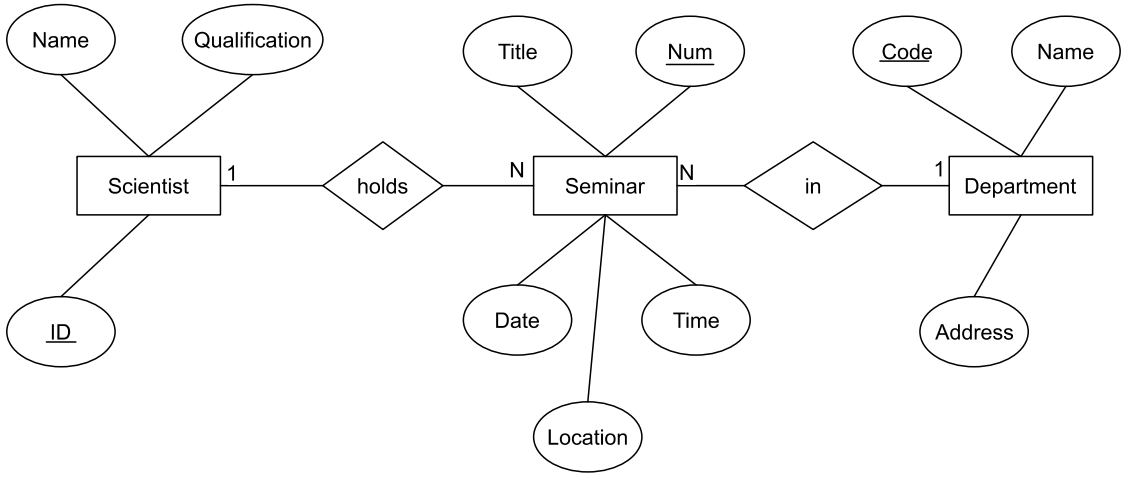
CS 410 Databases (Spring 2018)

Homework #1 (80 points), Due Date: 1/24/2018 (Wednesday 11:59 PM)

Submission Instructions: Submit a PDF file with your solution via Blackboard.

Exercise 1 (30 points): Consider the following Entity-Relationship schema.

1. List all entities in the schema.
2. List all relationships in the schema.
3. Indicate, for each entity, identifiers/external identifiers.
4. Describe in English the information represented by the Entity-Relationship schema.



Exercise 2 (50 points): Represent the following chain of pharmacies mini-world by using the constructs of the Entity-Relationship model.

- Patients are described by their names, addresses, and ages. Define a feasible identifier for a patient.
- Doctors are described by name, specialty, and years of experience. Define a feasible identifier for a doctor.
- Each pharmaceutical company is identified by name and has a phone number.
- For each drug, the trade name and formula must be recorded. Each drug is sold by a given pharmaceutical company, and the trade name identifies a drug uniquely from among the products of that company.
- Each pharmacy has a name, address, and phone number.
- Every patient has a primary physician. Every doctor has at least one patient.
- Each pharmacy sells several drugs and has a price for each. A drug could be sold at several pharmacies, and the price could vary from one pharmacy to another.

- Doctors prescribe drugs for patients. A doctor could prescribe one or more drugs for several patients, and a patient could obtain prescriptions from several doctors. Each prescription has a date and a quantity associated with it. You can assume that if a doctor prescribes the same drug for the same patient more than once, only the last such prescription needs to be stored.