Project Phase 1 and Assumptions

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April 28, 2020

CS 166 Database Management Systems
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Section 22
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In completing this homework we consulted…

- Gehrke, Johannes, and Raghu Ramakrishnan. *Database management systems third edition*. McGraw-Hill, 2003.
- Bakalov Petko's CS 166 Database Management Systems Video Lectures and Lecture Slides. University of California – Riverside.
- Qizhong Mao's CS 166 Database Management Systems Video Lab, Lab Assignments & Solutions, and Lab Notes. University of California – Riverside.

No code was written for this assignment.

See next page for Project Phase 1 Assumptions.

Project Phase 1 Assumptions

Overall Assumptions

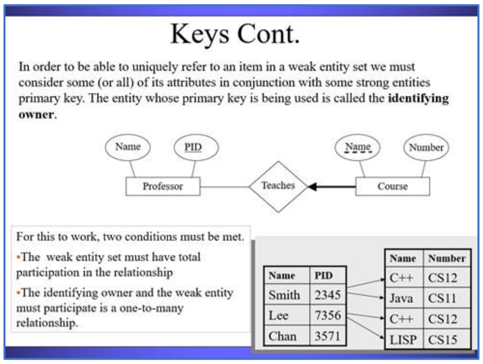
- We can create unique primary keys for tables (primary keys outside of the requirements, e.g., Cinema, Theater, Movie) to avoid weak entities.
- We avoided a ternary relationship between Seating, Booking, and Show by creating three binary relationships among the respective entities.
- Annotations are made next to certain document elements to explain our reasoning (e.g., why this is bold, why this is an arrow).
- The UI/front end will make updates to multiple tables when a single Booking is created or updated.

2.1 Movie

- Movie has a unique id attribute to make this a strong entity.

2.2 City

- States and Cities after modelled after the slide below. The state column in the State table are primary keys – they are unique and there is only one copy of each. The same cannot be said for Cities table – one zip may be used with different cities and one city may be used with multiple zips. However we can create one-to-many (one state to many city/zip relationships) relationship called Addresses and force total participation for the weak entity Cities in table Addresses. This allows us to follow the spec that says, “A city can have no cinemas.” So Cities use a self-contained primary key, which we then extend to the table Addresses and the relationship between relationships CinemaAddresses.



Keys Cont.

In order to be able to uniquely refer to an item in a weak entity set we must consider some (or all) of its attributes in conjunction with some strong entities primary key. The entity whose primary key is being used is called the **identifying owner**.

Name
PID
Professor
Teaches
Name
Number
Course

For this to work, two conditions must be met.

- The weak entity set must have total participation in the relationship
- The identifying owner and the weak entity must participate is a one-to-many relationship.

Name	PID
Smith	2345
Lee	7356
Chan	3571

Name	Number
C++	CS12
Java	CS11
C++	CS12
LISP	CS15

2.3 User Accounts

- As the same email cannot be used in multiple accounts, we use this as the primary key for the User table.

2.4 Cinema

- Cinema has a unique id attribute to make this a strong entity.
- Multiple cinemas in one city may have the same name (cinemas in the same company, like AMC) – no further assumptions were enforced.

2.5 Cinema Theater

- Theater has a unique id attribute to make this a strong entity.

2.6 Cinema Seating

- Seating has a unique id attribute to make this a strong entity.

2.7 Show

- Show has a unique id attribute to make this a strong entity.
- Shows can be filtered by the theaterid attribute since a primary key is unique to each theater.

2.8 Booking

- Booking has a unique id attribute to make this a strong entity.

2.9 Show Seating

- This is created using a relationship between Show and Seating.
- **The booking for the show seating is determined by the union of ShowBooking and SeatingBooking using the ShowSeating column values (seatid and showid).**