

Assignment 2: ER Diagram
CPS510-Section 8
Fall 2023

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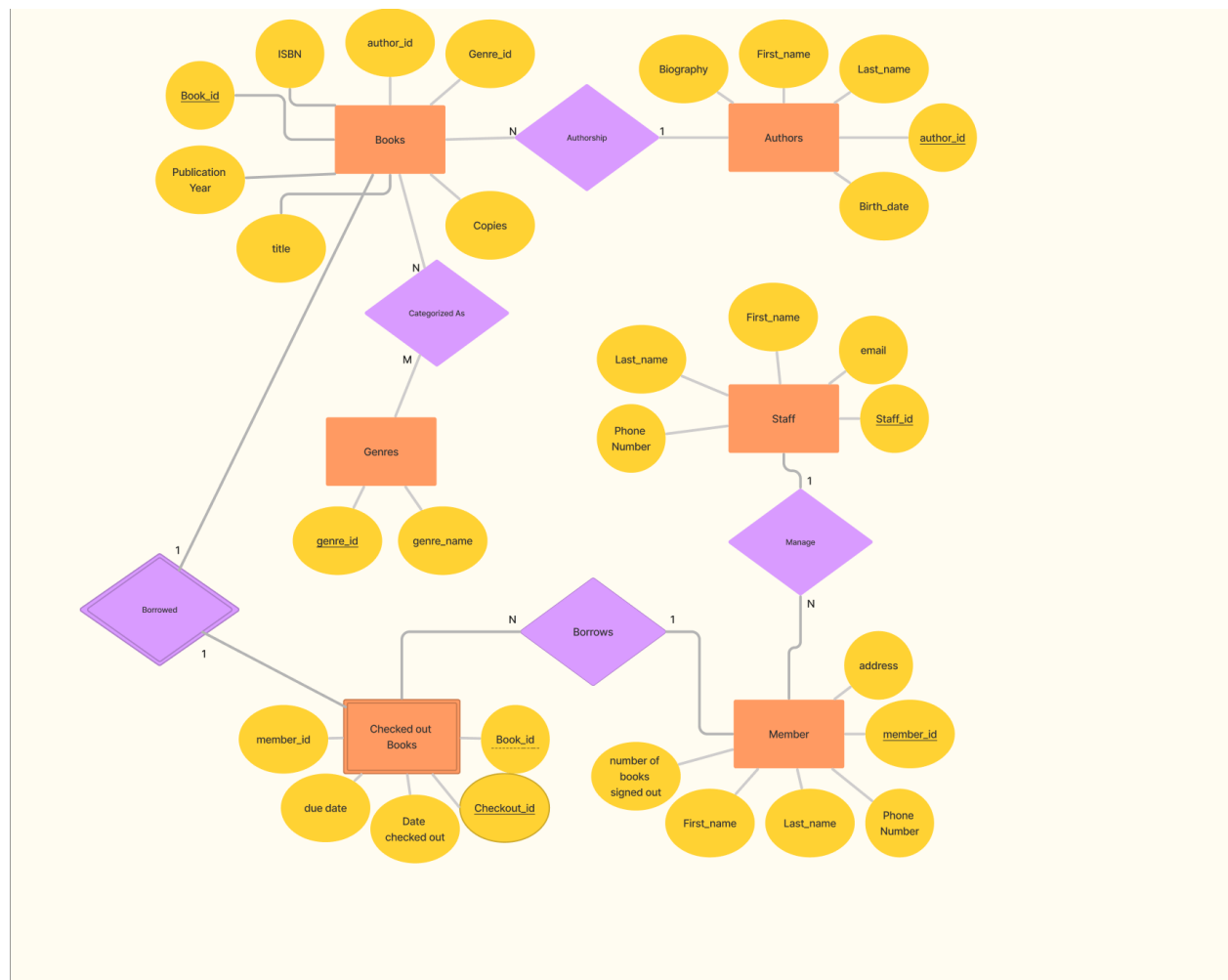
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Library Database System

ER Diagram:

(For a more zoomed in view please click the link below)

