Library Management

Database Name: library_management

Project Idea

The **Library Management System** is a web-based application designed to help librarians efficiently manage and organize library resources. This platform enables librarians to create, update, and manage information related to books, members, and borrowing activities, all within a structured relational database. The goal is to provide a streamlined interface to manage library inventory, track borrow/return transactions, and maintain member records using CRUD functionality, ensuring a smooth experience for library operations and resource management.

Relational Database

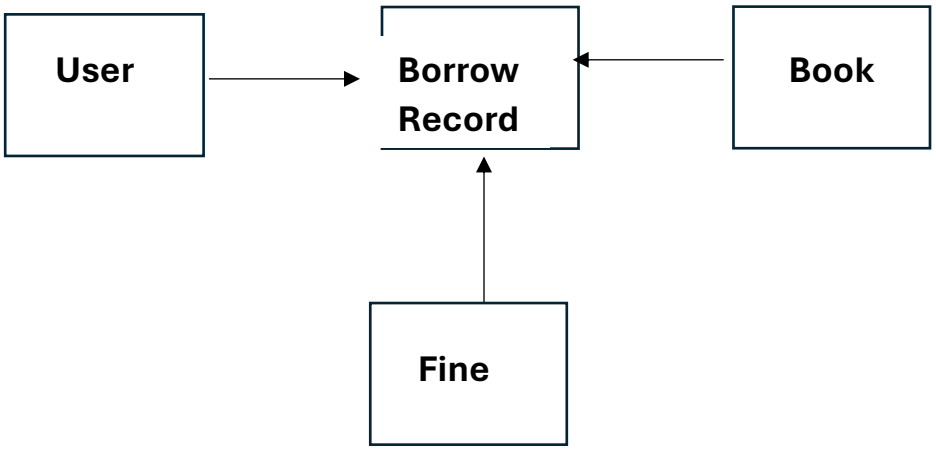


Fig 1: An entity relationship diagram for User, Book, Borrow record, and Fine

	User Entity	**Book Entity**	**Borrow Record Entity**	**Fine Entity**
User Entity	X	A user can borrow many books.	A user can have multiple borrow records.	A user can be linked to multiple fines.
Book Entity	A book can be borrowed by many users.	X	A book can appear in multiple borrow records.	A book's overdue can result in a fine.
Borrow Record Entity	A borrow record tracks a user's activity.	A book can be reserved or on loan.	X	A borrow record can result in a fine.
Fine Entity	A fine is linked to one user.	A fine may result from overdue books.	A fine is generated based on a borrow record.	X

Fig 2: A table which verbalizes relationships between user, books, borrow record and fine.

ERD Diagram:

Books:

Column	Type	Constraints
book_id	INT	PRIMARY KEY,
title	VARCHAR (100)	NOT NULL
copies_available	INT	N

Member/User

Column	Data Type	Constraints
member_id	INT	PRIMARY KEY
name	VARCHAR (100)	NOT NULL
email	VARCHAR (100)	UNIQUE

borrow_record

Column	Type	Constraints
book_id	INT	FOREIGN KEY,
borrow_id	INT	PRIMARY KEY
member_id	INT	FOREIGN KEY

