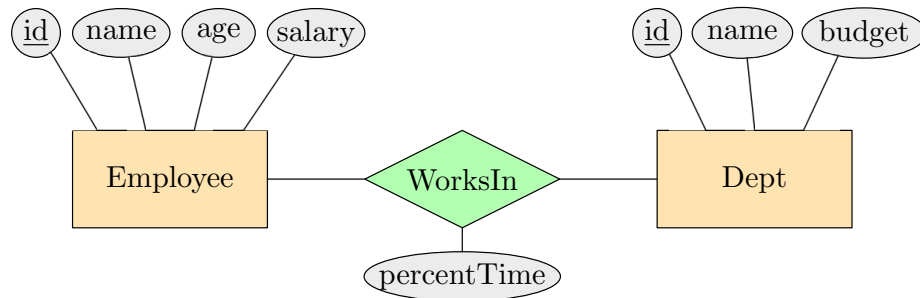# CS 336 Homework 2

1. Write SQL statements to create the relevant tables described by the following ER diagram. Your statements should specify an appropriate data type for each field and include key constraints.

   (The `percentTime` attribute reflects how an employee's time is split between departments if they work in more than one department.)

2. Consider the following schema:

   Suppliers(<u>id</u>, name, address)

   Parts(<u>id</u>, name, color)

   Catalog(<u>sid</u>, <u>pid</u>, cost)

   where underlined field(s) are the primary key for each relation, `sid` is a supplier ID, and `pid` is a part ID. For example, Toshiba (supplier) may produce red battery cases (part) at $1.15 each (cost).

   Write the following queries in SQL. You should not have duplicate values in your results.

   (a) Find the names of suppliers who supply some red part.

   (b) Find the IDs of suppliers who supply a red part or are located at 123 College Ave.

   (c) Find the IDs of suppliers who supply all red or green parts.

   (d) Find the IDs of suppliers who supply all red parts or all green parts.

   (e) Find the IDs of the most expensive parts supplied by Toshiba.

3. Consider the following schema:

Students(<u>id</u>, name, major, level, age)

Classes(<u>name</u>, startTime, room, pid)

Takes(<u>sid</u>, <u>cname</u>)

Profs(<u>id</u>, name, dept)

Notes:

- Underlined field(s) are the primary key for each relation.
- `level` in Students is one of 'FR', 'SO', 'JR', or 'SR', representing what year the student is (freshman, sophomore, junior, or senior).
- `pid` in Classes is the id of the professor teaching that course.
- `sid` and `cname` in Takes are the student ID and course name, respectively.

Write the following queries in SQL. You should not have duplicate values in your results.

(a) Find the names of all juniors taking a class taught by Marie Curie.

(b) Find the names of courses either held in Tillett 232 or with at least 5 students enrolled.

(c) Find the names of professors who teach in every room in which some class is taught.

(d) Find the average age of students for each level.

(e) For each professor who has taught *only* in Tillett 232, list the professor's name and the total number of classes they've taught.