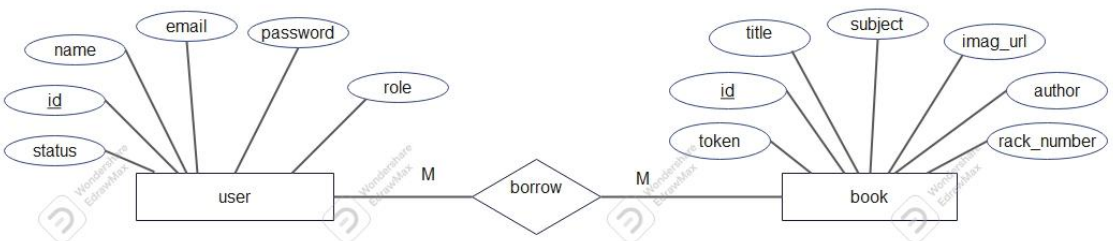
Introduction:

That is the library management system we made two users Librarian “ Admin” and the regular user the Librarian can make some functions like “Create - Update - Delete - List “
and the regular user can make different functions like borrow requests.
and Admin and regular user can make login and just regular user can make register.
we create APIs for every function these APIs connect with the Database schema.

Database Architecture :

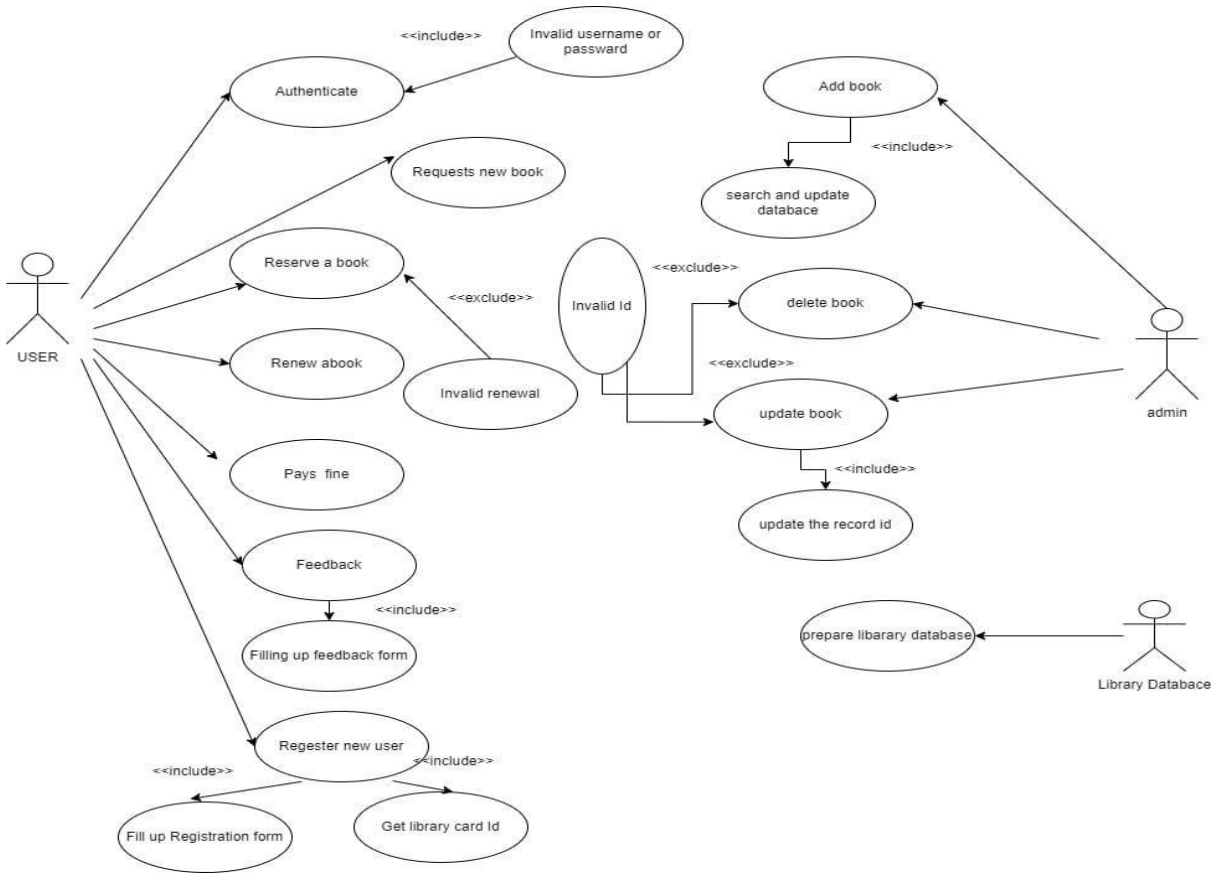


