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CPSC-4620-001
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Homework #4

1. Who works on the reorganization project?

```
SELECT Fname, Lname
FROM EMPLOYEE
WHERE Ssn IN (SELECT Essn
              FROM WORKS_ON
              WHERE Pno IN (SELECT Pnumber
                            FROM PROJECT
                            WHERE Pname = 'Reorganization'));
```

```
mysql> SELECT Fname, Lname
    -> FROM EMPLOYEE
    -> WHERE Ssn IN (SELECT Essn
    -> FROM WORKS_ON
    -> WHERE Pno IN (SELECT Pnumber
    -> FROM PROJECT
    -> WHERE Plocation = 'Stafford'));
+----------+---------+
| Fname    | Lname   |
+----------+---------+
| Franklin | Wong    |
| Jennifer | Wallace |
| Ahmad    | Jabbar  |
| Alicia   | Zeleya  |
+----------+---------+
4 rows in set (0.00 sec)
```

2. Who works on a project that is located in Stafford? Do not show any repeated names.

```
SELECT DISTINCT Fname, Lname
FROM EMPLOYEE
WHERE Ssn IN (SELECT Essn
              FROM WORKS_ON
              WHERE Pno IN (SELECT Pnumber
                            FROM PROJECT
                            WHERE Plocation = 'Stafford'));
```

```
mysql> SELECT DISTINCT Fname, Lname
    -> FROM EMPLOYEE
    -> WHERE Ssn IN (SELECT Essn
    -> FROM WORKS_ON
    -> WHERE Pno IN (SELECT Pnumber
    -> FROM PROJECT
    -> WHERE Plocation = 'Stafford'));
+----------+---------+
| Fname    | Lname   |
+----------+---------+
| Franklin | Wong    |
| Jennifer | Wallace |
| Ahmad    | Jabbar  |
| Alicia   | Zeleya  |
+----------+---------+
4 rows in set (0.00 sec)
```

3. Which employees have a daughter, and what is that daughter's name?

SELECT Fname, Lname, Dependent_name
FROM (DEPENDENT JOIN EMPLOYEE ON Essn = Ssn)
WHERE Relationship = 'Daughter';

```
mysql> SELECT Fname, Lname, Dependent_name
    -> FROM DEPENDENT JOIN EMPLOYEE ON Essn = Ssn
    -> WHERE Relationship = 'Daughter';
+----------+-------+----------------+
| Fname    | Lname | Dependent_name |
+----------+-------+----------------+
| John     | Smith | Alice          |
| Franklin | Wong  | Alice          |
+----------+-------+----------------+
2 rows in set (0.00 sec)
```

4. Tell me the names and addresses of all the managers, as wells as the number of dependents they have (even if they have zero dependents).

SELECT Fname, Lname, Address, COUNT(Dependent_name) AS Dependents_no
FROM (EMPLOYEE JOIN DEPARTMENT ON Ssn = Mgr_ssn) JOIN DEPENDENT ON Ssn = Essn
GROUP BY Fname;

```
mysql> SELECT Fname, Lname, Address, COUNT(Dependent_name) AS Dependents_no
    -> FROM (EMPLOYEE JOIN DEPARTMENT ON Ssn = Mgr_ssn) JOIN DEPENDENT ON Ssn = Essn
    -> GROUP BY Fname;
+----------+---------+-------------------------+---------------+
| Fname    | Lname   | Address                 | Dependents_no |
+----------+---------+-------------------------+---------------+
| Franklin | Wong    | 638 Voss, Houston, TX   |             3 |
| Jennifer | Wallace | 291 Berry, Bellaire, TX |             1 |
+----------+---------+-------------------------+---------------+
2 rows in set (0.00 sec)
```

5. Show me the names of all employees who have a supervisor.

SELECT Fname, Lname
FROM EMPLOYEE
WHERE Super_ssn = ANY (SELECT Ssn
FROM EMPLOYEE);

```
mysql> SELECT Fname, Lname
    -> FROM EMPLOYEE
    -> WHERE Super_ssn = ANY (SELECT Ssn
    -> FROM EMPLOYEE );
+----------+---------+
| Fname    | Lname   |
+----------+---------+
| John     | Smith   |
| Franklin | Wong    |
| Joyce    | English |
| Ramesh   | Narayan |
| Jennifer | Wallace |
| Ahmad    | Jabbar  |
| Alicia   | Zeleya  |
+----------+---------+
7 rows in set (0.00 sec)
```

