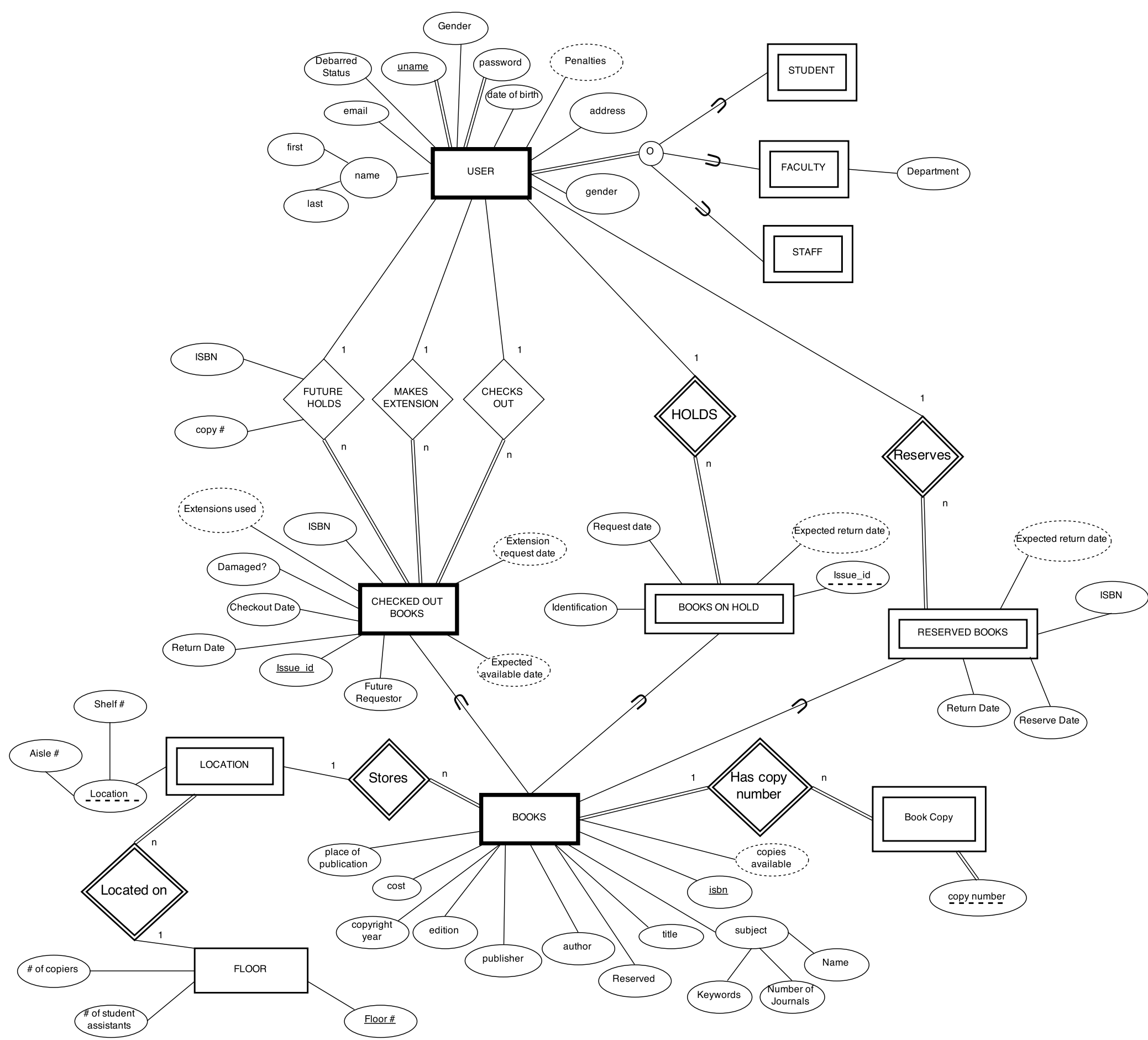


**CS 4400 Project**  
**Library Management System**  
**Phase 1**  
**02/05/2015**

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CS4400 - Library Management System  
PHASE I - EER Diagram  
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## **Logical Constraints**

- When a book is checked out, the number of copies available will decrease by 1. If copies available is equal to zero, the request will be rejected.
- A single hold request is only good for three days. If user tries to check out the book after the three days, it is not allowed.
- If book is put on hold, reserve status is changed to “reserved”.
- If book is damaged, delete the book from the database.
- Hold request is dropped when user checks out book.
- Future hold is dropped when the user checks out the book.
- If book is damaged, the user is charged 50% of the cost of the book.
- User is charged \$0.50 per day that the book is not returned after the expected return date (up to 50% price of book).
- If book is lost, user is charged full price of book.
- If user accumulates over \$100 penalties, the user cannot check out any books for the remainder of the semester.
- If a user requests a checked out book, the available date is the closest “expected return date” with the same ISBN.
- When a book is put on hold, the expected return date for the book is 17 days from the hold request date.
- When a book is checked out, the expected return date is 14 days after the checkout date (and reserve status is updated)
- Extension is not allowed if the book is already on hold by another user.
- Students can make extensions in the middle of their checkout period (when the 14 day period has not yet expired) up to two times in such a way that the total days they can have a book checked out is up to

28 days. This means that the checkout periods would not be sequentially one after another but would overlap. Same with faculty and 56 days up to five extensions.

- Users cannot request a hold for any book that is marked reserved in the database.
- When a book is reserved the copies available field decreases by one. If copies available is zero the expected available date is changed to the soonest expected return date of the book on reserve. (a book can only be reserved for the day, so the expected available date would be the next day).