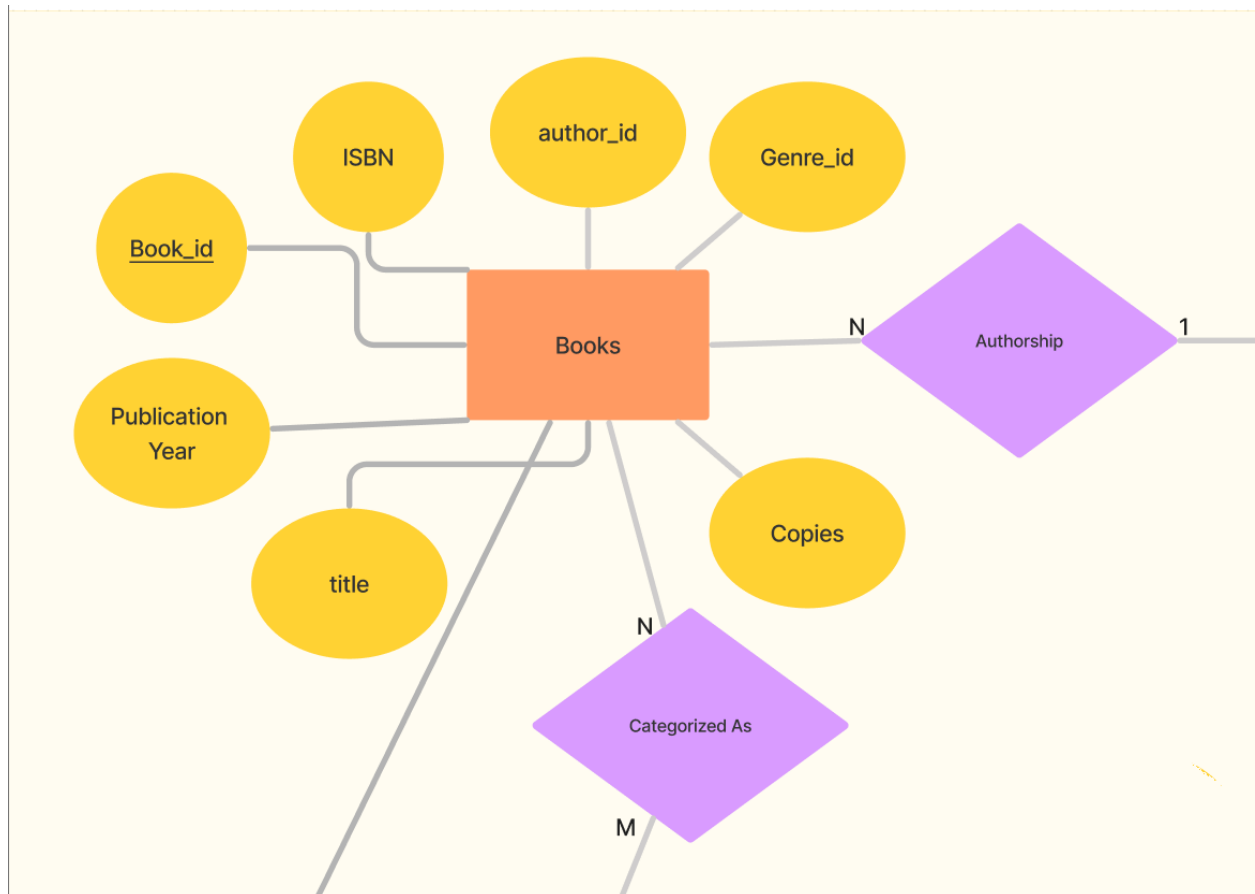
<https://www.figma.com/file/HHyTWOwdy2RIMFANArBPUh/ER-Model-for-Library-Database-System?type=whiteboard&node-id=0%3A1&t=QVLGNJkKcTYEOUFA-1>



