

Technical report

This is the technical report, which describes the development and design of an application oriented to the online sale of books, implemented following the principles of object-oriented programming and using design patterns to ensure the scalability and maintainability of the system. This virtual book store allows users, whether buyers or administrators, to interact with the system efficiently to manage the acquisition and management of books. The main objective of this application is to offer a simple and intuitive shopping experience for customers, who can search for books, add them to a shopping cart and place orders. On the other hand, administrators have the possibility to keep the book catalog updated, adding and modifying the details of the available products.

Business Model:

This business model is characterized by offering users (buyers) a wide range of products (books) that they can browse, search and buy efficiently. The purchasing process is carried out through a shopping cart, where the customer can manage the books they wish to purchase and proceed to place an order. In parallel, the application has an administrative functionality that allows sellers or administrators to manage the book catalog. Through this interface, administrators can add new books, modify existing details (such as price, stock or description), and keep the product offering updated, ensuring that the store remains relevant and competitive.

The user stories for the Web Book Store:

- As a customer, I want to see a list of available books, so I can choose which one to buy.
- As a customer, I want to search for a book by some characteristic (author, ISBN, etc.), to quickly find the one I'm looking for.
- As a customer, I want to be able to see the details of a book, to know its description, price, and author before deciding whether to buy it.
- As a customer, I want to be able to add books to a shopping cart, so I can buy them all at once.
- As a customer, I want to be able to remove books from the shopping cart, to adjust my order before checkout.
- As a customer, I want to be able to review my cart before purchasing, to make sure I have the right books.
- As an administrator, I want to be able to add new books to the catalog, to keep the store up to date.
- As an administrator, I want to be able to modify the details of a book (price, stock, description), to adjust the product information.

CRC Cards:

Book:

Book	
Responsibilities	Collaborators
Save information about the book	Catalog
Show details about the book to the user	Shopping Cart

Buyer:

Buyer	
Responsibilities	Collaborators
View the book catalog	Shopping Cart
Select books and add them to the shopping cart	Catalog
Place orders and complete purchases	Order

Catalog:

Catalog	
Responsibilities	Collaborators
Manage book collection	Buyer
Allow book search	Book
Allow filtering by category, price, author, etc.	

Order:

Order	
Responsibilities	Collaborators
Process the order placed by the buyer	Shopping Cart
Record the order details	Buyer
Save the transaction	Book

Seller:

Seller	
Responsibilities	Collaborators
Add, modify and delete books in the catalog	Book
Manage inventory	Catalog

Shopping Cart:

