Review

• Many-to-many
  – Mapping table with foreign keys to related tables
  – Combination of foreign keys unique

• One-to-many
  1. Mapping table as with many-to-many with additional unique constraint on the "many" foreign key
  2. Add foreign key for the "one" table to the "many" table

• One-to-one
  1. Mapping table with unique constraints on both foreign keys
  2. Add foreign key for one of the tables to the other with a unique constraint on the foreign key
Sequences

• Sequences are database objects which hold an integer value and have special functions for getting and incrementing the value

  CREATE SEQUENCE addresses_addr_id_seq;

  SELECT nextval('addresses_addr_id_seq');
SERIAL

• Usually, sequences are not created or used directly but are automatically created and used via a SERIAL datatype

```
CREATE TABLE addresses ( 
  addr_id SERIAL,
  ... 
);
```

– This automatically creates a sequence named 'addresses_addr_id_seq' and makes the addr_id column INTEGER NOT NULL DEFAULT nextval('addresses_addr_id_seq')
SERIAL PRIMARY KEY

• A SERIAL column is often used as the primary key for a table

```
CREATE TABLE addresses (  
    addr_id SERIAL PRIMARY KEY,
    ...
);
```

– In addition to NOT NULL and DEFAULT nextval('addresses_addr_id_seq'), this makes addr_id UNIQUE and optimizes for queries