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CMPE 232 – RELATIONAL DATABASES
PROJECT PHASE 2 DOCUMENT

In our project, e-library database, we already had these attributes given below;

- A user is identified by a user ID (uID).
- A book is identified by a book ID (bookID).
- An article is identified by an article ID (arID).
- A magazine is identified by a magazine ID (mID).
- An e-book is identified by an e-book ID (ebookID).
- An e-article is identified by an e-article ID (earID).
- An e-magazine is identified by an e-magazine ID (emID).
- An author is identified by an author ID (authorID).

- A user should be stored in the library system with their unique id number, email, name and phone number.
- A book should be stored in the library system with its book ID, name, number of pages and year that it's published.
- An article should be stored in the library system with its article ID, title, number of pages and year that it's released.
- A magazine should be stored in the library system with its magazine ID, title, number of pages and its issue.
- An e-book should be stored in the library system with its e-book ID, name, number of pages, year that it's published and its loan fee.
- An e-article should be stored in the library system with its e-article ID, title, number of pages, year that it's released and its loan fee.
- An e-magazine should be stored in the library system with its e-magazine ID, title, number of pages, issue and its loan fee.
- An author should be stored in the library system with their author ID and name.
- A user is capable of renting materials which have virtual copies (e-book, e-magazine, e-article) in exchange of a loan fee.
- A user is capable of reserving materials which have only hard copies (book, magazine, article).
- An author can write books, e-books, articles and e-articles.

- Every time a user rents a material, the loan count increases by 1.

CHANGES WE MADE:

For phase 2 in our project, we decided to make these changes:

- We divided our Writes Table to four other tables; Writes_B, Writes_EB, Writes_A, Writes_EA. These Writes Tables connect book, e-book, article, e-article and author.
- Writes_B takes Author ID and Book ID as primary keys but they are also foreign keys.
- Writes_EB takes Author ID and E-book ID as primary keys but they are also foreign keys.
- Writes_A takes Author ID and Article ID as primary keys but they are also foreign keys.
- Writes_EA takes Author ID and E-article ID as primary keys but they are also foreign keys.

- We divided our Reserve Table to three other tables; Reserve_B, Reserve_A, Reserve_M. These Reserve Tables connect the reader and reserved book, article and magazine individually.
- Reserve_B takes Reader ID and Book ID as primary keys but they are also foreign keys.
- Reserve_A takes Reader ID and Article ID as primary keys but they are also foreign keys.
- Reserve_M takes Reader ID and Magazine ID as primary keys but they are also foreign keys.

- We divided our Rent Table to three other tables; Rent_EB, Rent_EA, Rent_EM. These Rent Tables connect the reader and reserved e-book, e-article and e-magazine individually.

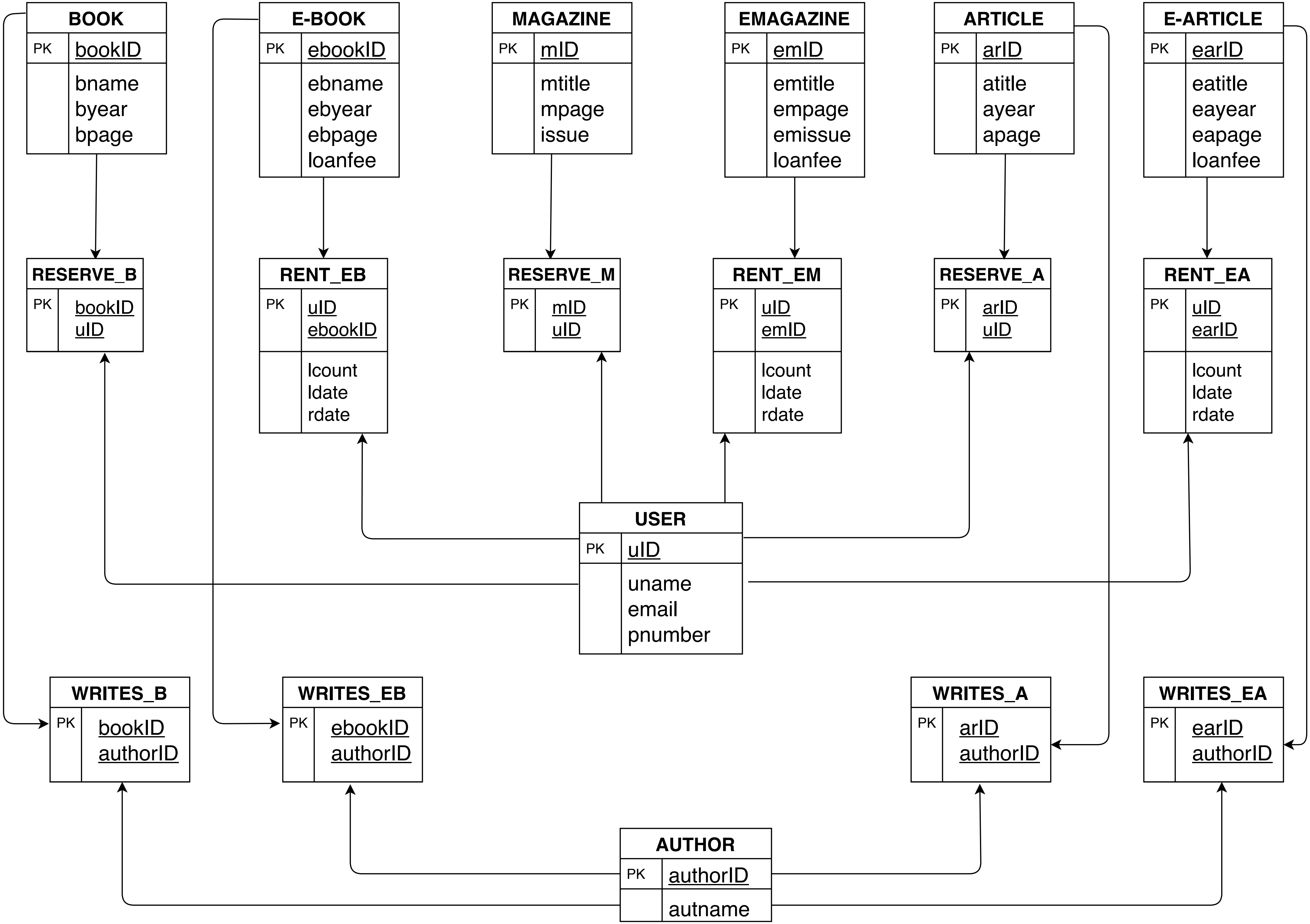
- Rent_EB has the attributes lcount, ldate and rdate. It takes Reader ID and E-book ID as primary keys from other tables but they are also foreign keys.