Wireframes

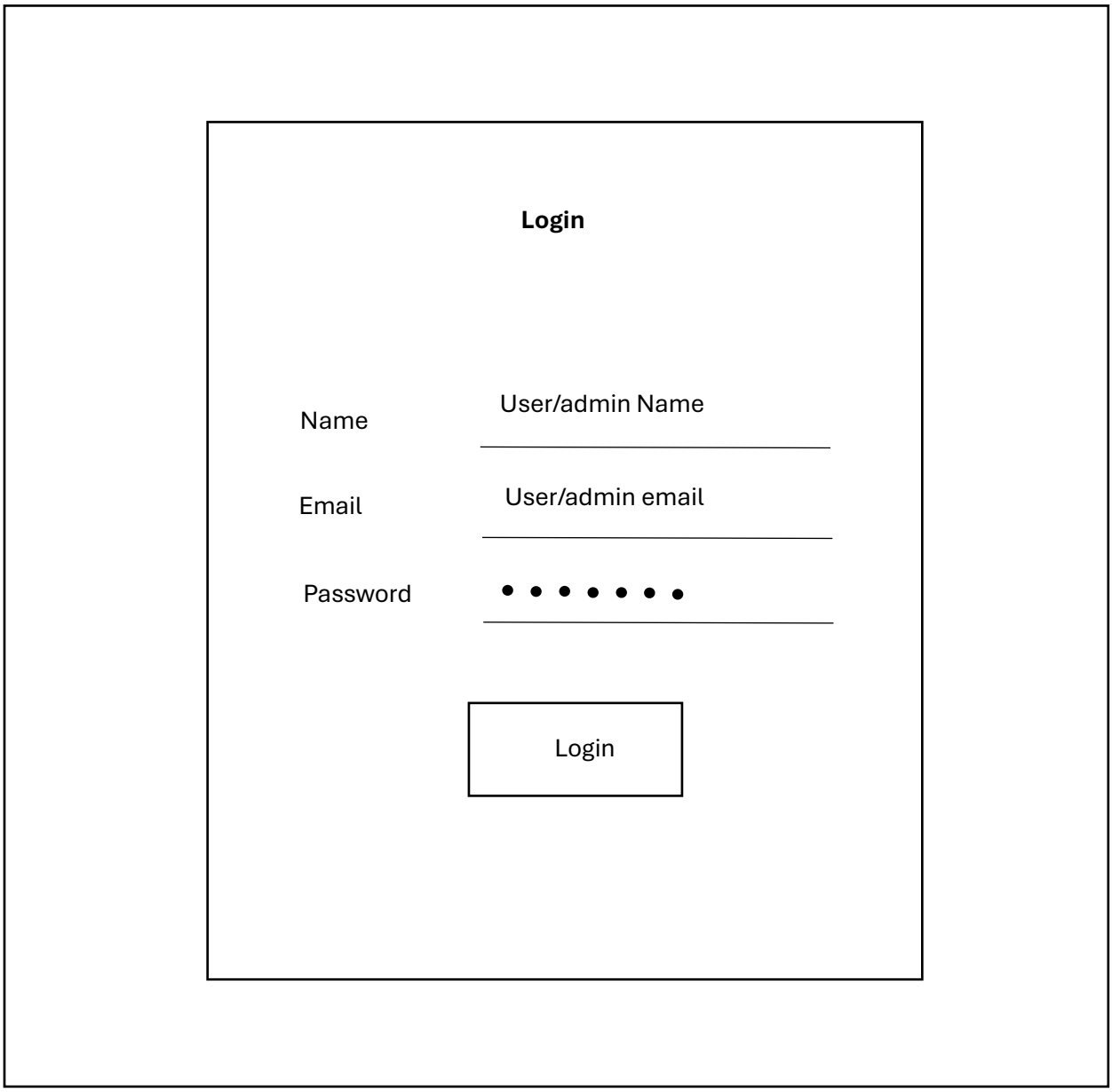


Fig 4: This is the wireframe of login portal where user/admin can login on the website.

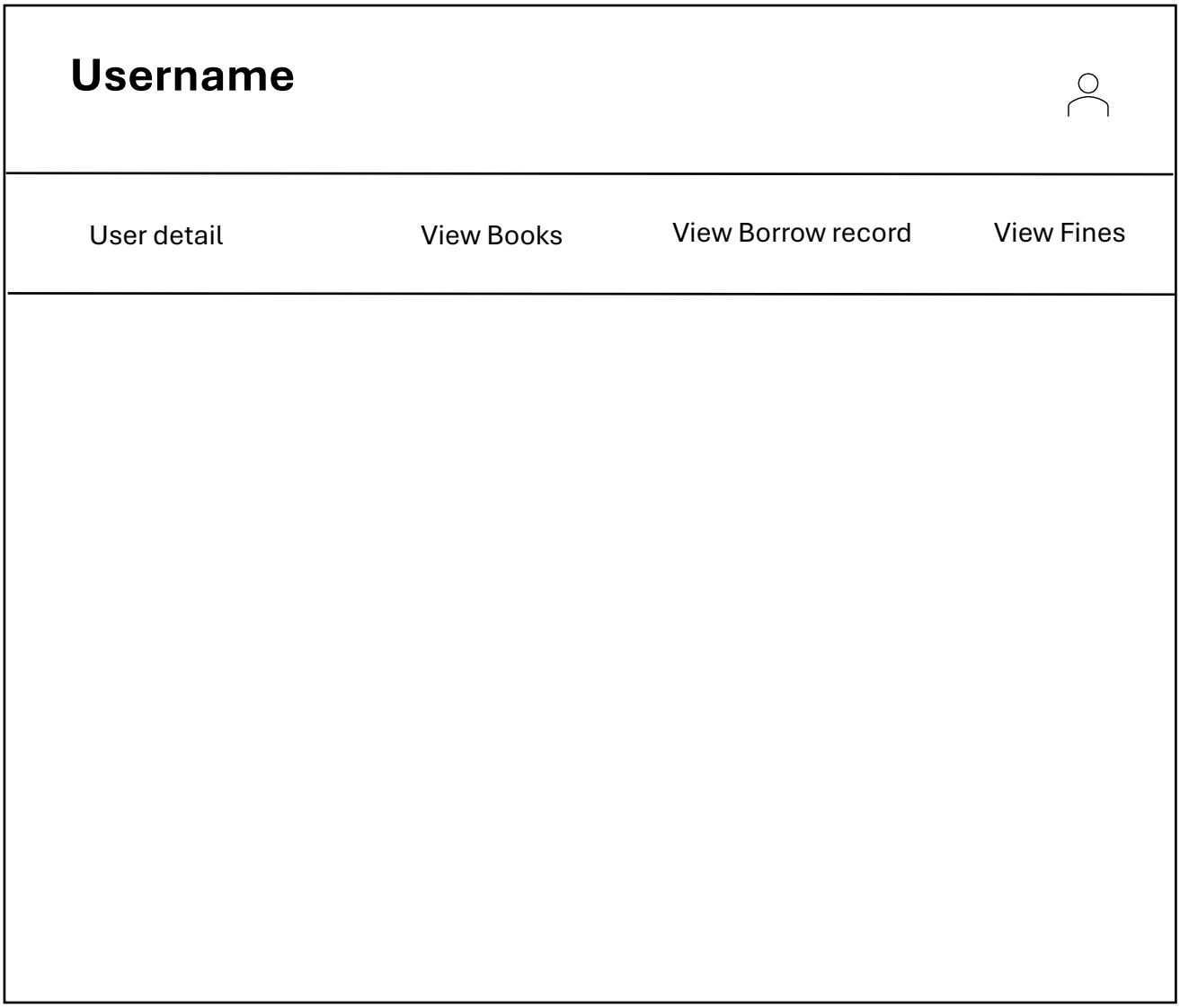


Fig 5: This is the wireframe of user dashboard. Here, user can view a books, view all borrow books by them, view all the overdue book fines by them.

