Department of Computer Engineering

CSE5041 Database Design & Development
Project Report

BOOK CLUB PLATFORM

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1 INTRODUCTION

1.1 PROJECT DESCRIPTION

The Book Club Platform database is designed to manage information about the users, books, reading lists, meetings, discussion threads, and comments within a book club environment. The following data have been identified in the requirements collection and analysis phase and are to be represented in the database:

- Users are the core participants of the platform. Each user has a unique ID, first name, last name, phone number, email, password, and join date.
- A user can create and manage reading lists, participate in meetings, and discuss books through threads.
- A user may host meetings and post comments on discussion threads about books.
- The platform keeps track of books with attributes such as unique BookID, ISBN, title, author, genre, and published year.
- Books are associated with reading lists, which are curated by users to organize their reading journey.
- Users can create reading lists, which are identified by a unique ListID, name, and creation date.
- A reading list can contain multiple books, and a book may be part of multiple reading lists.
- Users can organize meetings to discuss books or related topics.
- Each meeting has a unique MeetingID, title, description, scheduled date, and location.
- A user can host a meeting, and multiple users can participate in discussions within that meeting.
- Users can create discussion threads to initiate book-related discussions. Each thread is identified by a unique ThreadID, title, and creation date.
- Users can post comments on discussion threads. Each comment contains a unique CommentID, content, and the date it was created.
- Comments are linked to threads, allowing users to engage in organized discussions.
- Users can add books to reading lists.
- Users are involved in discussion threads to share their opinions and collaborate with other members.
- Each user can post multiple comments on threads.
- Users host meetings, which are attended by book club members.

- Books can be discussed in meetings, creating a collaborative and interactive environment.

