Design Document

Technology Stack : Python Framework (Using Django), SQLite (for database), HTML, CSS, JavaScript

High Level Design :

Homepage :-

Homepage will contain User Signup and Login, Admin Login, a list of top rated books with their cover images and names, a list of literature groups with their cover pictures and names, and a search bar, from which books can be searched and related information can be viewed.

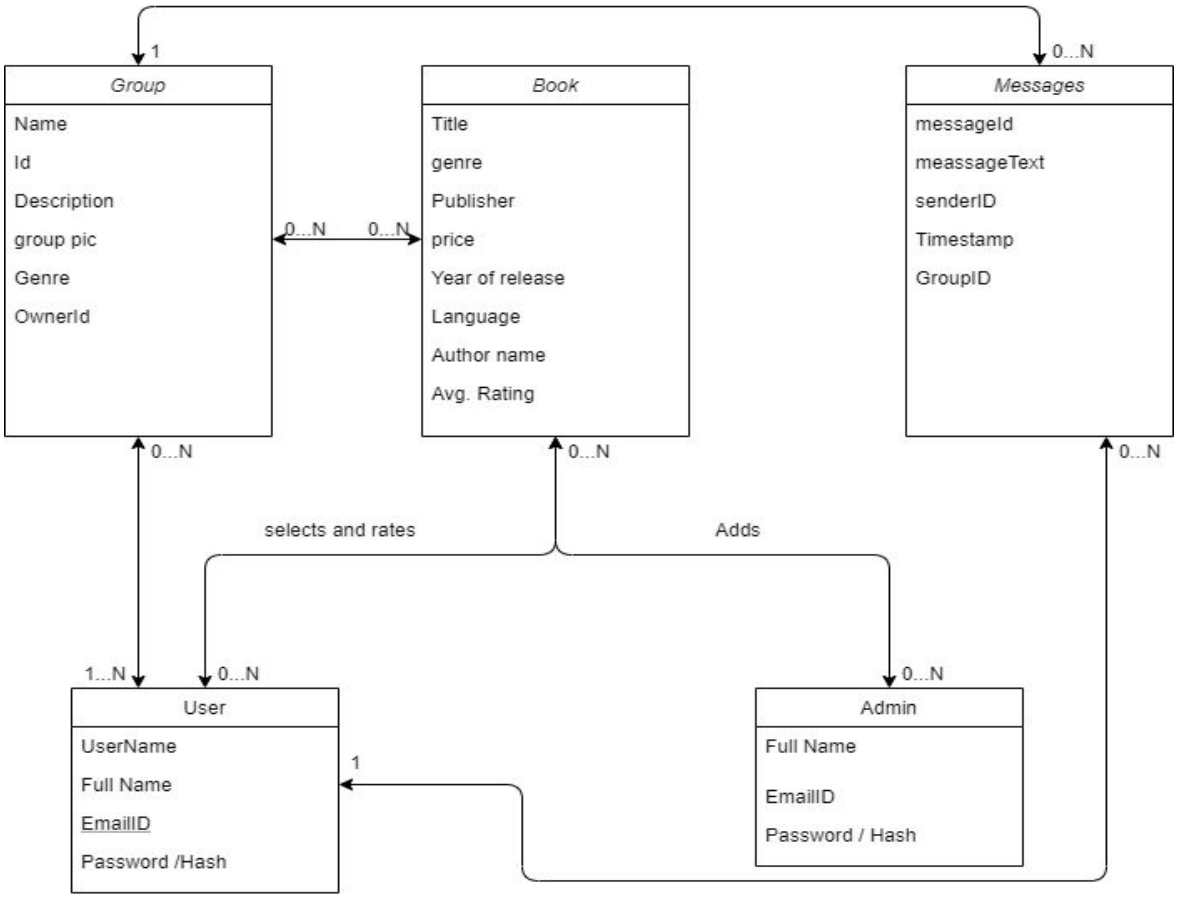

Fig : Entity Relationship Diagram

User Home :-

From the main homepage, user can login to go on his/her own homepage. User homepage will have the search bar, from which users can search by book name. If found, the user can view the respective book webpage, add the book to his/her bookshelf, and can give rating to the book.

User homepage will also contain a list of recommended books, according to the added books in his/her bookshelf.

User homepage will contain a list of literature groups with their cover picture and names, from which he/she can choose and join the respective group by going into the group page.

There will be a button “My Groups”, by clicking upon which a new page with the list of joined literature groups will be shown. From this page, users can enter into any of the groups.

User homepage will also contain a “Bookshelf” button to go in his/her list of added books. It will contain a “Profile” section where his/her email id can be viewed, email and password can be changed.

Admin Home :-

From the admin login section in the main homepage, admin can log in and enter in its own homepage. It will contain a search button, from where he/she can search for books. If found, a book webpage can be entered by clicking on it. Admin has the edit option now, and can change the information related to the book.

In the admin webpage, there will be a section of “Add Book”. By clicking upon it, admin will find a form, where he/she has to fill up all the necessary fields for a book, like name of the book, author name, number of pages, publisher, language, price, year of release, genre(s) of the book. Admin will also upload the cover photo of the book for creating its icon.