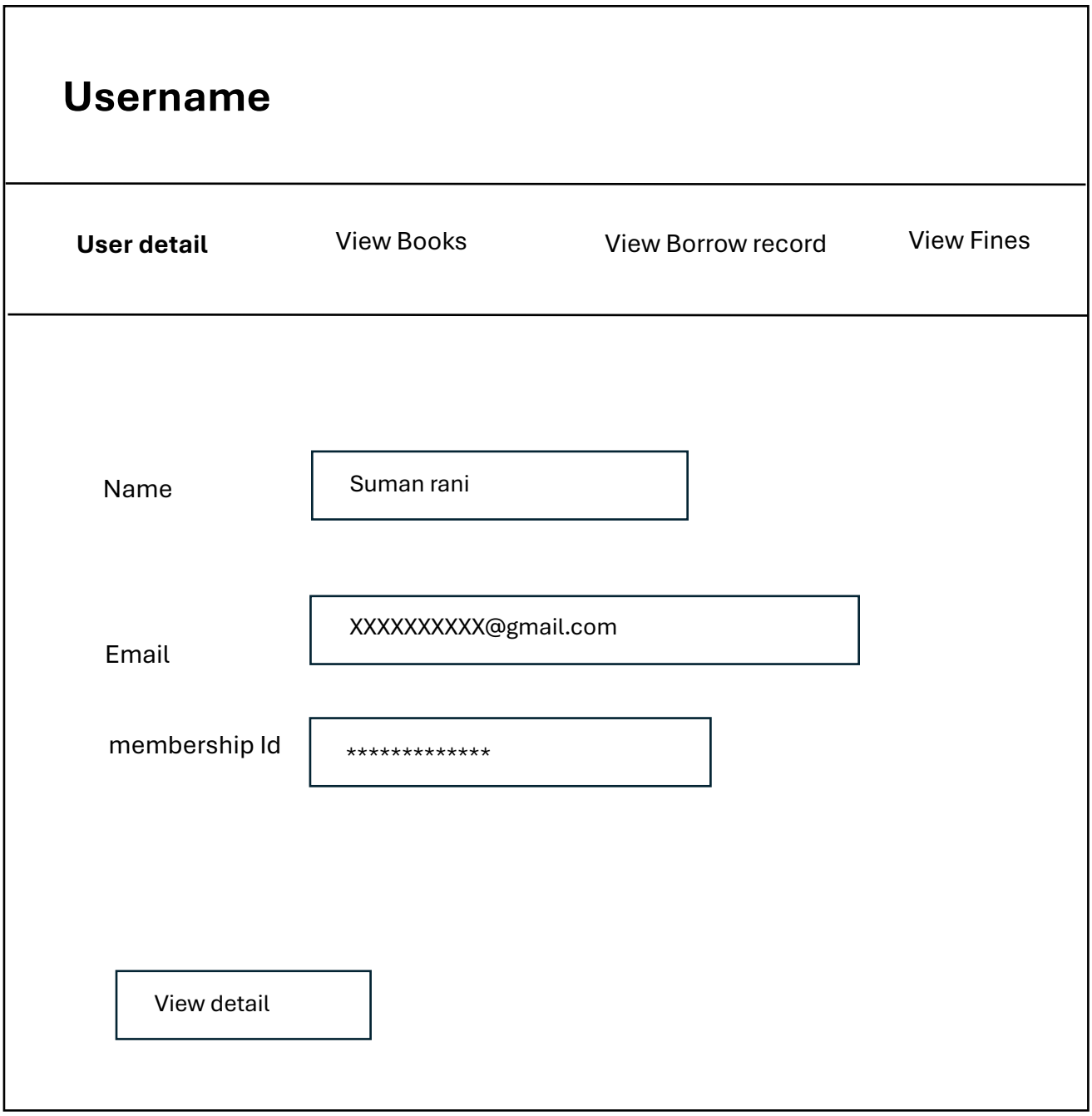


Fig 6: This is the wireframe where user can view a account detail by entering the information in fields like name, email and library membership id