this Database Schema is formed by three tables :

First-> user: contain “ ID, name, email, password, role, status”.ID is a Primary Key.
second -> book: contain” ID, title, subject, image_url, author, rack_Number”. ID is a primary key.
third -> borrow: contains “ID, book.id, user.id, borrow request”
the relation between borrow and “user or book” is being many to many and ID is a primary key and book.id is a foreign key from table book and user.id is a foreign key from table user.

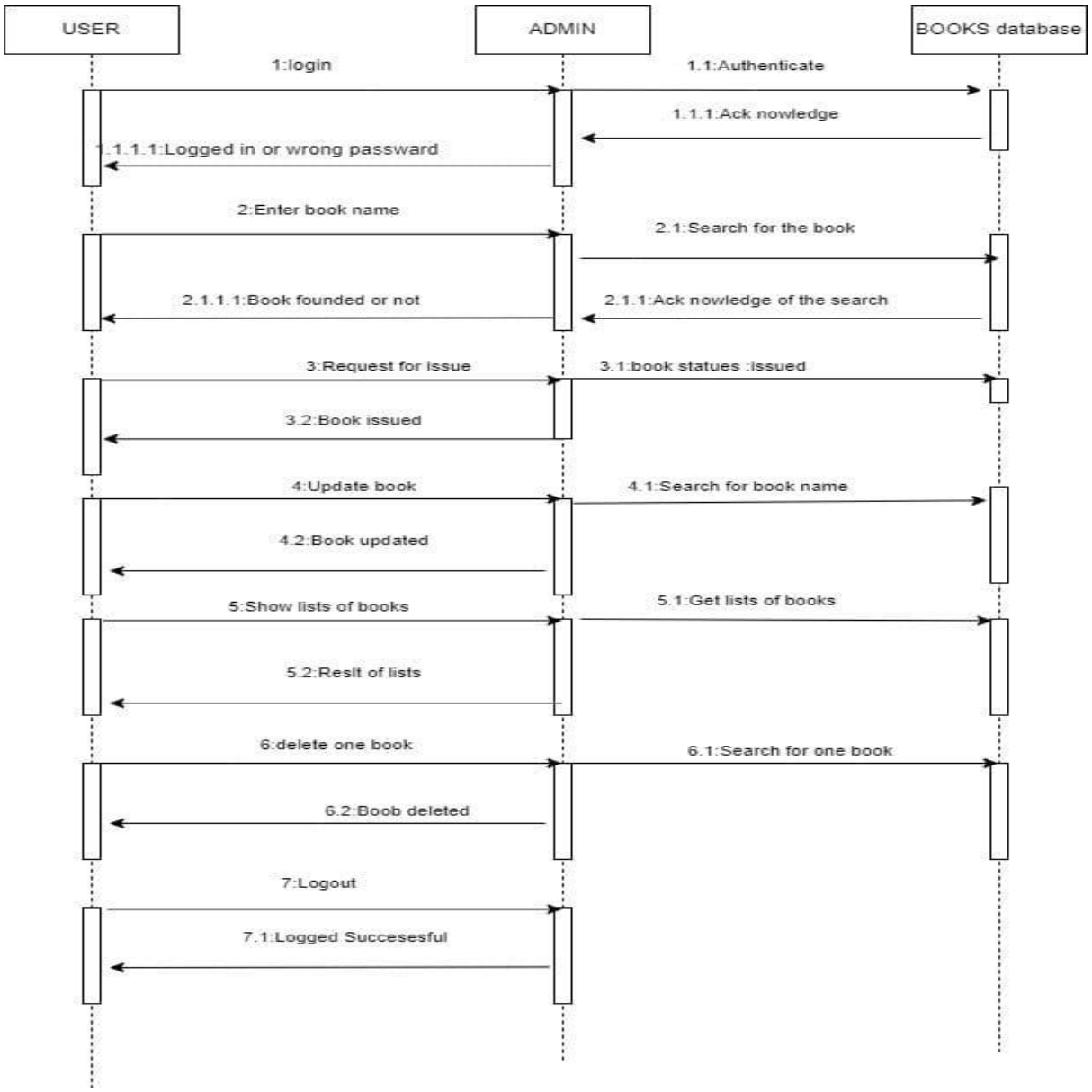
UML Diagrams:

