

# E/R Design Example

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## 1 Administrivia

### Announcements

We won't explicitly cover 5.5–7 in class. As with other assigned reading, you're responsible.

### Assignment

Read 6.1.

### From Last Time

Intro to E/R methodology.

### Outline

1. E/R design example.

### Coming Up

Relational algebra.

## 2 E/R Design Example

### 1. Domain description:

We want to design a mailing list server, to support any number of mailing lists. Each list has one owner (the list administrator). Only the owner may designate “senders” — those who are allowed to post messages to the list. The owner may or may not be a sender. Owner and senders must also be readers. For each list, there may be an unlimited number of senders. Anyone may subscribe to any list as a reader. They may also unsubscribe themselves. Assume that everything is web-based. Messages are retained for an amount of time specific to each list and consist of a subject and text. Messages should indicate sender. E-mail addresses and passwords are used for authentication purposes. Passwords may be list-specific. Because everything is web-based, e-mail is not used to send messages, ordinarily. E-mail may be used for private communication between a list owner and a reader of that list. There are no limitations as to how many lists a user may own or how many lists a user may send to. Lists have names and descriptions and exist for a fixed amount of time.

Allocate ten minutes for each of the following activities.

### 2. The entities:

- (a) Users.
- (b) Lists.
- (c) Messages.

What are the attributes?

### 3. The relationships:

- (a) Administers.
- (b) SendsTo.
- (c) Reads.

(d) SentBy/To.

What are the attributes and roles?

4. The constraints: What are they here?
5. Design E/R diagrams and determine constraints.
6. Implement as a relational schema.