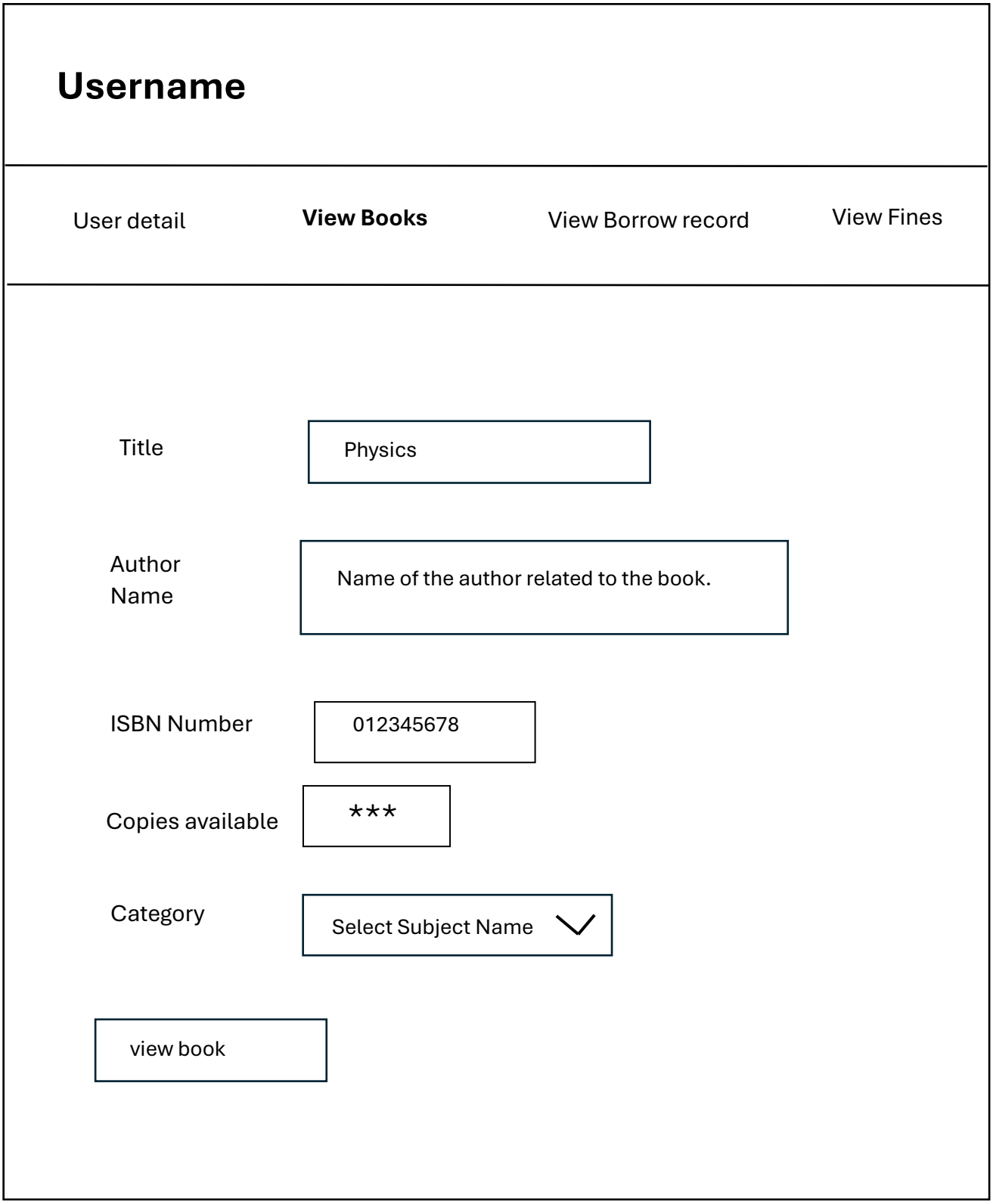

Username
User detail
View Books
View Borrow record
View Fines
Title
Physics
Author Name
Name of the author related to the book.
ISBN Number
012345678
Copies available
***
Category
Select Subject Name
view book

Fig 7: This is the wireframe where user can view books by entering the information in fields like Title, author name, ISBN number of book, copies availble , category of book in which detail of subject by selecting an option in a dropdown.

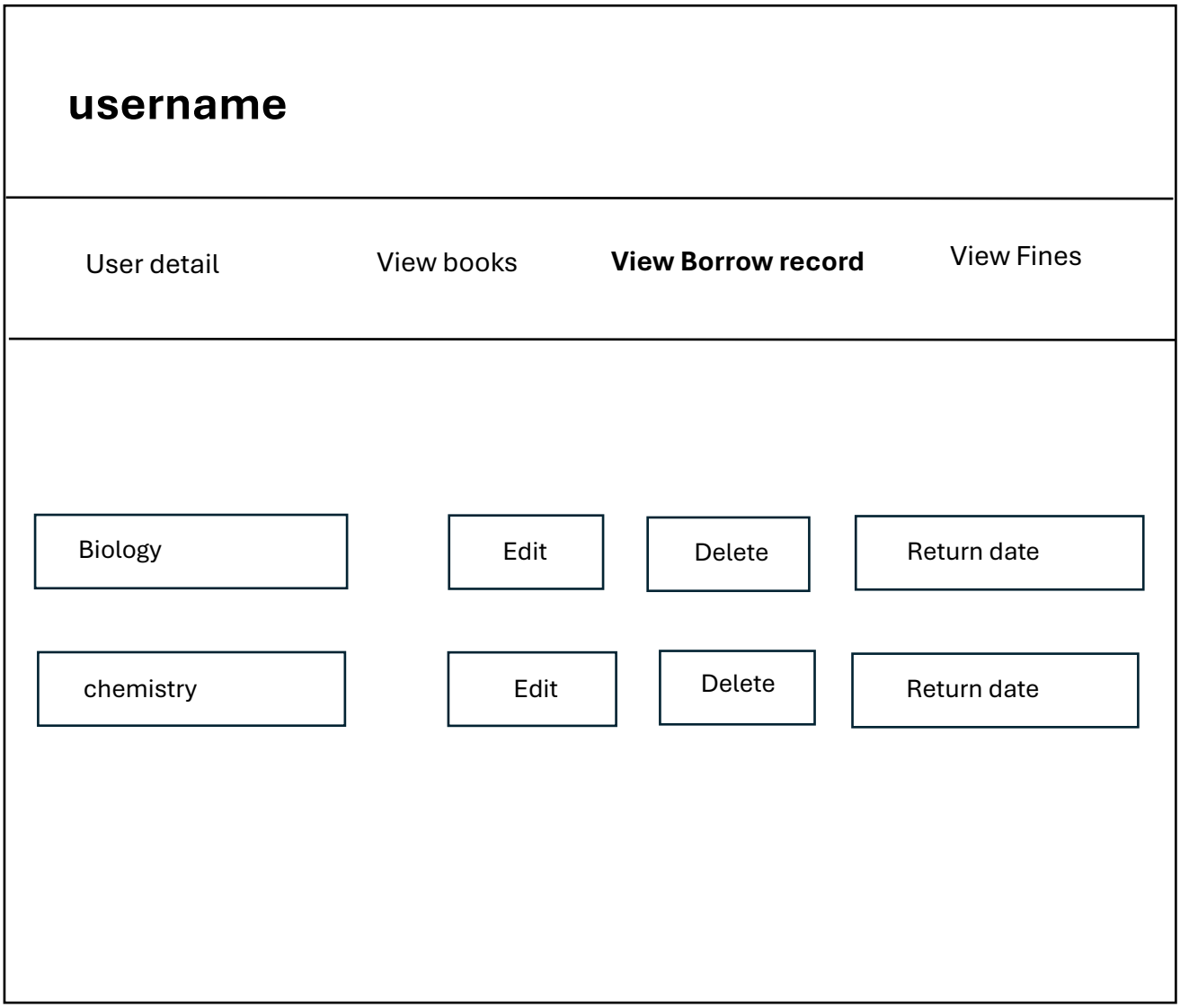


Fig 8: This is the wireframe where user can view all the books borrow by them. user can edit, delete and return date for each book.