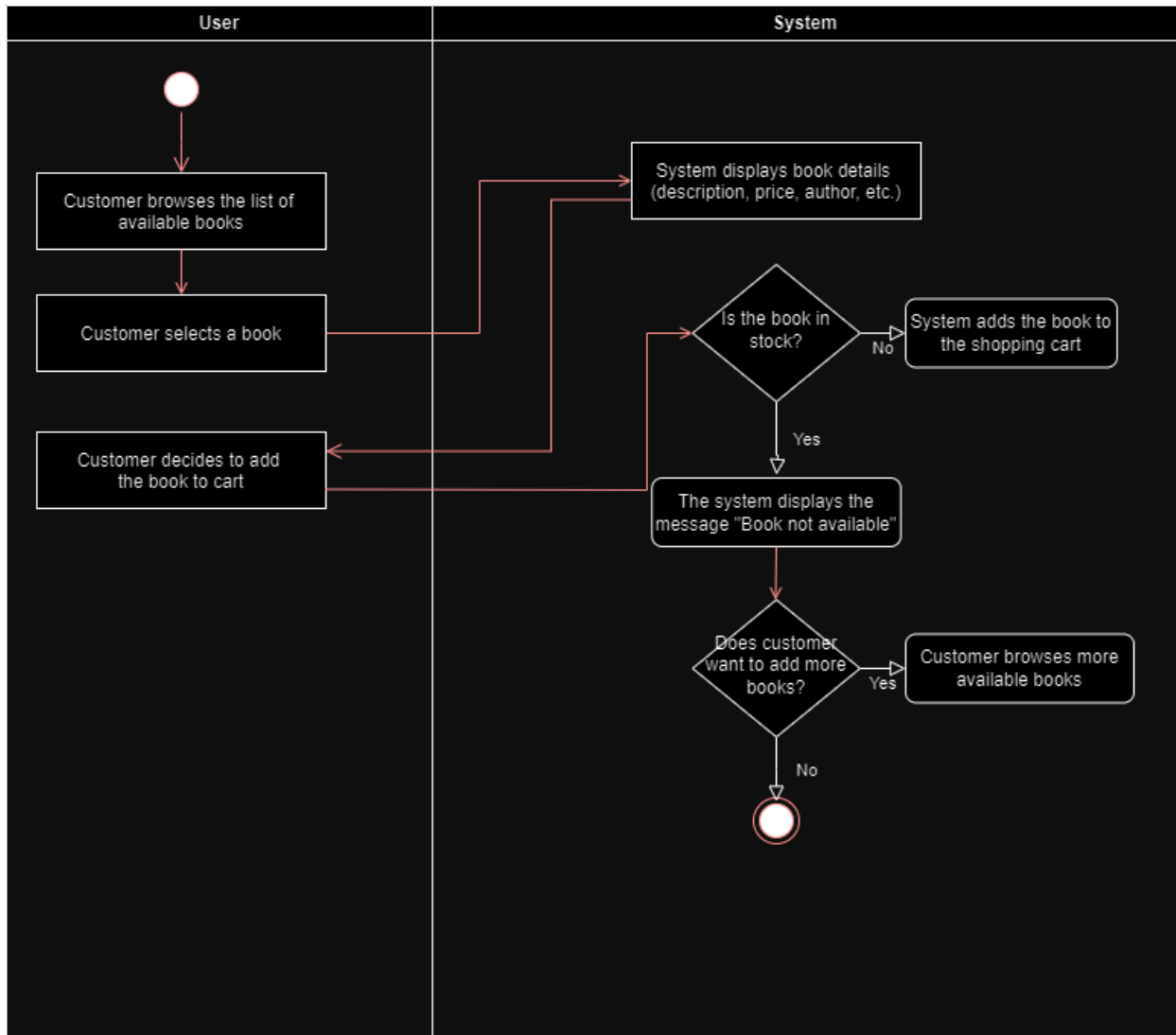
Shooping Cart	
Responsibilities	Collaborators
Add and remove books selected by the buyer	Book
Calculate the total of the Purchase	Buyer

User:

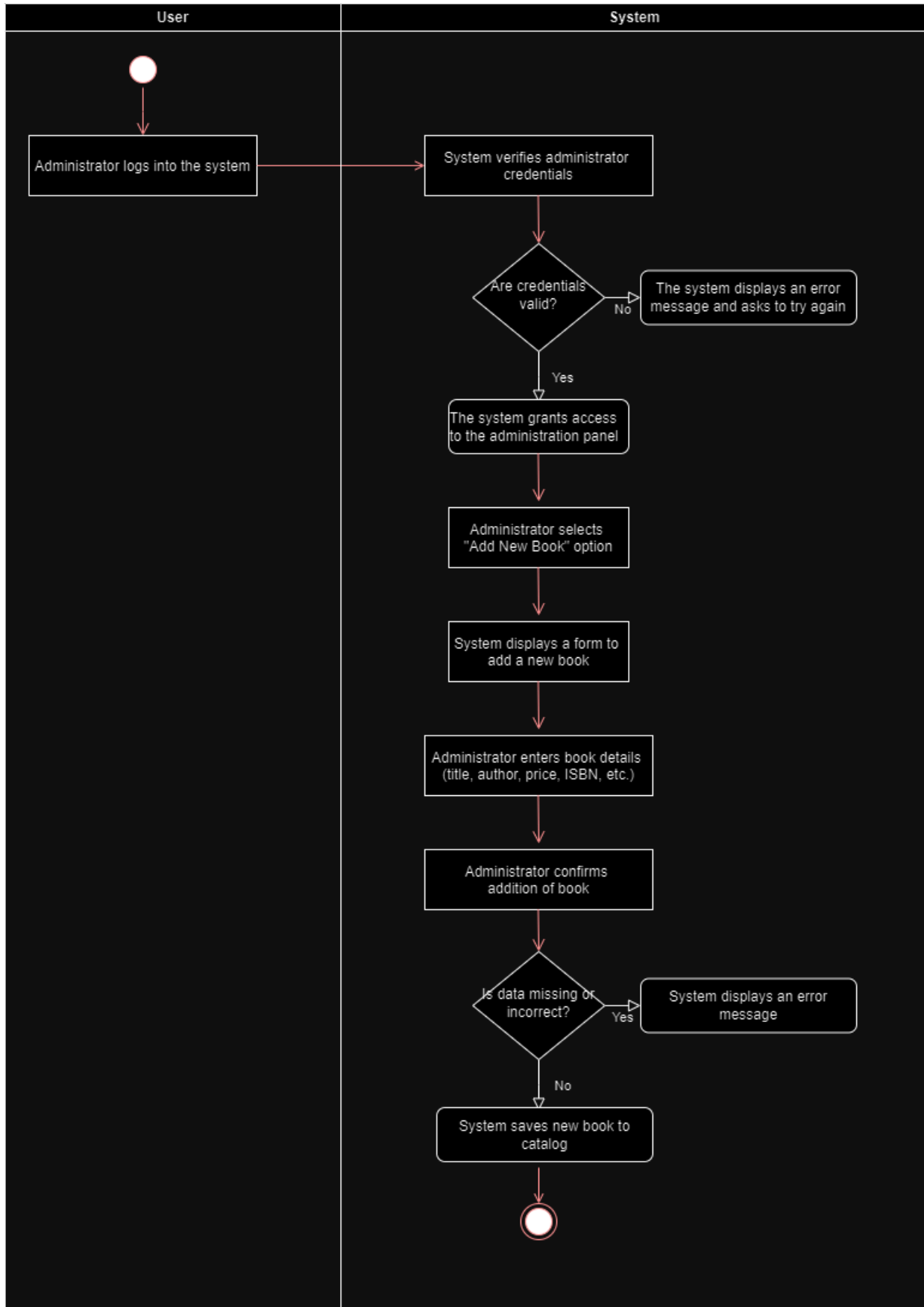
User	
Responsibilities	Collaborators
Save user information	Buyer
Manage user authentication and profil	Seller