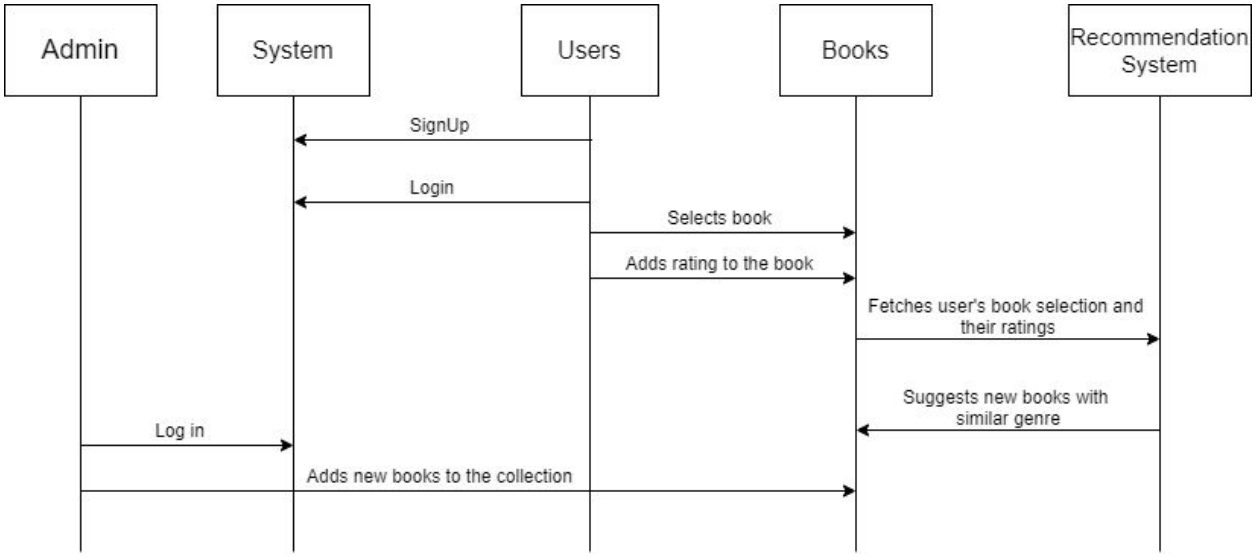

Fig : Class Interaction Diagram

Book Webpage :-

User/Admin can enter into a book webpage by clicking on the respective book icon. The book webpage will contain the average rating of the book and all other relevant information like author name, number of pages, publisher, language, price, year of release, genre(s) of the book etc. It will also have a button for adding into bookshelves, a scale for users to give rating.

Literature Group Webpage :-

Literature group webpage will contain a “Members” button. By clicking on it, you can see the other members and their bookshelves.

A feature in the group webpage will be “Posts”. Members of the groups can post and have a conversation with others about literature and books in the group homepage.

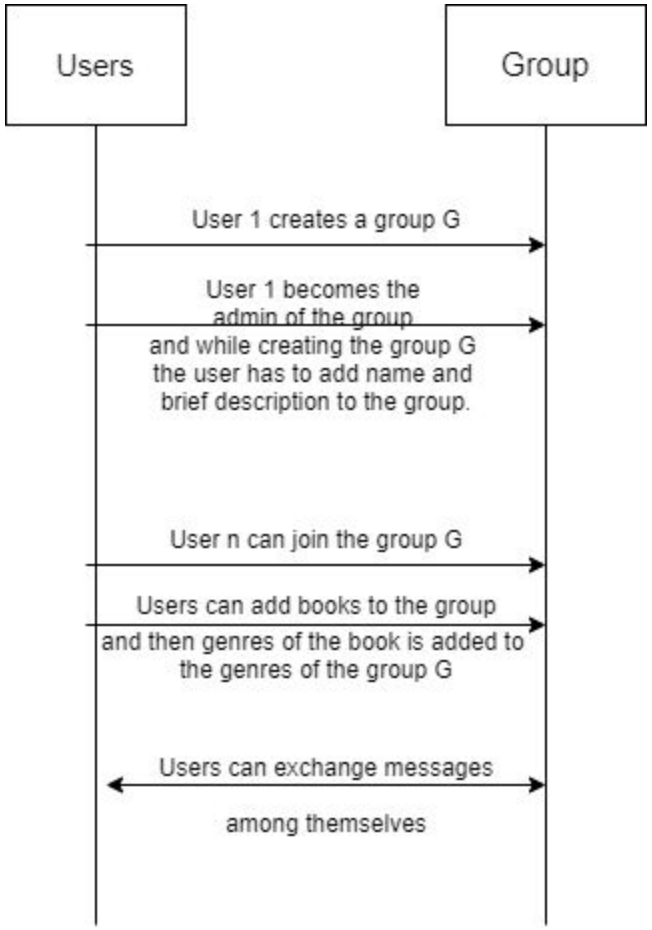

Fig : User - Group Interaction Diagram

Recommendation System :

The application will take in user data to recommend books to users, suitable to their interests. The recommendation model will take in relevant features (favourite genres, favourite author, age group etc.) to provide quality recommendations of books.

For the core recommendation system model, we are planning to use methods like collaborative filtering. Both User-based and Item-based collaborative filtering will be used in the model. We will use an existing database of book reviews to train our model. And we will be using popular clustering techniques to find similarities among books based on various features as mentioned above.