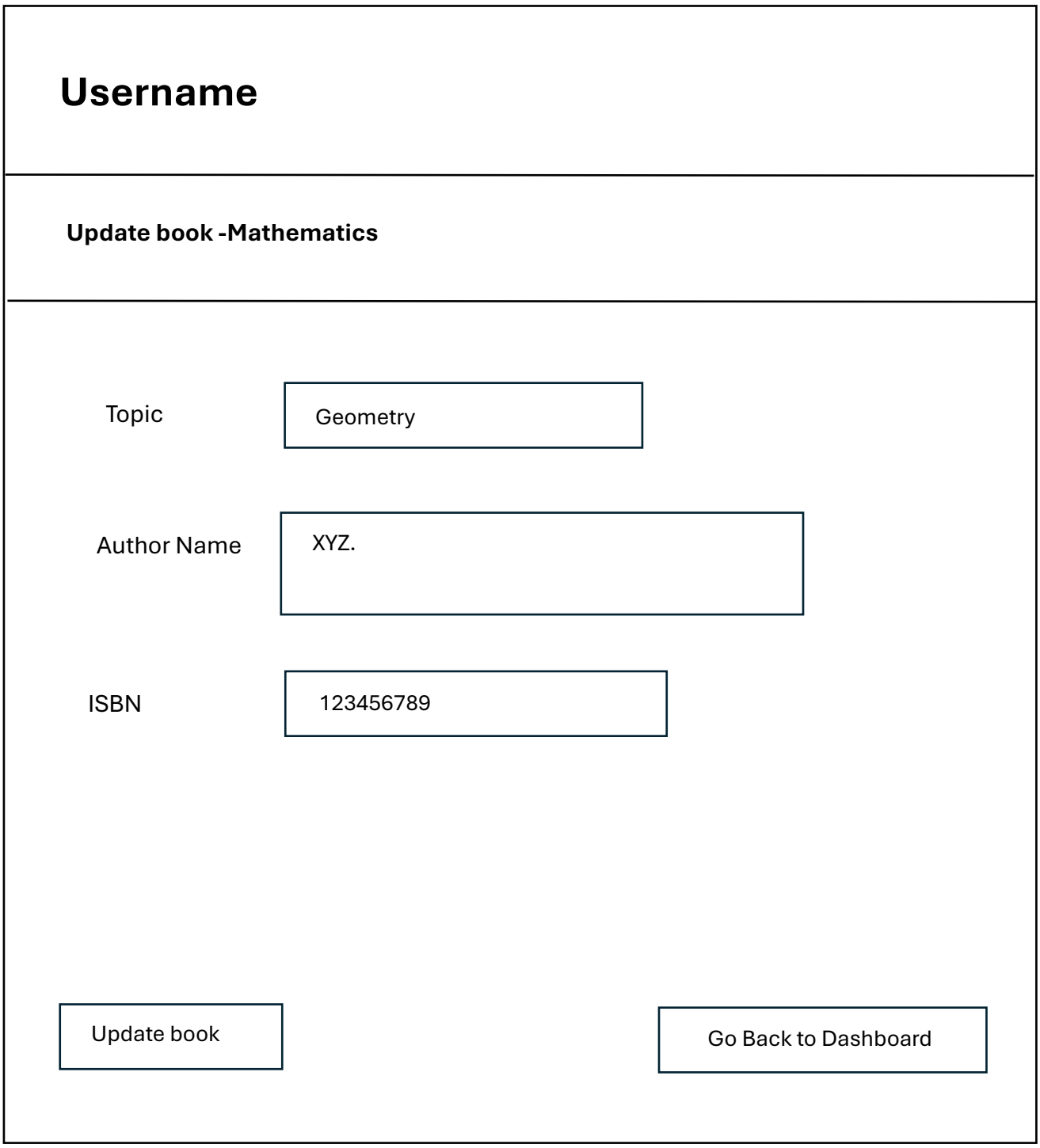


Fig 9: This is the wireframe where user can update a book by filling the details as required and then click update book.

