Section 3 Worksheet

Part 1: Movies and Directors

```
CREATE TABLE Movie (
      movie_name VARCHAR(75),
      movie_id INT,
      director_id INT,
      year_released INT,
      budget INT,
      PRIMARY KEY(movie_id),
      FOREIGN KEY(director_id) REFERENCES Director(director_id)
);

CREATE TABLE Director (
      director_id INT,
      director_name VARCHAR(75),
      director_country VARCHAR(75),
      PRIMARY KEY(director_id)
);
```

1. Find the id and name of all directors who have directed more than 20 movies.

```
SELECT D.director_id as ID, D.director_name AS name
FROM Director as D, Movie as M
WHERE D.director_id = M.director_id
GROUP BY D.director_id, D.director_name
HAVING count(*) > 20
```

2. For each director, find the corresponding movie that has the highest budget.

```
SELECT D.director_name AS name, M.movie_name
FROM (SELECT D.director_id as id, max(M.budget) as max_budget

FROM Director as D, Movie as M
WHERE  D.director_id = M.director_id
GROUP BY D.director_name

) AS sub
WHERE D.director_id = M.director_id AND
M.budget = sub.max_budget
```

Part 2: Classes and Instructors

```
CREATE TABLE Class (
      dept VARCHAR(6),
      number INTEGER,
      title VARCHAR(75),
      PRIMARY KEY (dept, number)
);

CREATE TABLE Instructor (
      username VARCHAR(8),
      fname VARCHAR(50),
      lname VARCHAR(50),
      started_on CHAR(10),
      PRIMARY KEY (username)
);

CREATE TABLE Teaches (
      username VARCHAR(8),
      dept VARCHAR(6),
      number INTEGER,
      PRIMARY KEY (username, dept, number),
      FOREIGN KEY (username) REFERENCES Instructor(username),
      FOREIGN KEY (dept, number) REFERENCES Class(dept, number)
);
```

1. How many classes are being taught by at least one instructor?

2. Which instructors teach more than 1 class? Give the username, first name, and last name of these instructors.

3. Which CSE courses do neither Dr. Levy (‘levy’) nor Dr. Wetherall (‘djw’) teach? Give the department, number, and title of these courses.