- Rent_EA has the attributes lcount, ldate and rdate. It takes Reader ID and E-article ID as primary keys from other tables but they are also foreign keys.

- Rent_EM has the attributes lcount, ldate and rdate. It takes Reader ID and E-magazine ID as primary keys from other tables but they are also foreign keys.

JAVA APPLICATION PROCESS:

We followed the instructions as stated in the recitations. Firstly, we created the statements for our operations. There are twelve of them. These twelve statements contain all the operations that a user can perform with this program. Our program uses if-else statements to take an input from the user (from 1 to 12) to operate one of these twelve statements. We operate the SQL statements based on the numbers entered by the user.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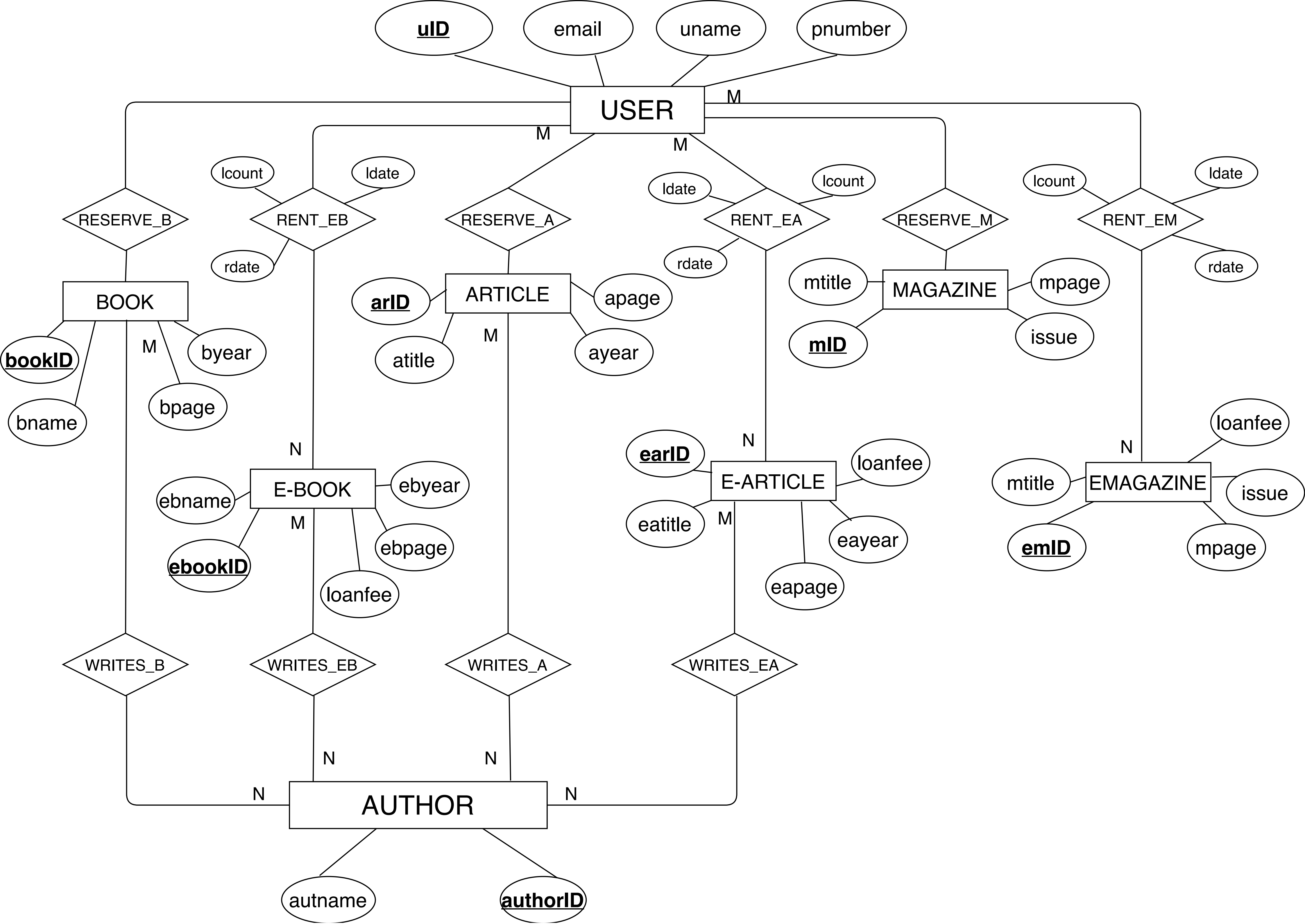
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