☕ DATA 514 Section 3 Worksheet

These tables will be used throughout this worksheet

```
CREATE TABLE Class (
    dept   VARCHAR(50),
    number INT,
    title  VARCHAR(50),
    PRIMARY KEY (dept, number));

CREATE TABLE Instructor (
    username   VARCHAR(50) PRIMARY KEY,
    fname      VARCHAR(50),
    lname      VARCHAR(50),
    started_on CHAR(10));

CREATE TABLE Teaches(
    username VARCHAR(50),  -- alternately, can use the
REFERENCES syntax here
    dept     VARCHAR(50),
    number   INT,
    PRIMARY KEY (username, dept, number),
    FOREIGN KEY (username) REFERENCES Instructor,
    FOREIGN KEY (dept, number) REFERENCES Class);
```

Question 1

Write an SQL query that will return the first and last name of all instructors who are teaching at least one class.

Question 2

For each instructor, write an SQL query that will return their username and the number of classes they teach.

Question 3

Unnest the following SQL query so it does not use subqueries:

```
SELECT I.username, (
     SELECT COUNT(*)
       FROM Teaches AS T
      WHERE T.username = I.username
     )
   FROM Instructor AS I;
```

Question 4

Unnest the following SQL query so it does not use subqueries:

```
SELECT C1.dept, C1.number
FROM Class AS C1
WHERE C1.number >= ALL (
        SELECT C2.number
          FROM Class AS C2
         WHERE C1.dept = C2.dept
     );
```

Question 5

Write an SQL query that will return the number of instructors who are teaching at least one class. (1 row)

Question 6

Write an SQL query that will return the first and last name of the newest instructor(s) (who started on the latest date). Assume Instructor.started_on uses yyyy-mm-dd format. If there are multiple instructors, list all of them.

Question 7

Write an SQL query that will return the username, first name, and last name of the instructors who teach the most number of classes. If there are multiple instructors, list all of them.

Question 8

Write an SQL query that will answer the question, which CSE courses do neither Dr. Levy (username 'levy') nor Dr. Wetherall (username 'djw') teach? Give the department, number, and title of these courses.