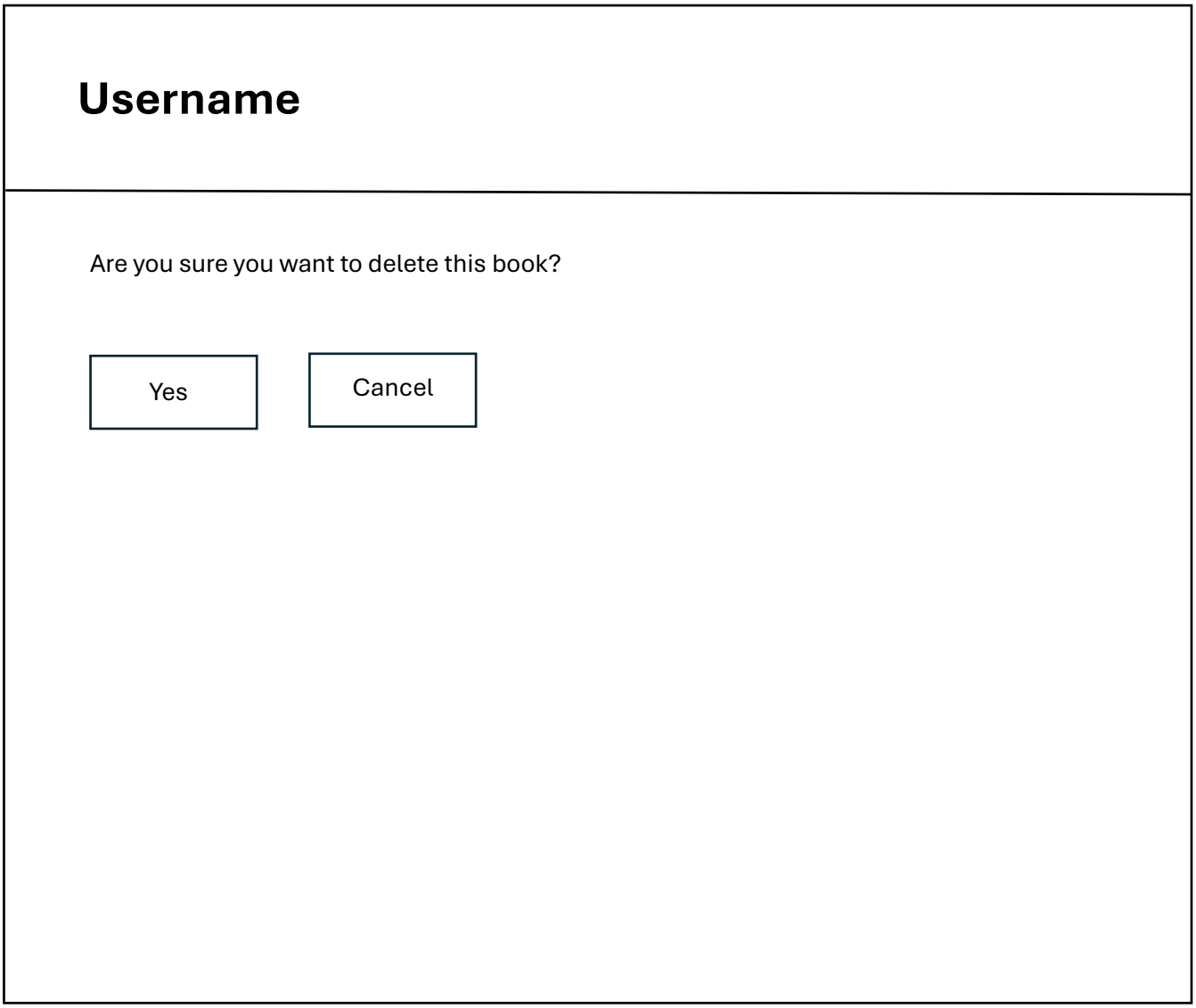
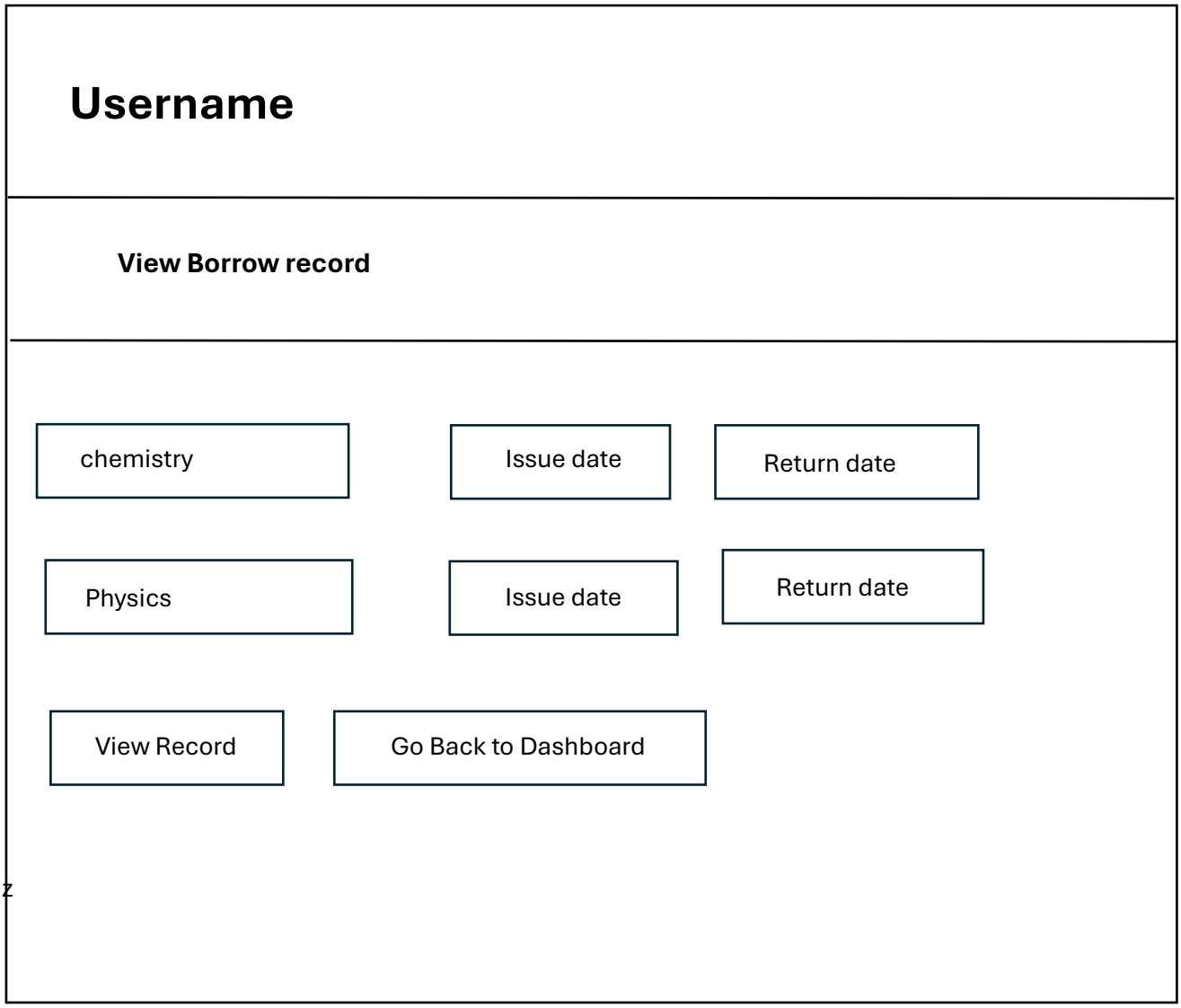


Fig 10. This is the wireframe where user can confirm to delete a book.