Description of the ER Diagram

1. **BOOK Record**

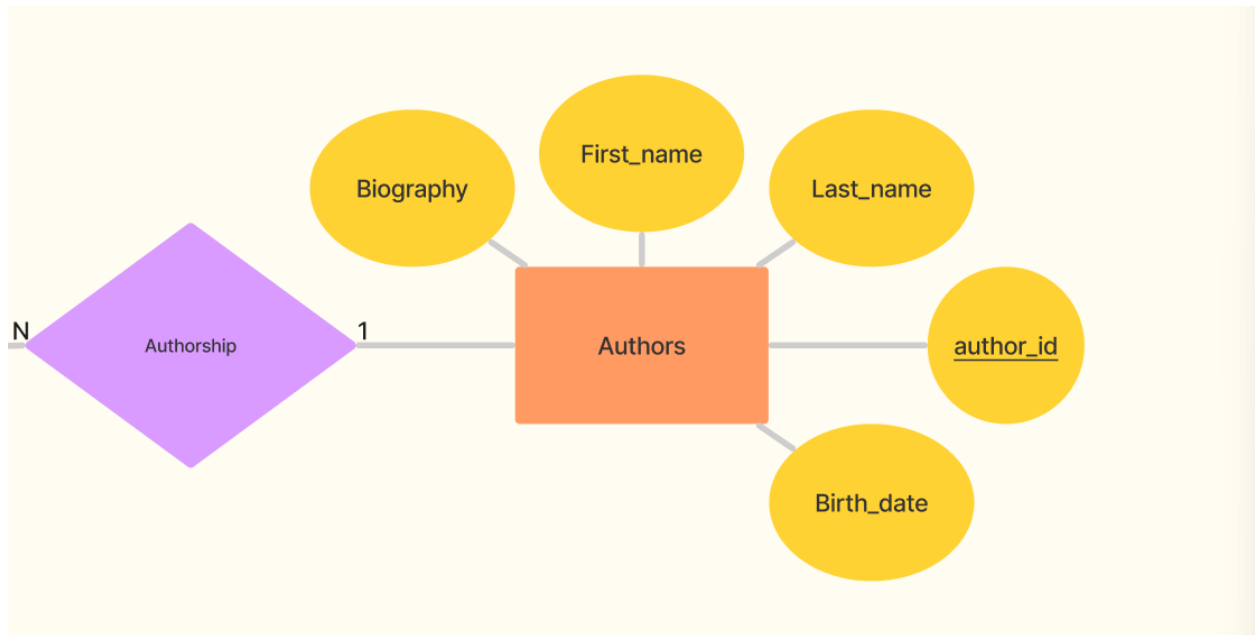
- a. Attributes: book_id (primary key), title, author_id, publication_year, ISBN, genre_id, copies
- b. Relationships:
 - i. Many-to-Many with **GENRES**
 - The genre can have multiple books and books can have multiple genres
 - ii. Many-to-One with **AUTHORS**
 - Since one author can write many books in the database the relationship is Many-to-One
 - iii. One-to-One with **CHECKED OUT BOOKS**
 - One checked out book is only related to one book



2. **AUTHORS Record**

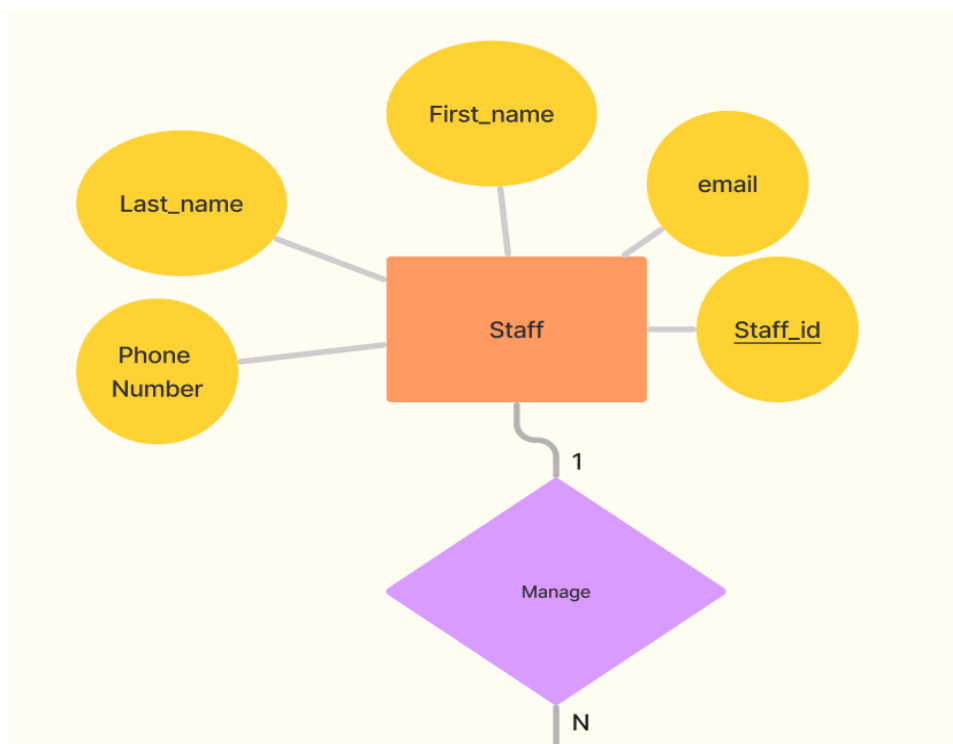
- a. Attributes: author_id (primary key), first_name, last_name, birth_date, biography
- b. Relationships:
 - i. One-to-Many with **BOOK**

