

CSE 344 Section 3 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) REFERENCES Instructor,
    dept      VARCHAR(50),
    number    INT,
    FOREIGN KEY (dept, number) REFERENCES Class);
```

- How many classes are currently being taught by at least one instructor?
- Return the first name and last name of the instructors who teach the most number of classes. If there are multiple instructors, list all of them.

```
CREATE TABLE Members (
    member_id    INT PRIMARY KEY,
    name         VARCHAR(100) NOT NULL,
    city         VARCHAR(100),
    join_date    DATE);

CREATE TABLE Fish (
    fish_id      INT PRIMARY KEY,
    species      VARCHAR(100) NOT NULL,
    water_type   VARCHAR(20), -- e.g. 'Freshwater', 'Saltwater'
    adult_size   INT);      -- average adult size (e.g. length in cm)

CREATE TABLE Ownership (
    member_id    INT REFERENCES Members,
    fish_id      INT REFERENCES Fish,
    date_acquired DATE,
    PRIMARY KEY(member_id, fish_id));
```

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a. Find all fish whose `adult_size` is bigger than that of any fish owned by Carol. Output their `fish_id` and `adult_size`.

b. Find all members who own every freshwater fish, and output their names

c. Find all rare fish (we define rare fish as those owned either by only 1 member or by no members). Output the `fish_id` and `species`. Challenge: can you solve this both using and without using subqueries?