rows in set (0.00 sec)
```