- One-to-Many with **CHECKED OUT BOOKS** (one member can checkout multiple books)

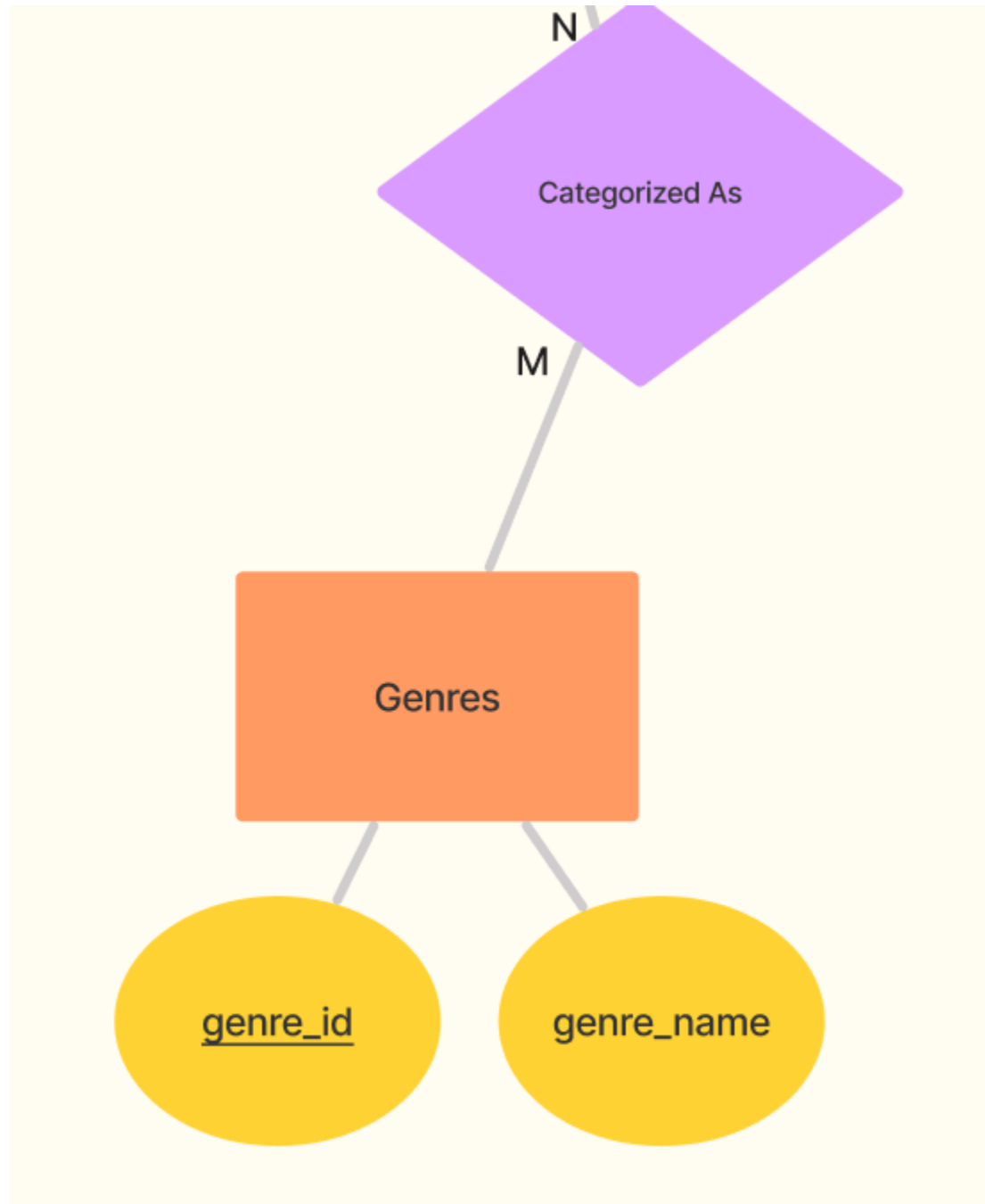


3. **STAFF Record**

- Attributes: staff_id (primary key), first_name, last_name, email, phone_number, start_date
- Relationships:
 - One-to-Many with **MEMBERS**
 - One staff member can manage multiple library members
 - One-to-Many with **CHECKED OUT BOOKS**
 - One staff member can checkout as many books as they want



4. **GENRES Record**
- a. Attributes: genre_id (primary key), genre_name (primary key)
 - b. Relationships:
 - i. Many-to-Many with **BOOK**
 - The genre can have multiple books and books can have multiple genres