1-Use Case:



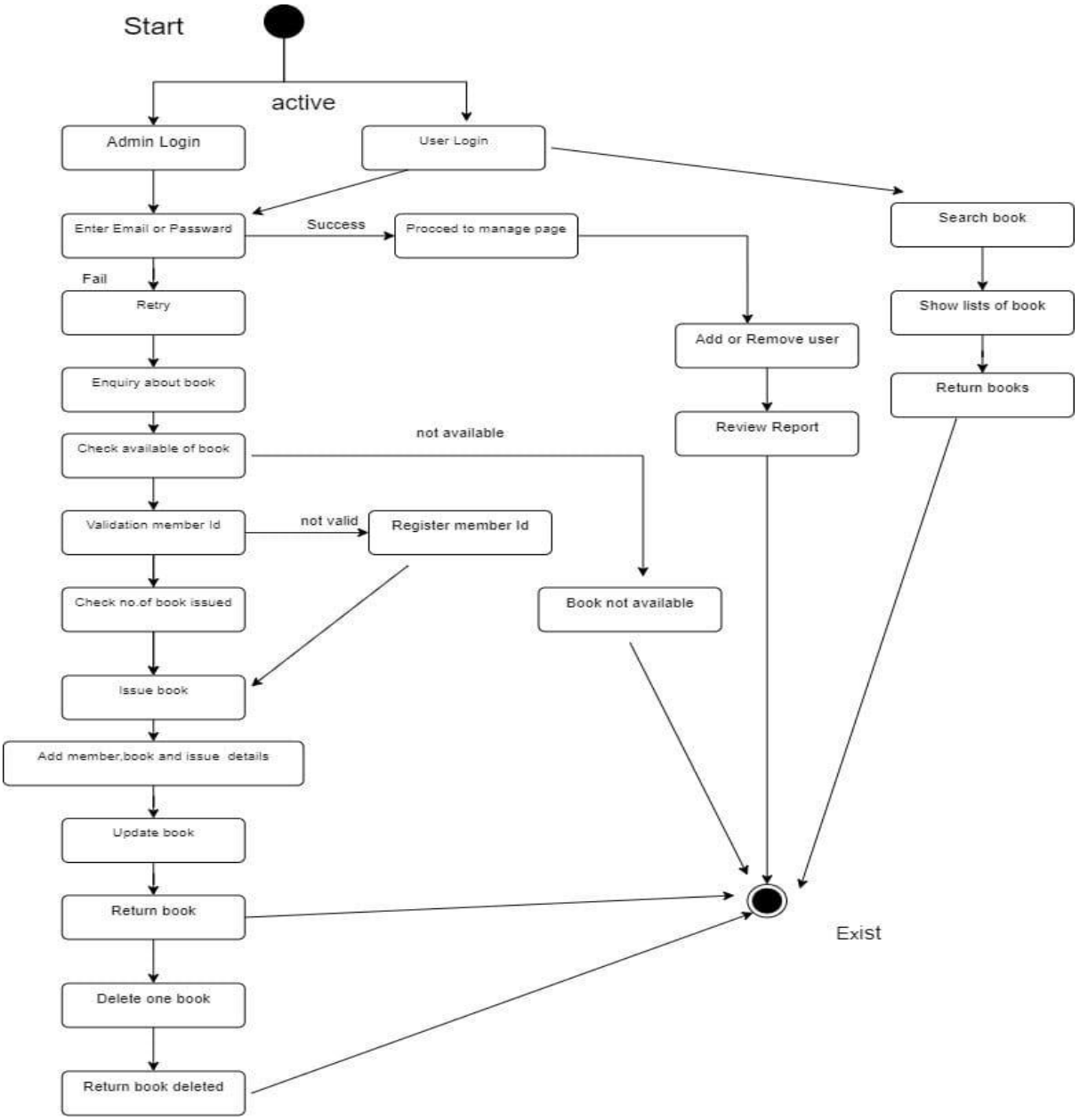
This diagram shows the authentication and every user that can use this diagram. this use diagram for every user all function can do it but we use in user -> “login, register, show, list, borrow_req” admin-> “Add, Update, delete, login”.