6. What are the names of all employees who work in the Administration department who make less money than at least one employee who works in the Research department?

```
SELECT Fname, Lname
FROM EMPLOYEE
WHERE Dno IN (SELECT Dnumber
              FROM DEPARTMENT
              WHERE Dname = 'Administration')
      AND Salary IN (SELECT Salary
                     FROM EMPLOYEE
                     WHERE Dno IN (SELECT Dnumber
                                   FROM DEPARTMENT
                                   WHERE Dname = 'Research') );
```

```
mysql> SELECT Fname, Lname
    -> FROM EMPLOYEE
    -> WHERE Dno IN (SELECT Dnumber
    -> FROM DEPARTMENT
    -> WHERE Dname = 'Administration') AND Salary IN (SELECT Salary
    -> FROM EMPLOYEE
    -> WHERE Dno IN (SELECT Dnumber
    -> FROM DEPARTMENT
    -> WHERE Dname = 'Research') );
+--------+--------+
| Fname  | Lname  |
+--------+--------+
| Ahmad  | Jabbar |
| Alicia | Zeleya |
+--------+--------+
2 rows in set (0.00 sec)
```

7. For each Project, show the project name, the number of employees who work on the project, and the average hours per week each employee works on the project. Order the results alphabetically by the name of the project. A project could have 0 employees working on it.

```
SELECT Pname, COUNT(Essn) AS Employee_no, AVG(Hours)
FROM (PROJECT JOIN WORKS_ON ON Pnumber = Pno) JOIN EMPLOYEE ON Essn = Ssn
GROUP BY Fname;
```

```
mysql> SELECT Pname, COUNT(Essn) AS Employee_No, AVG(Hours) AS Avg_Hours
    -> FROM (PROJECT JOIN WORKS_ON ON Pnumber = Pno) JOIN EMPLOYEE ON Essn = Ssn
    -> GROUP BY Fname;
+-----------------+-------------+-----------+
| Pname           | Employee_No | Avg_Hours |
+-----------------+-------------+-----------+
| Computerization |           2 |        20 |
| Computerization |           2 |        20 |
| ProductY        |           4 |        10 |
| Reorganization  |           1 |      NULL |
| Reorganization  |           2 |      17.5 |
| ProductX        |           2 |        20 |
| ProductX        |           2 |        20 |
| ProductZ        |           1 |        40 |
+-----------------+-------------+-----------+
8 rows in set (0.00 sec)
```

8. For each employee, show the number of projects they work on. They could work on 0 projects.

SELECT Fname, Lname, COUNT(Hours) AS Project_no
FROM EMPLOYEE JOIN ON WORKS_ON ON Ssn = Essn
GROUP BY Fname;

```
mysql> SELECT Fname, Lname, COUNT(Hours) AS Project_No
    -> FROM EMPLOYEE JOIN WORKS_ON ON Ssn = Essn
    -> GROUP BY Fname;
+----------+---------+------------+
| Fname    | Lname   | Project_No |
+----------+---------+------------+
| Ahmad    | Jabbar  |          2 |
| Alicia   | Zeleya  |          2 |
| Franklin | Wong    |          4 |
| James    | Borg    |          0 |
| Jennifer | Wallace |          2 |
| John     | Smith   |          2 |
| Joyce    | English |          2 |
| Ramesh   | Narayan |          1 |
+----------+---------+------------+
8 rows in set (0.00 sec)
```

9. Show the names of all dependents who are dependents of someone who works on the reorganization project.

SELECT Dependent_name
FROM (DEPENDENT AS D JOIN WORKS_ON AS W ON D.Essn = W.Essn) JOIN PROJECT ON Pno = Pnumber
WHERE Pname = ‘Reorganization’;

```
mysql> SELECT Dependent_name
    -> FROM (DEPENDENT AS D JOIN WORKS_ON AS W ON D.Essn = W.Essn) JOIN PROJECT ON Pno = Pnumber
    -> WHERE Pname = 'Reorganization';
+----------------+
| Dependent_name |
+----------------+
| Alice          |
| Joy            |
| Theodore       |
| Abner          |
+----------------+
4 rows in set (0.00 sec)
```

10. For employees who make less than $30000, change their salary to $30000. For all other employees, give them a 10% raise. (This should be done in ONE SQL command)

UPDATE EMPLOYEE
SET Salary =
CASE WHEN Salary < 30000 THEN Salary = 30000
WHEN Salary >= 30000 THEN Salary = Salary * 1.1;