

# EECS-317 Data Management and Information Processing

## Lecture 8 – Relational Database Design Examples

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Northwestern

# Announcements

- HW3 is due Monday.
- Exam is in one week (Thurs May 2<sup>nd</sup>)
- Tuesday's lecture will be a midterm review

# Last lecture: Relational Database Design

- *Primary* and *unique keys* prevent rows from repeating certain columns.
- *Foreign keys* link tables and point to primary/unique keys.
  - Create *parent/child* table relationships. Must fill in parent before child.
  - Parent rows cannot be deleted unless default foreign key behavior is changed.
    - Must kill children first!
- Tables can represent *Objects*, *Events* (have time), and *Relationships*:
  - *One to many* relationships allow multiple child rows referencing one parent row
    - Implemented with a single foreign key.
  - *Many to many* relationships link two or more rows
    - Implemented with a linking table
  - *One to one* relationships create subset tables
    - Implemented with a single foreign key that is also a unique key.

# Database Schema Design steps

## 1. List tables

- (Objects, events, relationships)

## 2. Choose **primary key** for each table

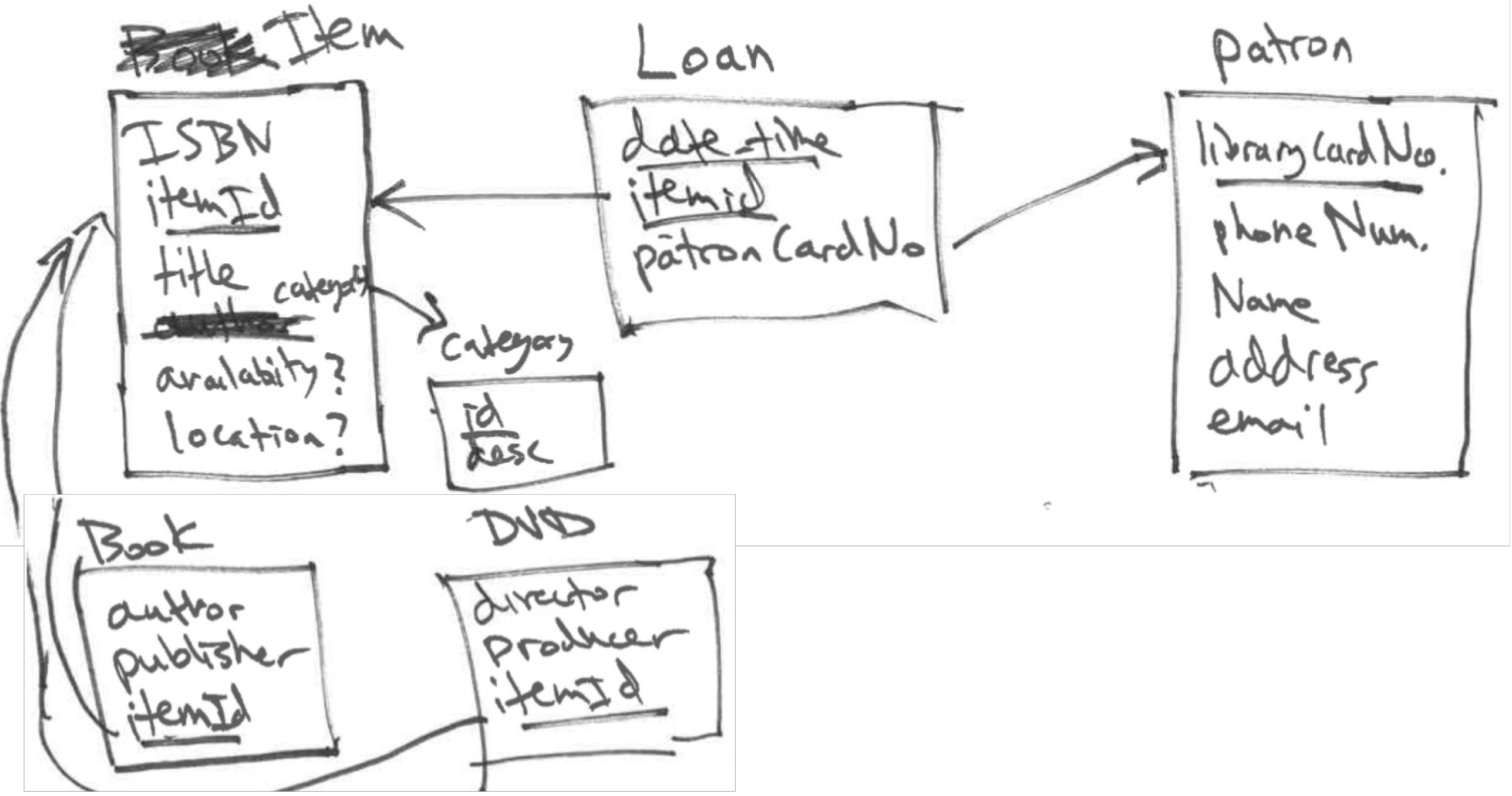
## 3. Choose **foreign keys** to link tables

## 4. Add uniq keys and/or optional columns

## 5. Refine the design, revisiting decisions made above

On to the examples...

# Lending Library



# Music Festival