2-Sequence diagram:



that is a sequence diagram for functions and how to will be done at the project.

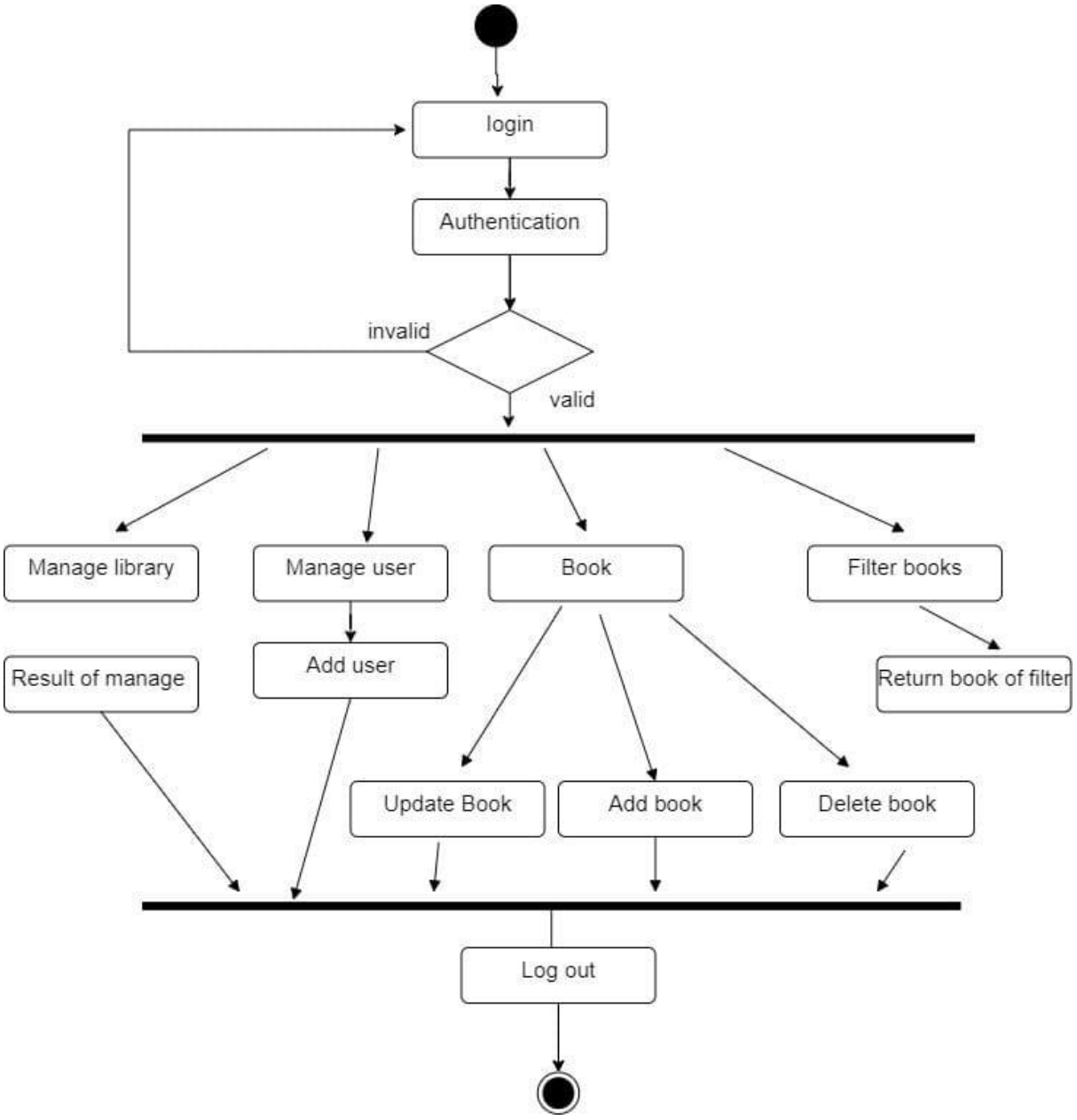
3- State Diagram:



this diagram discusses the status of the program and how this work from start to end for every function and user.

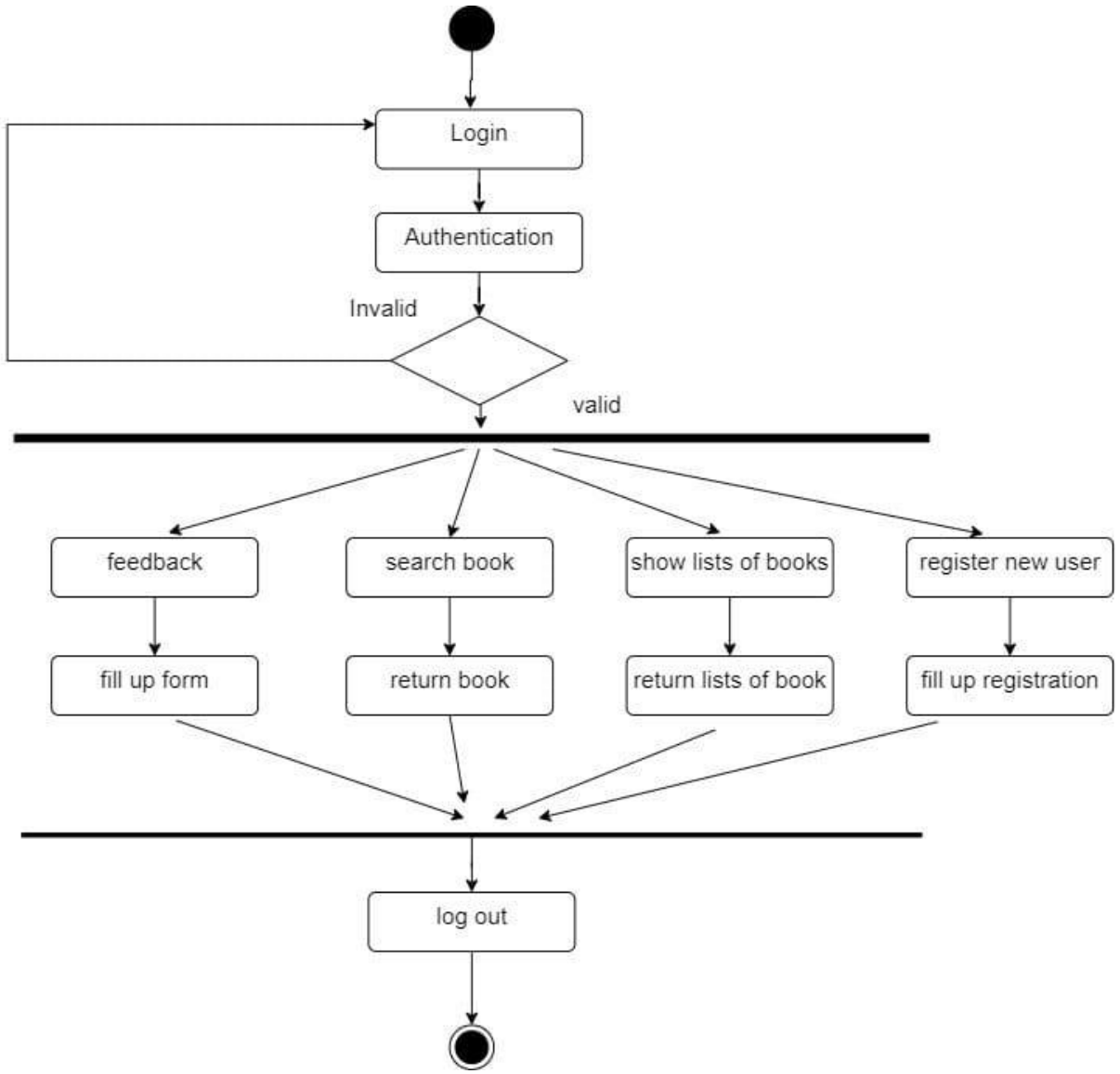
4-Activity Diagram:

For Admin:



this diagram shows what the function can do in the program by admin.

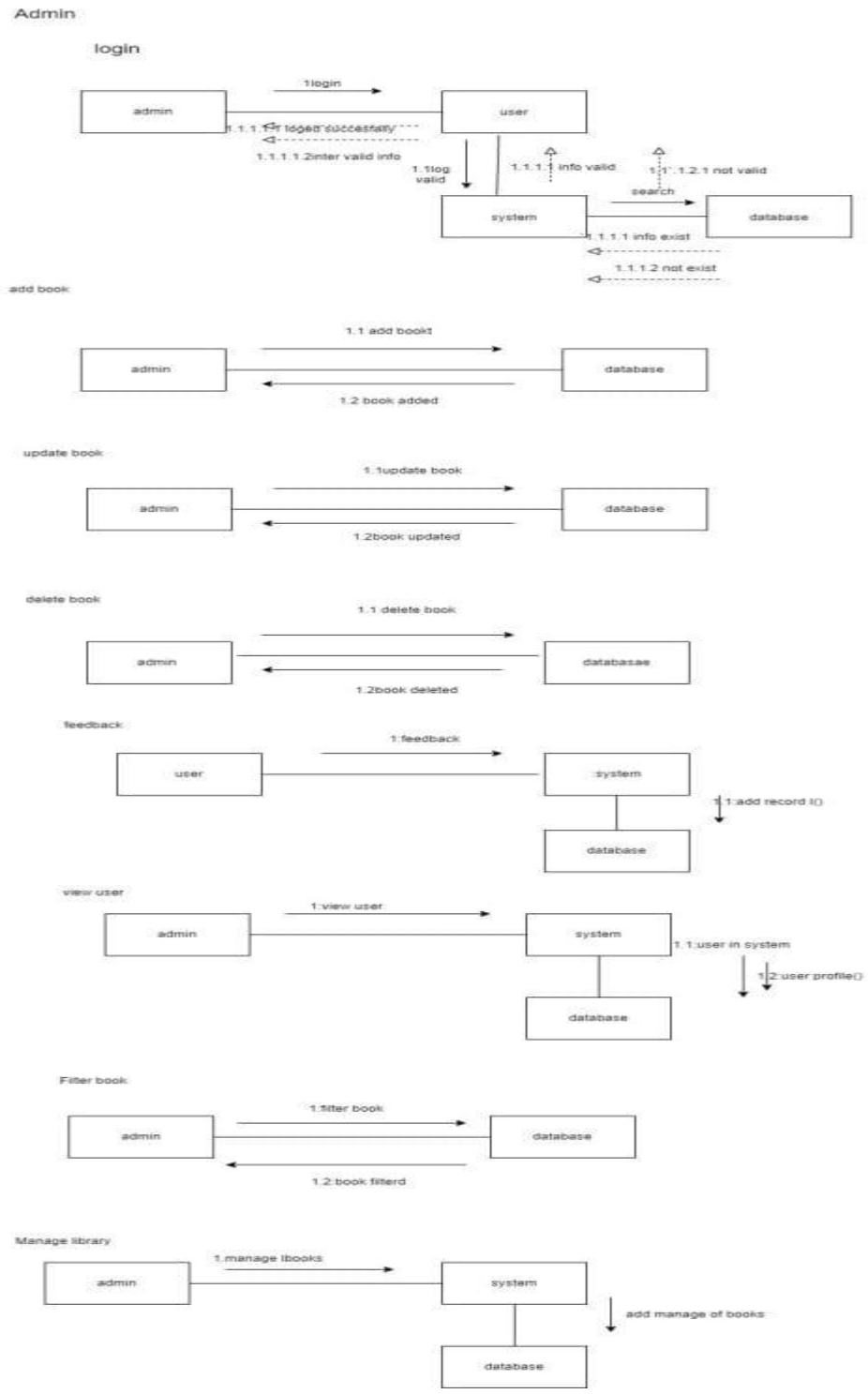
For user:



this diagram shows what the function can do in the program by the regular user.

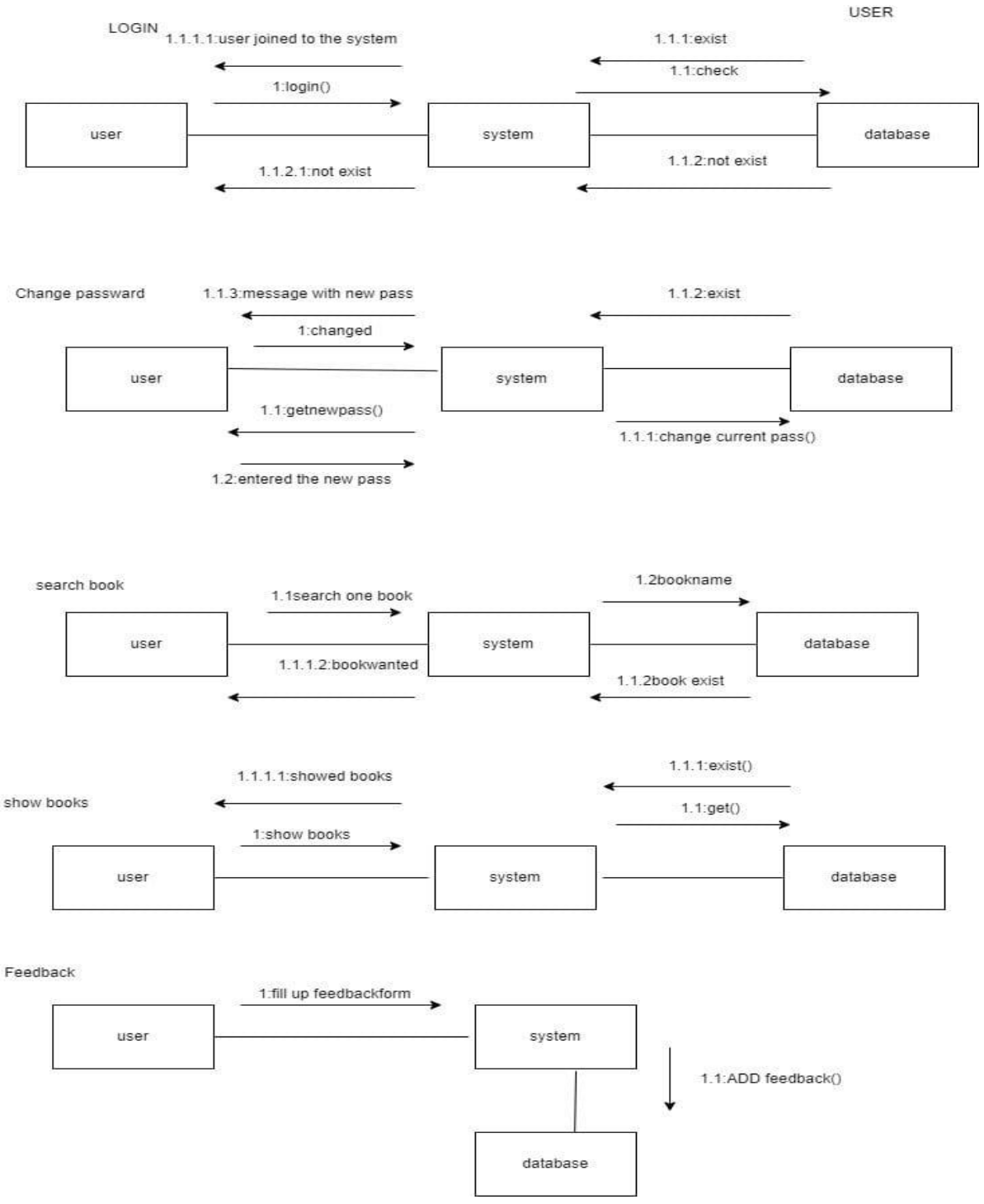
5-Communication Diagram:

For Admin:



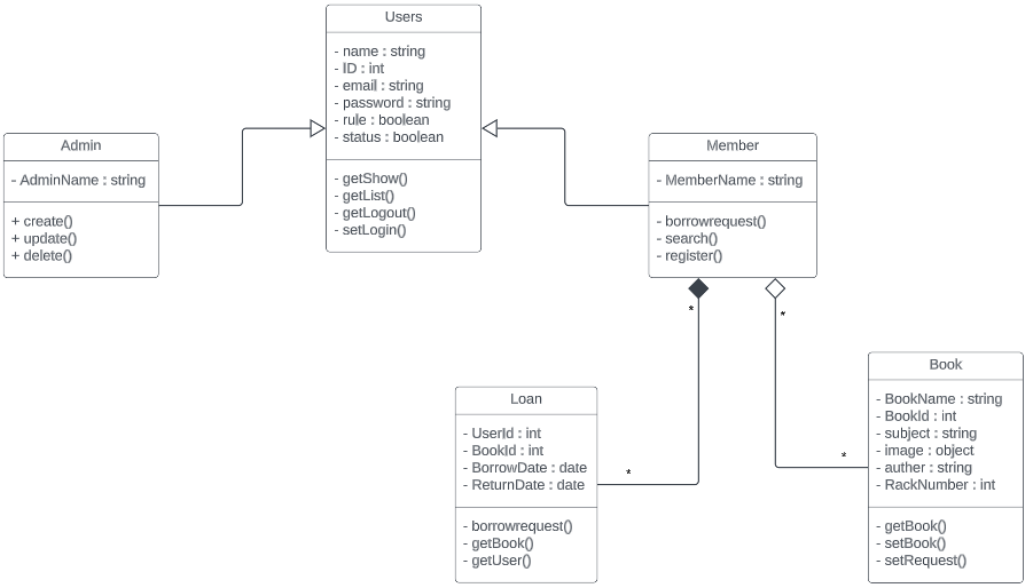
This diagram shows how every function done by the admin communicates with each other or communicates with the database.

For user:



This diagram shows how every function done by the user communicates with each other or communicates with the database.

6-Class Diagram:



7-Class Diagram with OCL Constraints: