JiWon Kim
CSE 4701

1.

```
mysql> SELECT Fname, Minit, Lname
    -> FROM employee
    -> WHERE Sex = "F"
    -> ORDER BY SALARY;
+----------+-------+---------+
| Fname    | Minit | Lname   |
+----------+-------+---------+
| Joyce    | A     | English |
| Alicia   | J     | Zelaya  |
| Jennifer | S     | Wallace |
+----------+-------+---------+
3 rows in set (0.00 sec)
```

2.

```
mysql> SELECT Fname, Minit, Lname, Bdate
    -> FROM employee
    -> WHERE Dno = '5';
+----------+-------+---------+------------+
| Fname    | Minit | Lname   | Bdate      |
+----------+-------+---------+------------+
| John     | B     | Smith   | 1965-01-09 |
| Franklin | T     | Wong    | 1955-12-08 |
| Joyce    | A     | English | 1972-07-31 |
| Ramesh   | K     | Narayan | 1962-09-15 |
+----------+-------+---------+------------+
4 rows in set (0.02 sec)
```

3.

```
mysql> SELECT
    -> employee.Fname, employee.Minit, employee.Lname, dept_locations.DLocation, dept_locations.Dnumber
    -> SELECT ^C
mysql> SELECT
    -> employee.Fname, employee.Minit, employee.Lname, dept_locations.DLo
cation, dept_locations.Dnumber
    -> FROM employee
    -> INNER JOIN department ON department.Dnumber = employee.Dno
    -> INNER JOIN dept_locations on department.Dnumber = dept_locations.D
number
    -> WHERE employee.Sex = "M";
+----------+-------+---------+-----------+---------+
| Fname    | Minit | Lname   | DLocation | Dnumber |
+----------+-------+---------+-----------+---------+
| John     | B     | Smith   | Bellaire  |       5 |
| John     | B     | Smith   | Houston   |       5 |
| John     | B     | Smith   | Sugarland |       5 |
| Franklin | T     | Wong    | Bellaire  |       5 |
| Franklin | T     | Wong    | Houston   |       5 |
| Franklin | T     | Wong    | Sugarland |       5 |
| Ramesh   | K     | Narayan | Bellaire  |       5 |
| Ramesh   | K     | Narayan | Houston   |       5 |
| Ramesh   | K     | Narayan | Sugarland |       5 |
| James    | E     | Borg    | Houston   |       1 |
| Ahmad    | V     | Jabbar  | Stafford  |       4 |
+----------+-------+---------+-----------+---------+
11 rows in set (0.00 sec)
```

4.

```
mysql> SELECT Fname, Minit, Lname, SALARY
    -> FROM employee
    -> WHERE Super_ssn = "888665555"
    -> ORDER BY SALARY DESC;
+----------+-------+---------+----------+
| Fname    | Minit | Lname   | SALARY   |
+----------+-------+---------+----------+
| Jennifer | S     | Wallace | 43000.00 |
| Franklin | T     | Wong    | 40000.00 |
+----------+-------+---------+----------+
2 rows in set (0.01 sec)
```

5.

```
mysql> SELECT d.Dname AS Department_Name,
    ->        CONCAT(m.Fname, ' ', m.Lname) AS Manager_Name,
    ->        AVG(e.SALARY) AS Avg_Salary
    -> FROM department d
    -> JOIN employee m ON d.Mgr_ssn = m.Ssn
    -> JOIN employee e ON d.Dnumber = e.Dno
    -> GROUP BY d.Dname, Manager_Name;
+----------------+-----------------+-------------+
| Department_Name | Manager_Name     | Avg_Salary   |
+----------------+-----------------+-------------+
| Headquarters    | James Borg       | 55000.000000 |
| Administration  | Jennifer Wallace | 31000.000000 |
| Research        | Franklin Wong    | 33250.000000 |
+----------------+-----------------+-------------+
3 rows in set (0.04 sec)
```

6.

```
mysql> SELECT project.Pname, SUM(works_on.Hours) AS hours
    -> FROM employee
    -> JOIN project ON employee.Dno = project.Dnum
    -> JOIN works_on ON project.Pnumber = works_on.Pno
    -> GROUP BY project.Pname
    -> ORDER BY hours DESC;
+-----------------+-------+
| Pname           | hours |
+-----------------+-------+
| ProductX        |   212 |
| ProductZ        |   200 |
| Newbenefits     |   165 |
| ProductY        |   152 |
| Computerization |   135 |
| Reorganization  |    25 |
+-----------------+-------+
6 rows in set (0.03 sec)
```