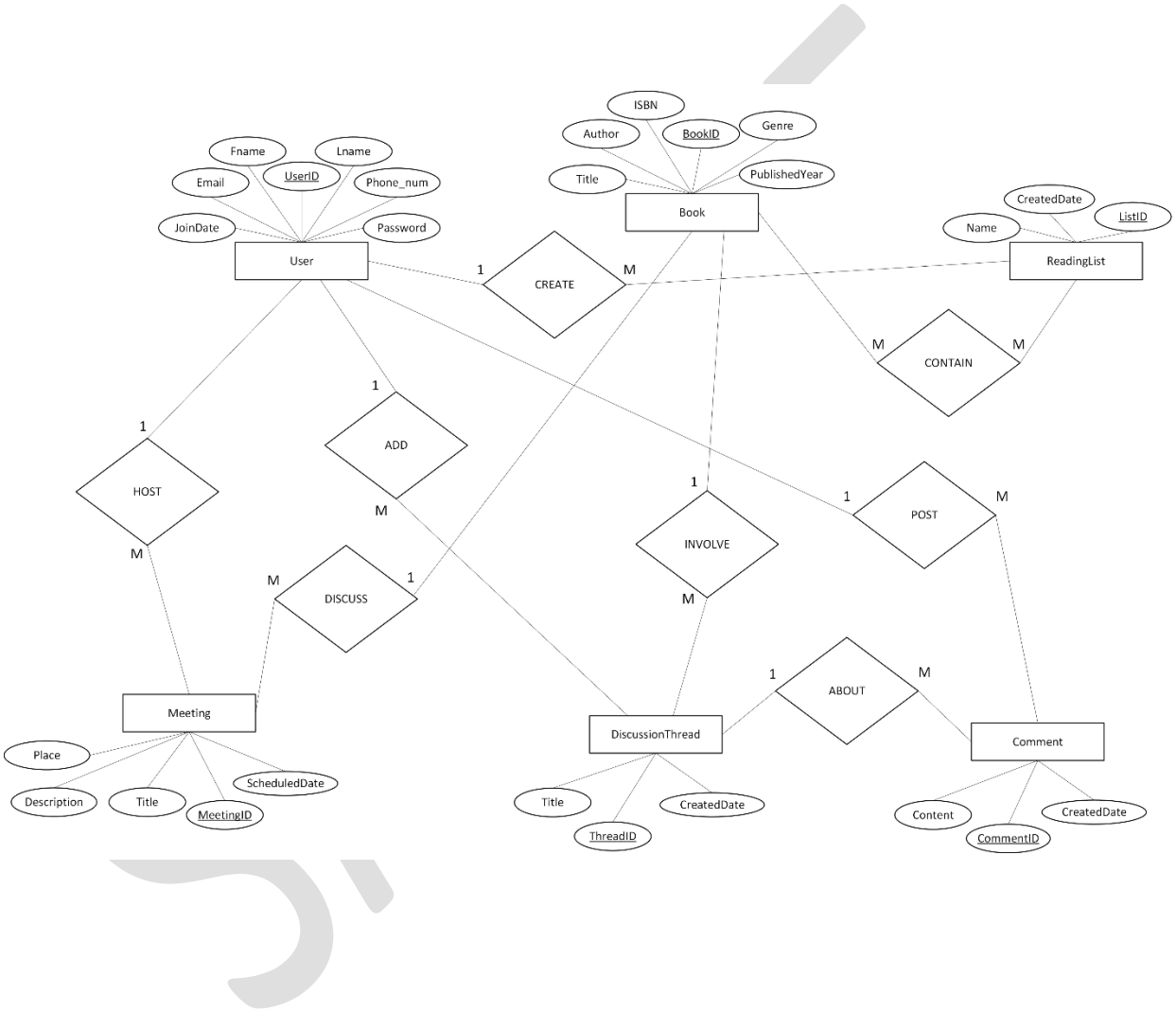
Objective

The Book Club Platform database aims to:

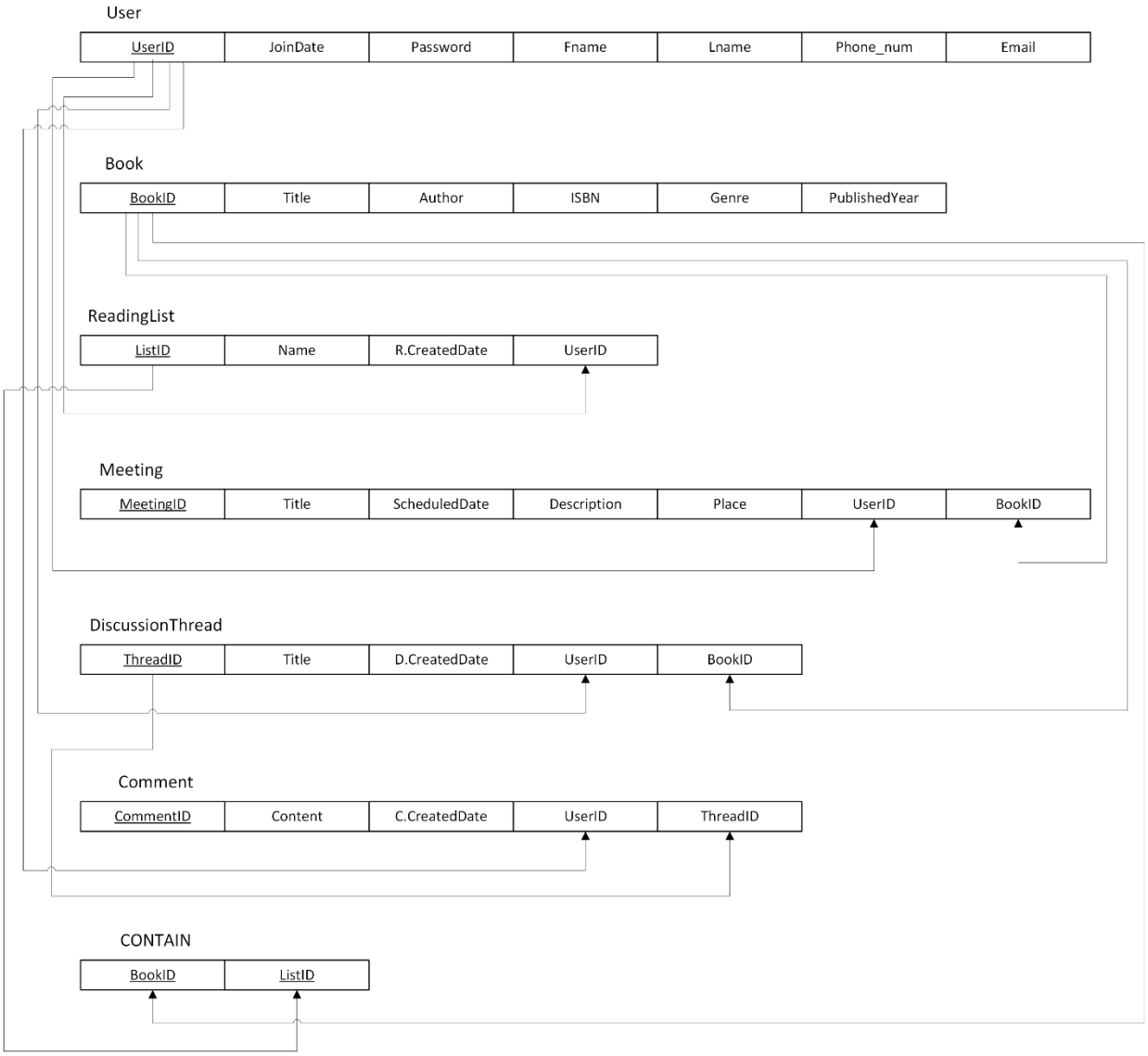
- Enable efficient management of user, book, meeting, and discussion data.
- Facilitate interaction and collaboration among users.
- Provide a structured system for book enthusiasts to organize their reading habits, discussions, and club events.

2 ENTITY RELATIONAL MODEL

2.1 ENHANCED ER DIAGRAM



2.2 RELATIONAL SCHEMA & MAPPING



3 NORMALIZATION

3.1 FUNCTIONAL DEPENDENCIES

F = { FD1: UserID → Fname, Lname, Email, Phone_num, Joindate, Password,MeetingID,ThreadID,CommentID,ListID

FD2: BookID →Title,Author,ISBN,Genre,PublishedYear

FD3: ListID →Name,R.CreateDate,UserID

FD4: MeetingID→Title,SchedeuledDate,Description,Place,UserID,BookID

FD5: ThreadID → Title,D.CreatedDate,UserID,BookID

FD6: CommentTID→ Content, C.CreatedDate,USerID,ThreadID

FD7: BookID,ListID → BookID,ListID }

3.2 UNNORMALISED FORM

User Table:
UserID
Fname
Lname
Email
Phone_num
Password
JoinDate

Book Table:
BookID
ISBN
Title
Author
Genre
PublishedYear

ReadingList Table:

ListID
Name
CreatedDate

Meeting Table:
MeetingID
Title
Description
Place
ScheduledDate

DiscussionThread Table:
ThreadID
Title
CreatedDate

Comment Table:
CommentID
Content
CreatedDate

3.3 FIRST NORMAL FORM

User Table:
UserID (PK)
Fname
Lname
Email
Phone_num
Password
JoinDate

Book Table:
BookID (PK)
ISBN
Title
Author

Genre
PublishedYear

ReadingList Table:
ListID (PK)
Name
CreatedDate

Meeting Table:
MeetingID (PK)
Title
Description
Place
ScheduledDate

DiscussionThread Table:
ThreadID (PK)
Title
CreatedDate

Comment Table:
CommentID (PK)
Content
CreatedDate

3.4 SECOND NORMAL FORM

User Table:
UserID (PK)
Fname
Lname
Email
Phone_num
Password
JoinDate

Book Table:
BookID (PK)
ISBN
Title
Author
Genre
PublishedYear

ReadingList Table:
ListID (PK)
Name
CreatedDate

Meeting Table:
MeetingID (PK)
Title
Description
Place
ScheduledDate

DiscussionThread Table:
ThreadID (PK)
Title
CreatedDate

Comment Table:
CommentID (PK)
Content
CreatedDate

3.5 THIRD NORMAL FORM

User Table:

UserID
Fname
Lname
Email
Phone_num
Password
JoinDate

Book Table:
BookID
ISBN
Title
Author
Genre
PublishedYear

ReadingList Table:
ListID
Name
CreatedDate

Meeting Table:
MeetingID
Title
Description
Place
ScheduledDate

DiscussionThread Table:
ThreadID
Title
CreatedDate

Comment Table:

CommentID
Content
CreatedDate