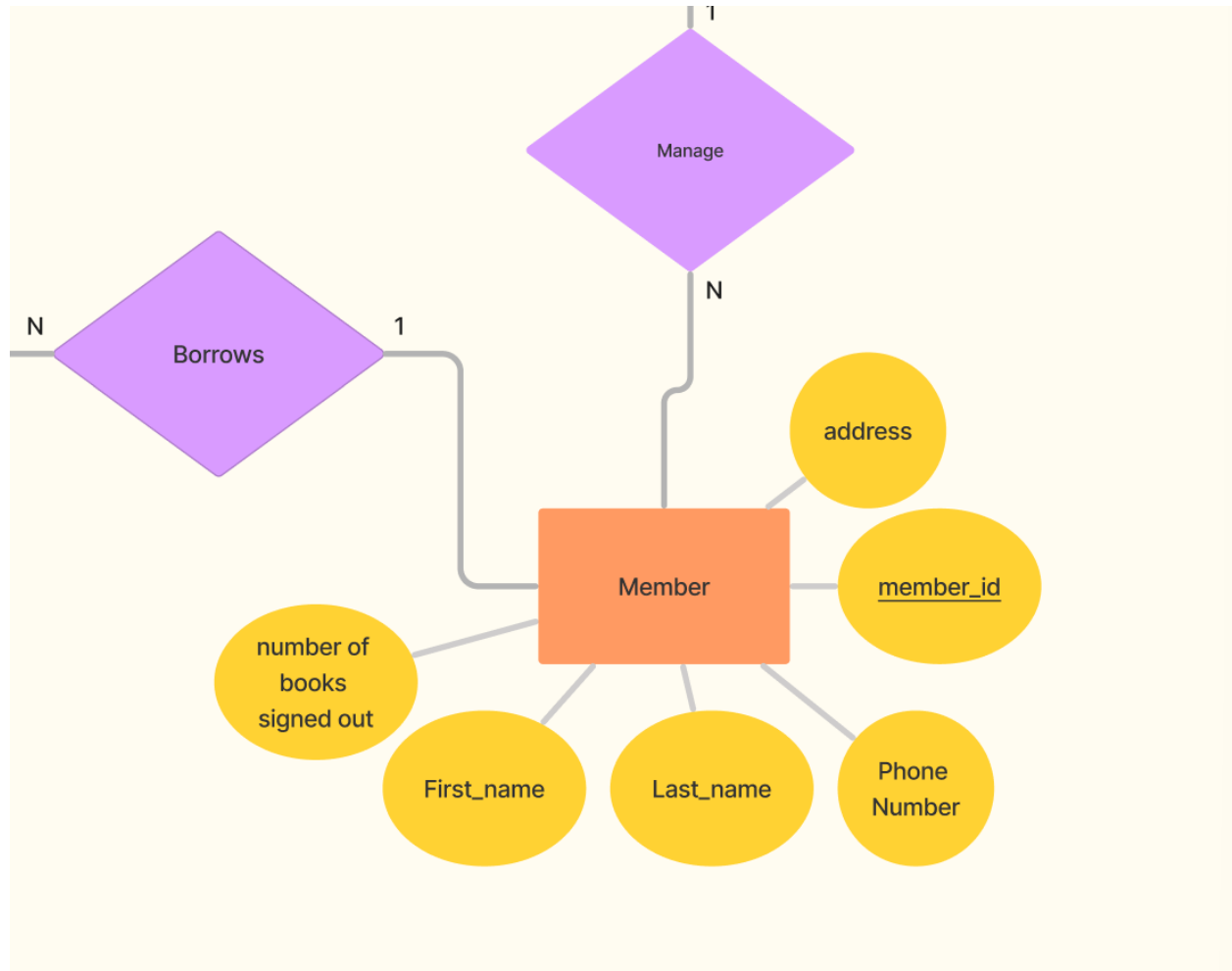
5. **MEMBERS Record**

a. Attributes: member_id (primary key), first_name, last_name, phone_number, address, number_of_books_signed_out

b. Relationships:

i. One-to-Many with **CHECKED OUT BOOKS**

- One library member can checkout as many books as they want



6. **CHECKED OUT BOOKS Record**

a. Attributes: checkout_id (partial key), book_id, member_id, date_checked_out, due_date

b. Relationships:

i. Many-to-One with **MEMBERS**

- One library member can checkout as many books as they want

ii. One-to-One with **BOOKS**

- One checked out book is only related to one book