7.

```
mysql> SELECT project.Pname, SUM(works_on.Hours) AS hours
    -> FROM employee
    -> JOIN project ON employee.Dno = project.Dnum
    -> JOIN works_on ON project.Pnumber = works_on.Pno
    -> GROUP BY project.Pname
    -> HAVING hours < 40
    -> ORDER BY hours DESC;
+----------------+-------+
| Pname          | hours |
+----------------+-------+
| Reorganization |    25 |
+----------------+-------+
1 row in set (0.00 sec)
```

8.

```
mysql> SELECT employee.Fname, employee.Minit, employee.Lname, employee.Ssn
    -> FROM employee
    -> JOIN dept_locations ON employee.Dno = dept_locations.Dnumber
    -> JOIN project on employee.Dno = project.Dnum
    -> WHERE dept_locations.Dlocation = "Houston" AND project.Plocation != "Houston";
+----------+-------+---------+-----------+
| Fname    | Minit | Lname   | Ssn       |
+----------+-------+---------+-----------+
| John     | B     | Smith   | 123456789 |
| Franklin | T     | Wong    | 333445555 |
| Joyce    | A     | English | 453453453 |
| Ramesh   | K     | Narayan | 666884444 |
| John     | B     | Smith   | 123456789 |
| Franklin | T     | Wong    | 333445555 |
| Joyce    | A     | English | 453453453 |
| Ramesh   | K     | Narayan | 666884444 |
+----------+-------+---------+-----------+
8 rows in set (0.02 sec)
```

9.

```
mysql> SELECT department.Dname
    -> FROM employee
    -> JOIN dependent ON employee.Ssn = dependent.Essn
    -> JOIN department ON employee.Dno = department.Dnumber
    -> GROUP BY department.Dname
    -> HAVING COUNT(DISTINCT employee.Ssn) > 1;
+----------+
| Dname    |
+----------+
| Research |
+----------+
1 row in set (0.05 sec)
```

10.

```
mysql> SELECT employee.Fname, employee.Minit, employee.Lname
    -> FROM employee
    -> WHERE employee.Ssn IN (
    -> SELECT dependent.Essn
    -> FROM dependent
    -> WHERE dependent.Relationship = "Spouse")
    -> AND employee.Ssn NOT IN (
    -> SELECT dependent.Essn
    -> FROM dependent
    -> WHERE dependent.Relationship IN ("Son", "Daughter"));
+----------+-------+---------+
| Fname    | Minit | Lname   |
+----------+-------+---------+
| Jennifer | S     | Wallace |
+----------+-------+---------+
1 row in set (0.08 sec)
```

11.

```
mysql> SELECT employee.Fname, employee.Minit, employee.Lname
    -> FROM employee
    -> JOIN dependent on employee.Ssn = dependent.Essn
    -> JOIN works_on ^C
mysql> SELECT employee.Fname, employee.Minit, employee.Lname
    -> FROM employee
    -> JOIN dependent ON employee.Ssn = dependent.Essn
    -> JOIN works_on ON employee.Ssn = works_on.Essn
    -> WHERE dependent.Relationship = "Spouse"
    -> GROUP by employee.Ssn
    -> HAVING SUM(works_on.Hours) > 35;
+---------+-------+-------+
| Fname   | Minit | Lname |
+---------+-------+-------+
| John    | B     | Smith |
| Franklin | T     | Wong  |
+---------+-------+-------+
2 rows in set (0.00 sec)
```

12.

13.

```
mysql> SELECT
    ->   CONCAT(e.Fname, ' ', e.Minit, ' ', e.Lname) AS Employee_Name,
    ->   CONCAT(m.Fname, ' ', m.Minit, ' ', m.Lname) AS Manager_Name,
    ->   GROUP_CONCAT(DISTINCT p.Pname) AS Projects_Worked_On
    -> FROM employee e
    -> JOIN employee m ON e.Super_ssn = m.Ssn
    -> JOIN works_on w ON e.Ssn = w.Essn
    -> JOIN project p ON w.Pno = p.Pnumber
    -> GROUP BY e.Ssn
    -> HAVING COUNT(DISTINCT p.Pnumber) = 2;
+-------------------+-----------------+----------------------------+
| Employee_Name     | Manager_Name    | Projects_Worked_On         |
+-------------------+-----------------+----------------------------+
| John B Smith      | Franklin T Wong | ProductX,ProductY          |
| Joyce A English   | Franklin T Wong | ProductX,ProductY          |
| Jennifer S Wallace | James E Borg    | Newbenefits,Reorganization |
| Ahmad V Jabbar    | Franklin T Wong | Computerization,Newbenefits |
+-------------------+-----------------+----------------------------+
4 rows in set (0.00 sec)
```