Username
View Borrow record
chemistry
Issue date
Return date
Physics
Issue date
Return date
View Record
Go Back to Dashboard
z

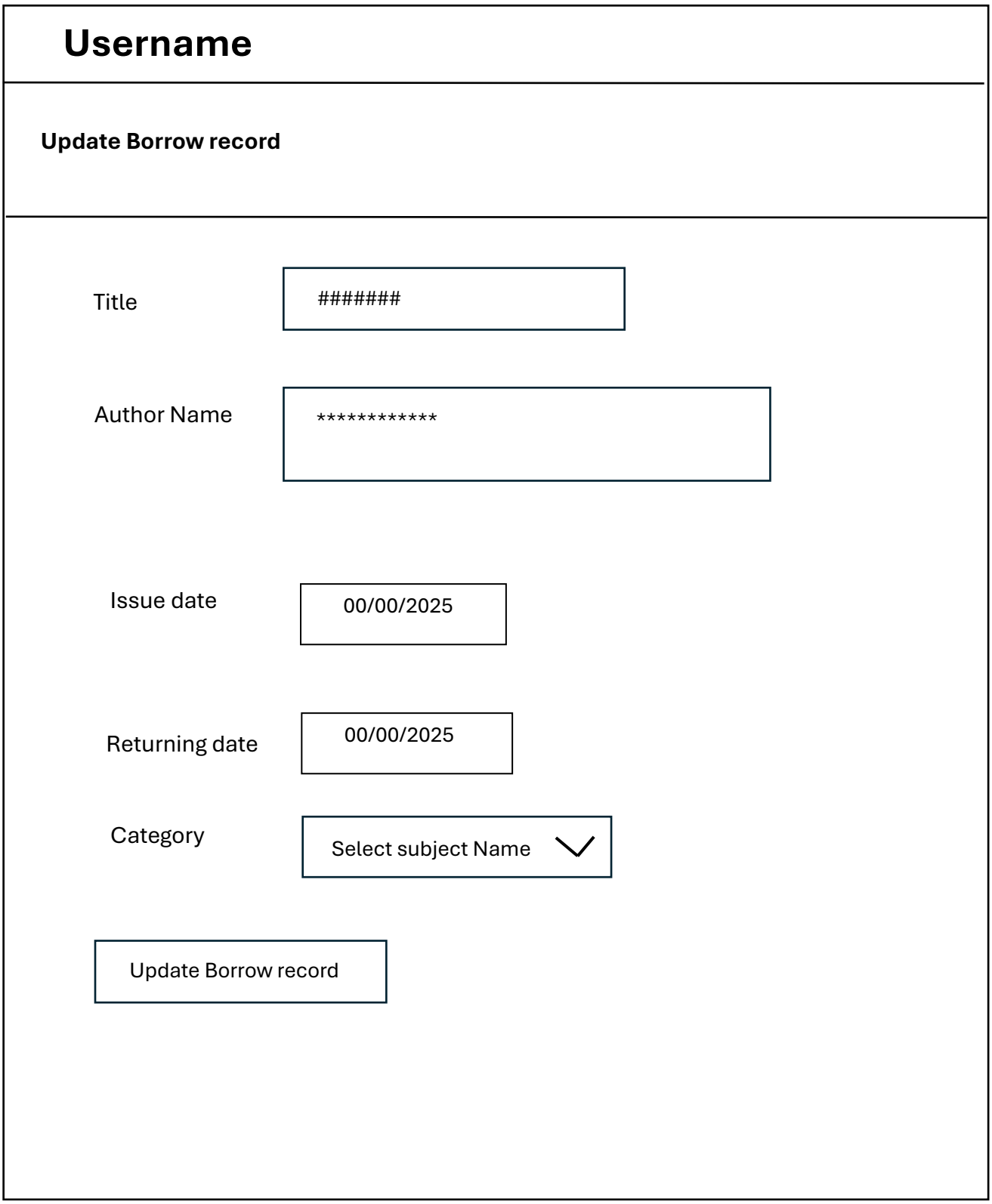


Fig 12. This is the wireframe where user can update a borrow record by filling in the details.

