Bilkent University

Department of Computer Engineering

CS353 Term Project Proposal

BookCase

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1. Introduction

Social Cataloging Platforms target people from every age group and any individual in society since reading books is an universal habit. There were only classical methods of individual cataloging before development of these platforms. People were stocking their sets of books on bookshelves and the only method of cataloging was ordering them alphabetically[1]. Very rare of them kept an agenda of the books they have. There were some developments of Cataloging Platforms where a single administrator account was able to reach all the books on the system without any social interaction. Today, we can use Social Cataloging Platforms to form communities of people who share their experiences with reading books.

These platforms enable users to reach any book registered on the server. Just like any social platform, users can display other users' information such as what they are reading currently. These platforms provide an opportunity to keep track of what users have been reading and what users want to read next. Database system of the platform keeps the required information for all past readings of the users in order to achieve this.

Social Cataloging is very essential for every individual that likes to read books. It brings some innovations that are almost impossible to reach with classical methods. In this proposal, we will discuss the project definition, functional and non-functional requirements, limitations and the conceptual E/R diagram to the system that we will design.

2. Project Definition

Our website has many features which are interaction between readers and authors, reading challenges and cataloging reading activities. There is no registration requirement for displaying books and other content. However, cataloging and reading challenges features are only for registered users. These reading challenges and book additions and regulations are prepared by librarians which can be considered as administrators of the system.

Users are classified as authors and readers. Users can interact with each other such as adding each other as friends and following authors. Users will be able to recommend books to their friends. Books have different attributions like genres and authors which makes them easier to locate at the search bar. Some authors on the registered books may not be registered on the system. Librarians can edit the books and non-registered authors. They will be arranging challenges between users to keep them motivated and encourage them to read more. Apart from social interaction, users are able to give ratings on books and make comments on them. Also, they can put the books on three different bookshelves which consist of the books that have read, currently reading and planning to read. In this way, the users will be able to experience the convenience of keeping track of their reading activity on an online platform. Moreover, there can be customized lists made by users. We are managing these lists to let the users share these with their friends if they wish.

Since there is so much interaction between all the accounts and the amount of data that has to be transferred between those accounts are enormous, we are using a database system in order to keep the data organized and not to allow any corruption.

3. Functional Requirements

Our project will enable all the visitors of the website to search for books by their title, author, year and genre. However, to use further features of the website, one must register to the system.

In our database system, account owners can be either users or librarians. To own an account, a unique email address is required. Accounts must be verified through the email authentication process.

3.1. Users

- Users can be readers, authors, or both at the same time.
- Each user must have initially 3 bookshelves with the names of "read", "currently-reading" and "to-read" with zero books. The system allows users to add books to these bookshelves. These bookshelves are visible to every user.
- Users have initially zero number of ratings and zero rating average. As they rate books, these numbers are updated.
- They can mark their progress on a particular book by specifying the page number.
- Users can create lists with the names they want and add books to these lists. There are 3 options about lists' visibility. Users can either choose to share their lists only with their friends or with all users or they can make the lists private.
- The system allows users to send and accept friend requests. Two users can be friends only if both of them add each other as a friend.
- Users can recommend books only to their friends.
- Users can rate and comment on books. When a user rates a book, that book is added to the user's "read" bookshelf automatically.

- They can send a request to librarians to correct wrong information about books.

- Users can follow authors.

- They can join reading challenges by setting their goal.

- Users can see the activities of their friends' and authors that they follow, on the home page.

- Users can add a profile picture and change it as they want.

3.1.1. Author Accounts

In addition to user requirements,

- Authors can publish their books on the system.

- They can reply to comments on their books.

- Authors have their published books list on their page.

- They can follow other authors.

- They can add and edit their biography.

3.2. Librarians

- They are administrators of the system.

- Librarians have access to the book database and are allowed to add and delete books and make changes on their attributes if necessary.

- They can add new authors to the system. They can also make changes on the attributes of authors who do not have an account.

- They can create one or more reading challenges with a unique name.

3.3. Books

- A particular book can have one or more editions with a unique edition id.

- A book can be a part of at most one book series.

- They can be rated and commented on by users.

- Each book has initially zero rating and this rating is updated by evaluating the average of all the ratings on that book.

- Books have one or more genres.

4. Non-functional Requirements

4.1 Usability

- Since people of all ages love reading books, the design of the website should not be toward one.

- The user interface should be user friendly. Every clickable object should have a clear text indicating what it does.

- The user interface should also be simple. Users should be able to search for and find the book they want within at most three clicks.

4.2 Performance

- The system should be fast. Loading a book page, user page, list page or challenge page should take no longer than 1 second.

- Logging in with account information should take less than 3 seconds.

4.3 Capacity

● The system should be big enough to be able to hold millions of book data and thousands of users profiles.

4.4 Reliability

● The system should be able to run its functionalities without crashing with more than 1000 online users.

4.5 Platform compatibility

● Since this project is a web based application, the supported web browsers should be able to run this website with no major issues. The supported web browsers will be:

  ○ Google Chrome

  ○ Mozilla Firefox

  ○ Microsoft Edge

  ○ Opera

  ○ Safari

● The website should also be compatible for the following OS:

  ○ Android

  ○ IOS

  ○ Linux

  ○ MacOS

  ○ Windows

5. Limitations

- E-mail addresses of accounts must be unique

- Password of an account must have at least 6 characters

- Librarians cannot create challenges with the same name.

- Users can only have 3 bookshelves.

- Users cannot follow other readers

- Users can only give one rating to a book.

- Users cannot join a challenge after its due date.

- A book can be in only one bookshelf of a user.

- Only the author of the book can reply to other comments.

- A book cannot be a part of in two different series

- Librarians cannot make changes on authors' profiles who have an account.
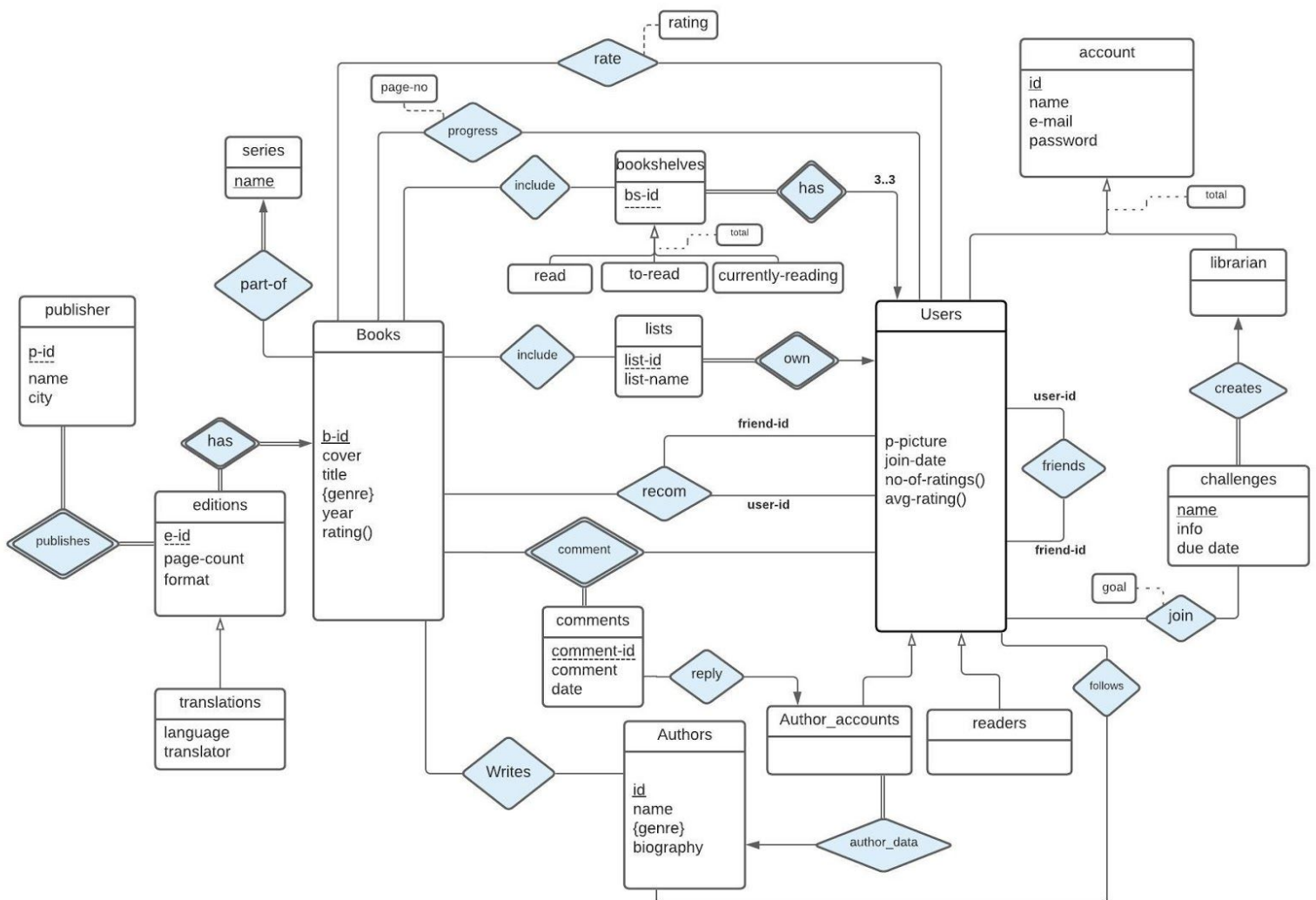
6. E/R Model

Figure 1: E/R model

7. Website and References

Project website:

https://cemalahmet.github.io/book-catalog-project-cs-353/

[1] O. Chandler, "About Goodreads," *Goodreads*, 2007. [Online]. Available:

https://www.goodreads.com/about/us. [Accessed: 24-Feb-2021].