

Data Model Document

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Entity Relationship Diagram

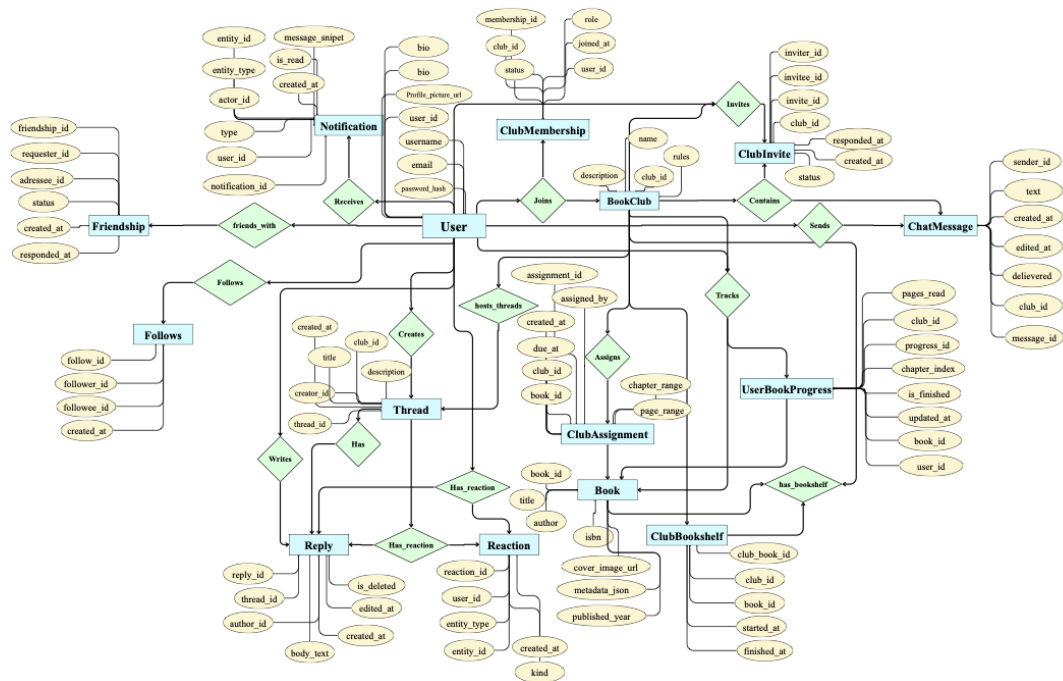


Fig 1. The entity relationship diagram for Plotline

Relational Model Diagram

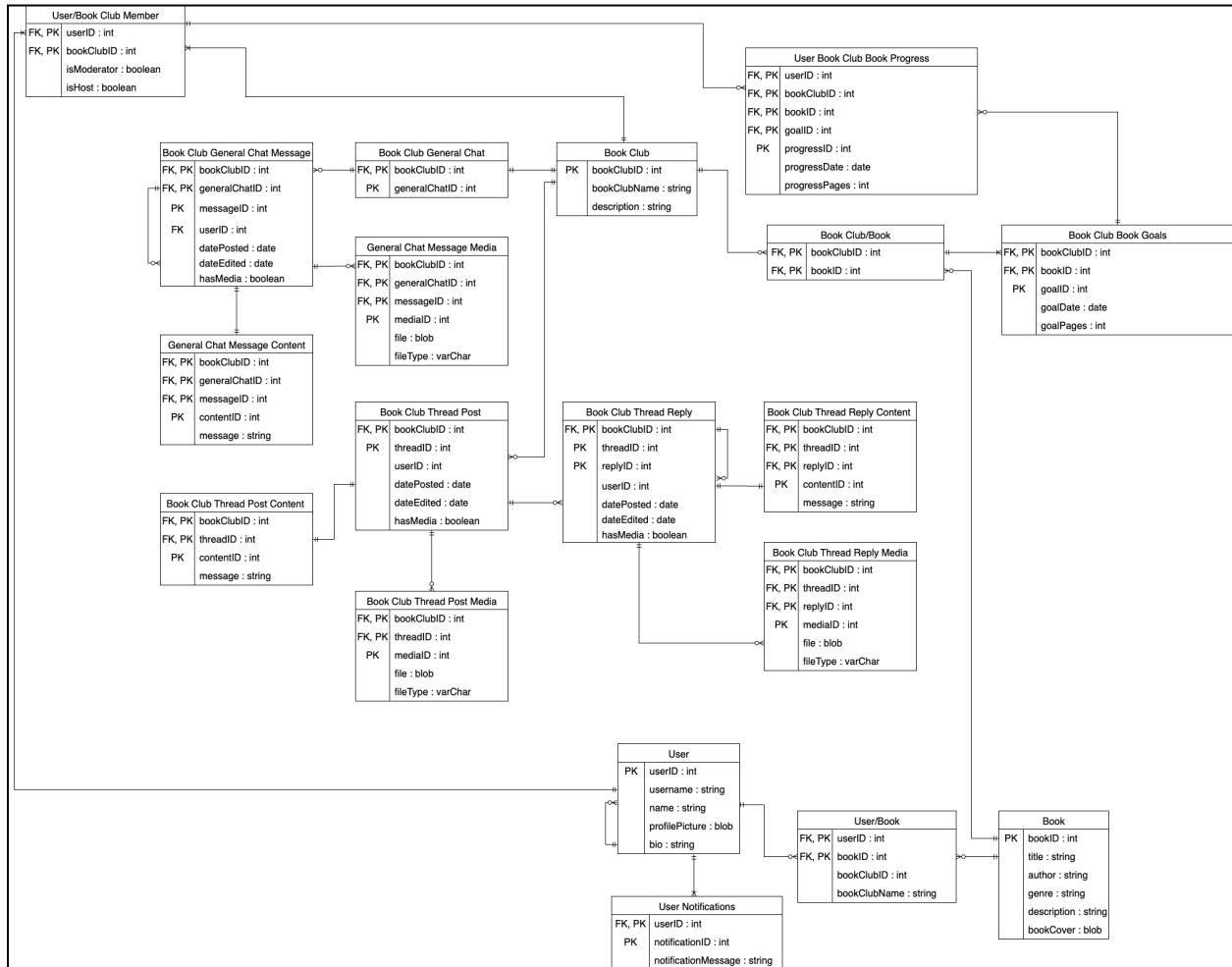


Fig 2. The relational model diagram for Plotline

User Table

The user table in Figure 2 stores information about each user. The first attribute is the **userID** which is a unique integer used to identify users and can be found in other tables to link a specific user to their thread reply, message in general chat, etc. **Username** is a string attribute and how the user will identify themselves on the platform and how users will recognize each other. Users are to decide their own username and during registration, it will be checked to make sure it is unique and that no other user has that username. **Name** is a string of a user's full name and they can decide whether they wish to display it on their profile. The attribute **profilePicture** is the image that a user uploads and will be displayed on their profile and next to their username when they send a message in a book club general chat, reply to a thread, etc. The last attribute **bio** will be the user's self-written biography to be displayed on their profile.

Book Table

The book table in Figure 2 stores information about the books which the users will read in their book clubs. The primary key **bookID** is to identify the book and is found in other tables to link the book to a user and book club's bookshelf. The fields **title**, **author**, **genre**, **description**, and **bookCover** are all attributes used to provide information to users about the book that they may choose for their book club to read next.

User/Book Table

The user/book table represents the user's bookshelf of books they have read for their book club(s). The attributes **userID** and **bookID** are used to link the user to the book in order to create the user's own bookshelf. The attributes **bookClubID** and **bookClubName** are to identify for which book club that the user had read the book for.

User Notifications Table

The user notifications table is used for the notifications that the application will send to the user such as when another user replies to their message that they sent in a book club general chat. The fields **userID** and **notificationID** are to identify the notification and to which user it was sent to. The attribute **notificationMessage** will hold the message that will be sent to the user as a notification.

Book Club Table

The book club table represents each book club that is active on the platform. The field **bookClubID** is a unique integer to identify each book club and is found in other tables to link a book club to their general chat, threads, users, bookshelves, and assigned reading. The attribute **bookClubName** is the name of the book club that is decided by the host who created the book club and will help identify the book club on the platform for when users wish to search for book clubs to join. The field **description** will be decided by the book club host and moderators and will be displayed for when users are searching for book clubs.

Book Club/Book Table

The book club/book table represents a book club's bookshelf which contains the books that the members have previously read. The fields **bookClubID** and **bookID** are used to link the books that the book club members have read to the book club.

User/Book Club Member Table

The user/book club member table is how the users will be associated with a book club and how members of a book club will be identified. The attributes **userID** and **bookClubID** are used to link the users to a book club for them to members. The boolean attribute **isModerator** will be true when a book club member is assigned as a moderator by the club host and gives them privileges such as the ability to create threads. The boolean field **isHost** is used to identify the host of the book club and is set to true when a user creates a book club.

Book Club Goals Table

The book club goals table is how each book club will keep track of their reading. Once a book club host or moderator assigns a book for reading, they can set goals for how many pages the members of the book club should read by a certain date to then discuss. The attributes **bookClubID**, **bookID**, and **goalID** is how the assigned book will be linked to the book club and how the goals for each club will be identified. The fields **goalDate** and **goalPages** will be determined by the host/moderators for the entire book club to accomplish their assigned reading by the specified date.

User Book Club Book Progress Table

The user book club book progress table is how each book club member will be able to track their progress of the assigned reading for their club that is due by a certain date. The fields **userID**, **bookClubID**, **bookID**, **goalID**, and **progressID** are used to link the user to the current goal of the assigned reading for their book club and to identify the user's progress. Users before the due date of the assigned reading can record how far they have gotten into the book/how close they are to the current assigned reading goal (**progressPages**) and the date which they made their progress (**progressDate**).

Book Club General Chat Table

The book club general chat table is used to identify each book club's general chat in which they can discuss which book they wish to read next, their thoughts on the book so far, etc. The fields **bookClubID** and **generalChatID** will be used to specify each book club's general chat.

Book Club General Chat Message Table

The book club general chat message table represents the messages the book clubs members can send in their book club's chat. This table has a unary relationship as members are able to reply to

messages posted by other users. The attributes **bookClubID**, **generalChatID**, and **messageID** are used to specify the message sent in the book club's general chat. The field **userID** is used to identify which user sent the message. The fields **datePosted** and **dateEdited** are to be displayed next to the message to show the time it was sent and the time it was edited if the user decided to edit their message. The boolean attribute **hasMedia** is true for when the user attaches an image to their message.

General Chat Message Content Table

The general chat message content table is used to store the actual text of the message sent by a book club member in their book club's general chat. The fields **bookClubID**, **generalChatID**, **messageID**, and **contentID**, are to specify for which message of a book club's general chat the content is to be displayed for. The field **message** is the string/text of the user's message.

General Chat Message Media Table

The general chat message media table is used to store the image of the message sent by a book club member in their book club's general chat. The fields **bookClubID**, **generalChatID**, **messageID**, and **mediaID**, are to specify for which message of a book club's general chat the image is to be displayed for. The attribute **file** is how the actual image will be stored and **fileType** is the type of file the image is.

Book Club Thread Post Table

The book club thread post table represents the posts that only the host or moderators can create to start a conversation (discussion about reading, book review, etc.) in which the book club members can reply to to share their thoughts. The fields **bookClubID** and **threadID** are used to identify the threads for each book club. The **userID** will specify the user that made the post. The attributes **datePosted** and **dateEdited** are to be displayed on the post to show the date and time the host/moderator made the post and when/if it was edited. A book club thread post is similar to a message in the general chat and has a boolean **hasMedia** field to determine whether the post has an attached image.

Book Club Thread Post Content and Book Club Thread Post Media Tables

The book club thread post content and book club thread post media tables are almost exact to the content and media tables of the general chat messages in which they have key attributes to identify for which book club the thread post was made and also have fields to store the message/media.

Book Club Thread Reply Table

The book club thread reply table stores the replies that the book club members create in which they answer the prompt of the original post that they are replying to. The fields **bookClubID**,

threadID, and **replyID** are used to specify and store the reply that was made to the thread post. The **userID** references the user who made the reply and the fields **datePosted**, **dateEdited**, and **hasMedia** have the same purpose as they do in the book club thread post table.

Book Club Thread Reply Content and Book Club Thread Reply Media

The book club thread reply content and book club thread reply media tables are almost exact to the content and media tables of the general chat messages/book club thread replies in which they have key attributes to identify for which book club the thread reply was made and also have fields to store the message/media.