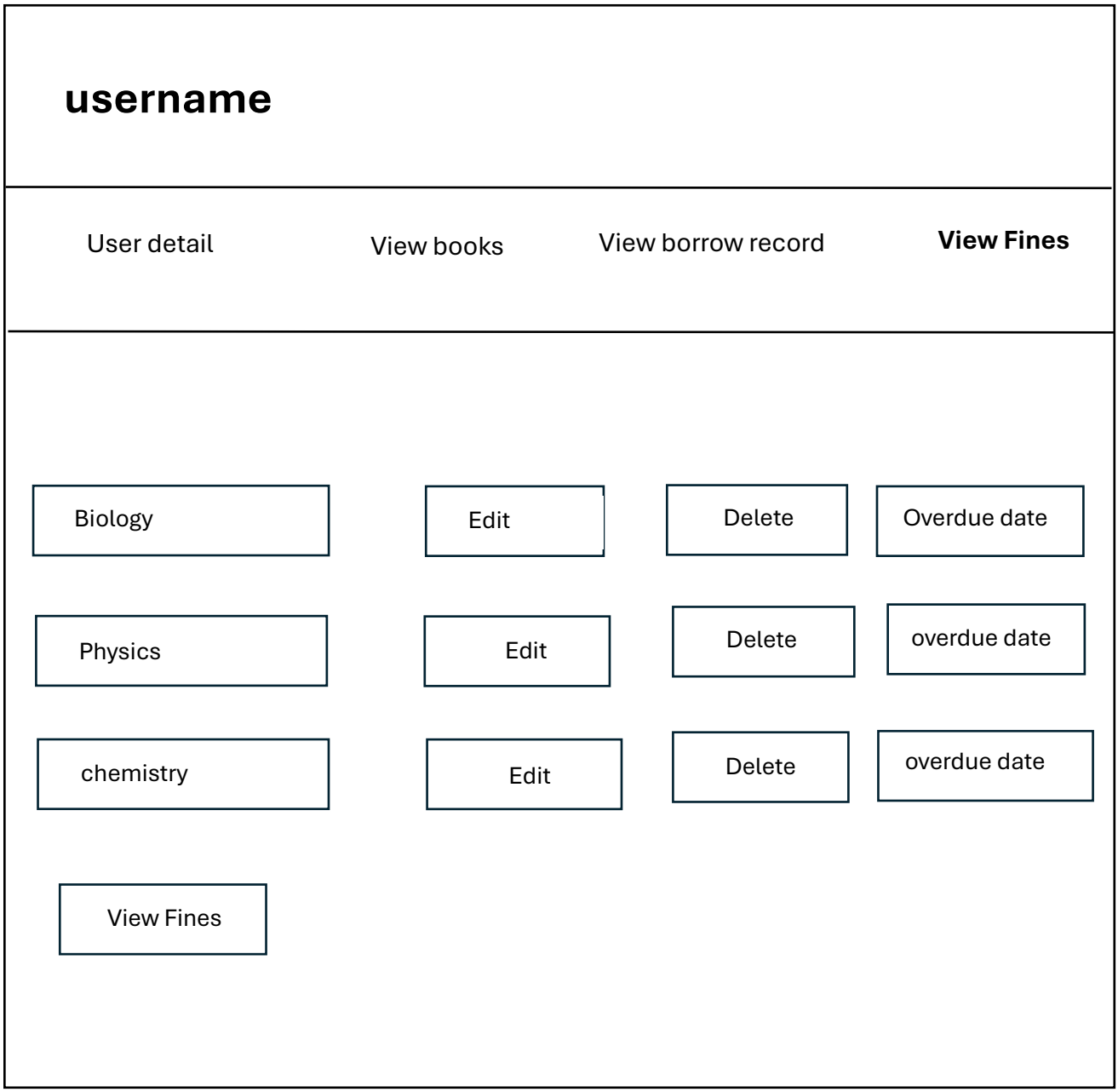


Fig 13. This is the wireframe where user can view all the information of book like edit, delete and overdue date and all fines.

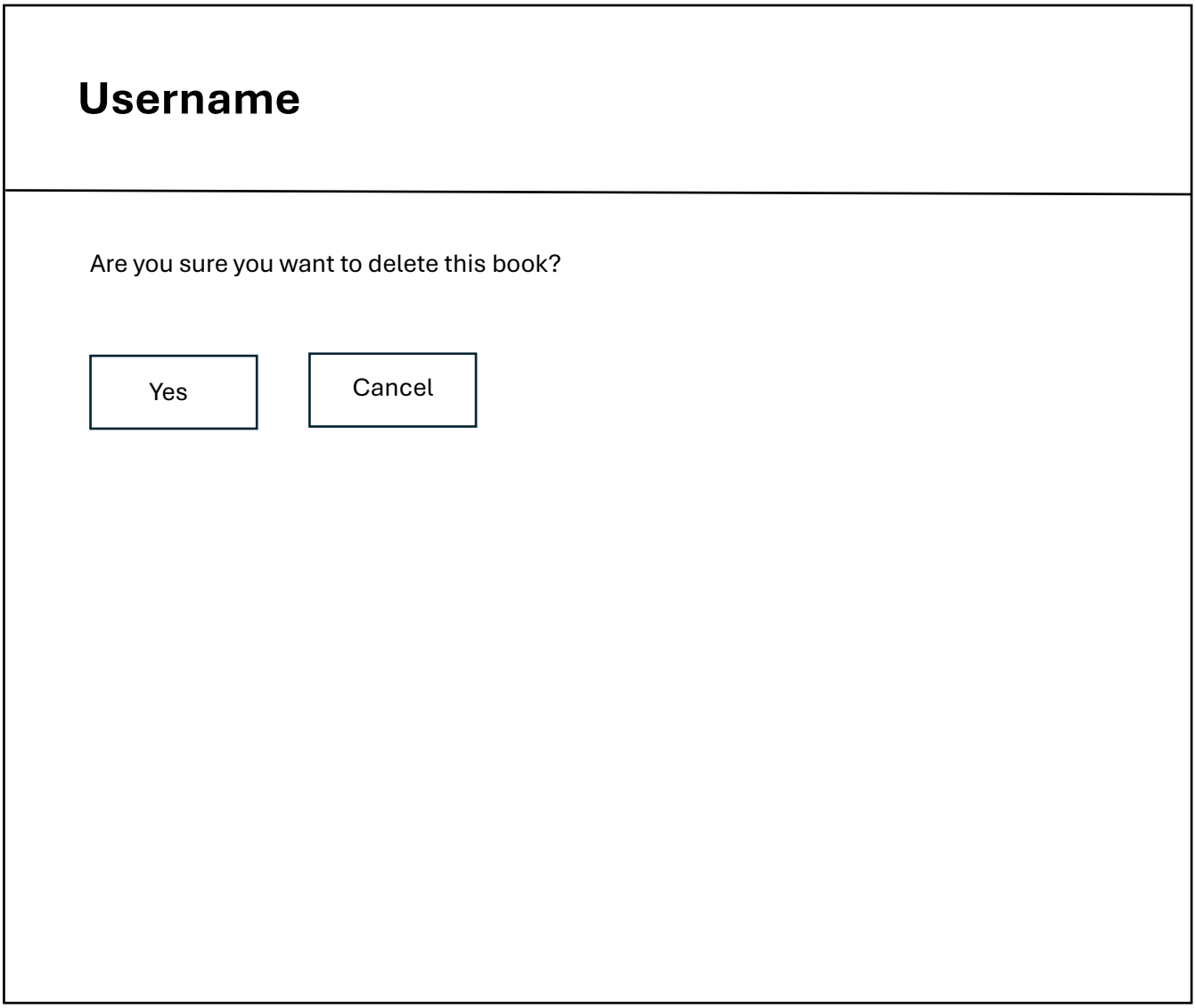


Fig 14. This is the wireframe where user can confirm to delete a book.