Activities Diagrams:

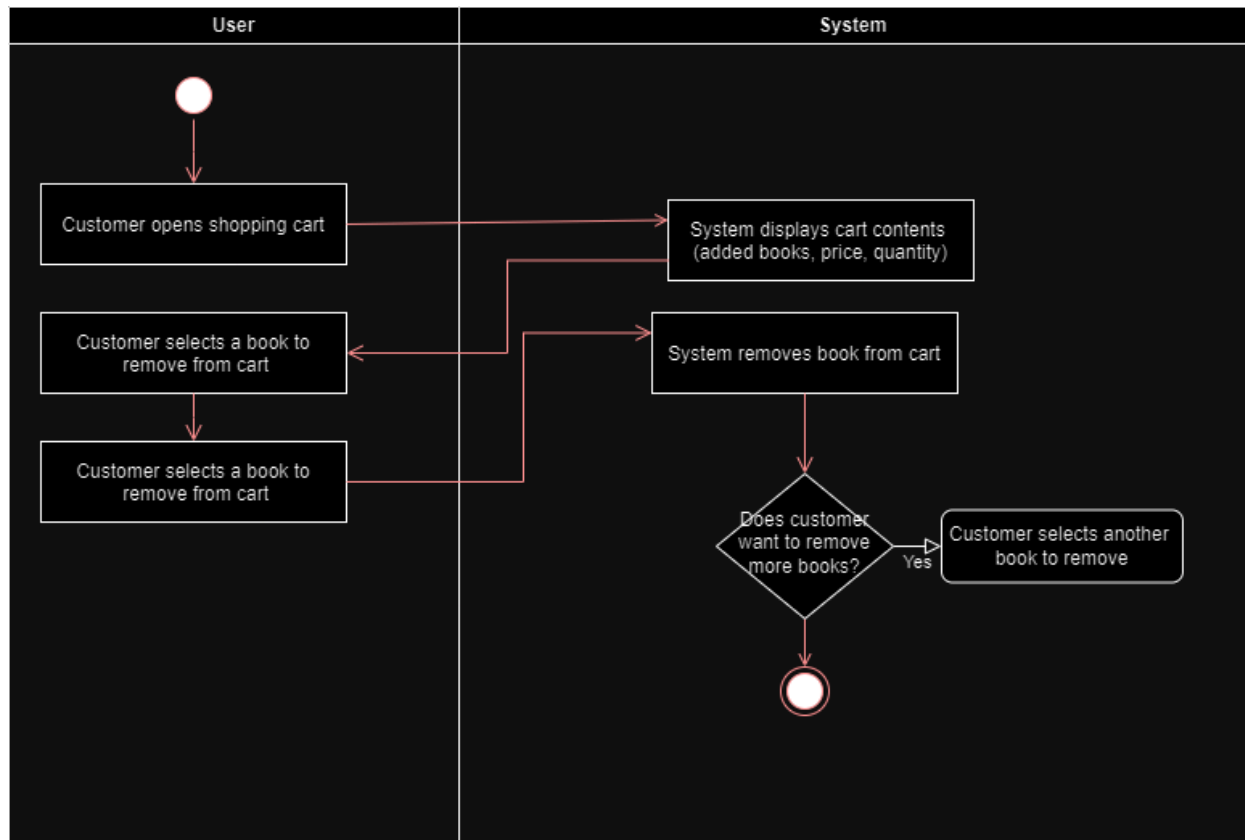
Add Books Cart:



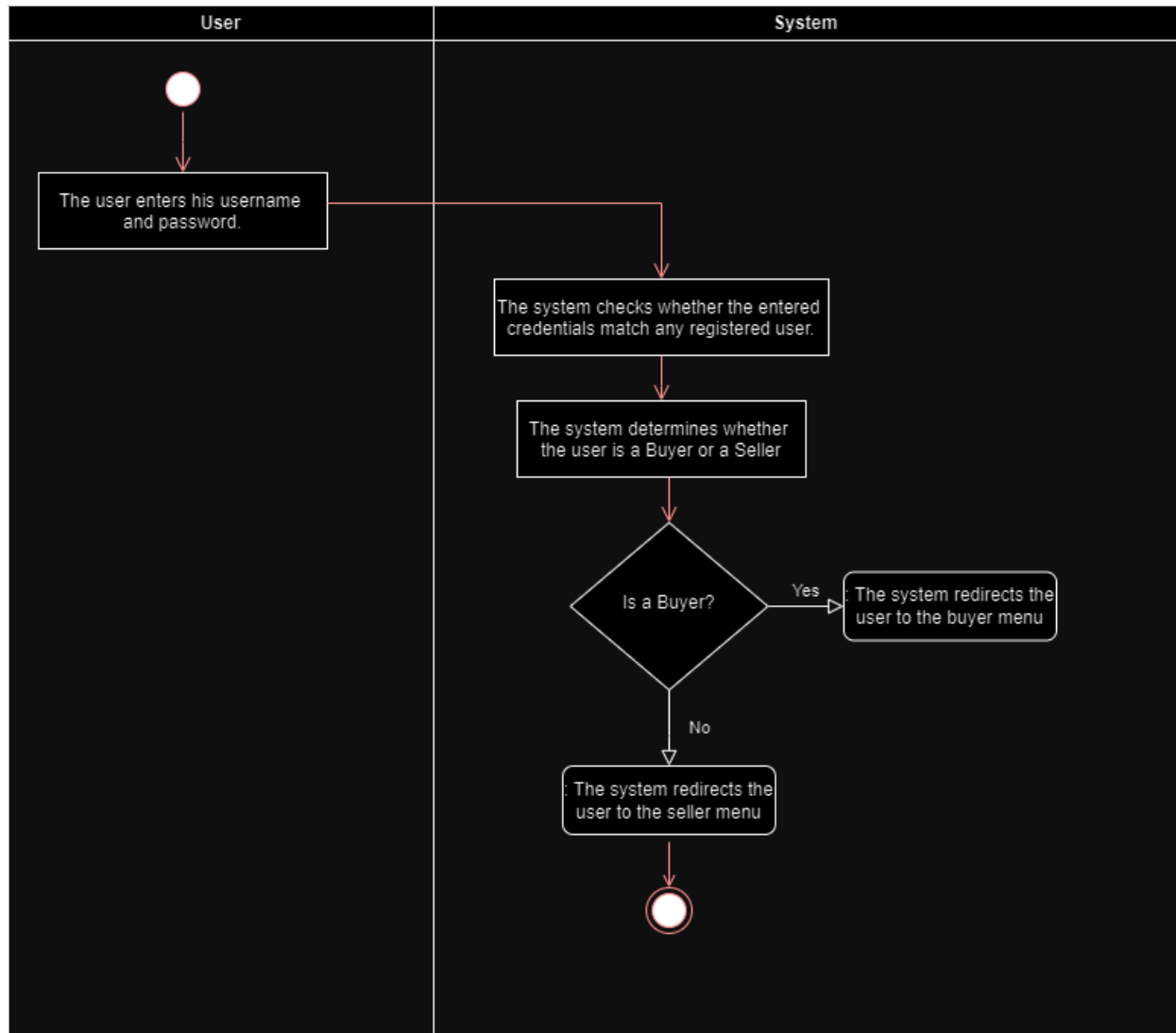
Add new Books:



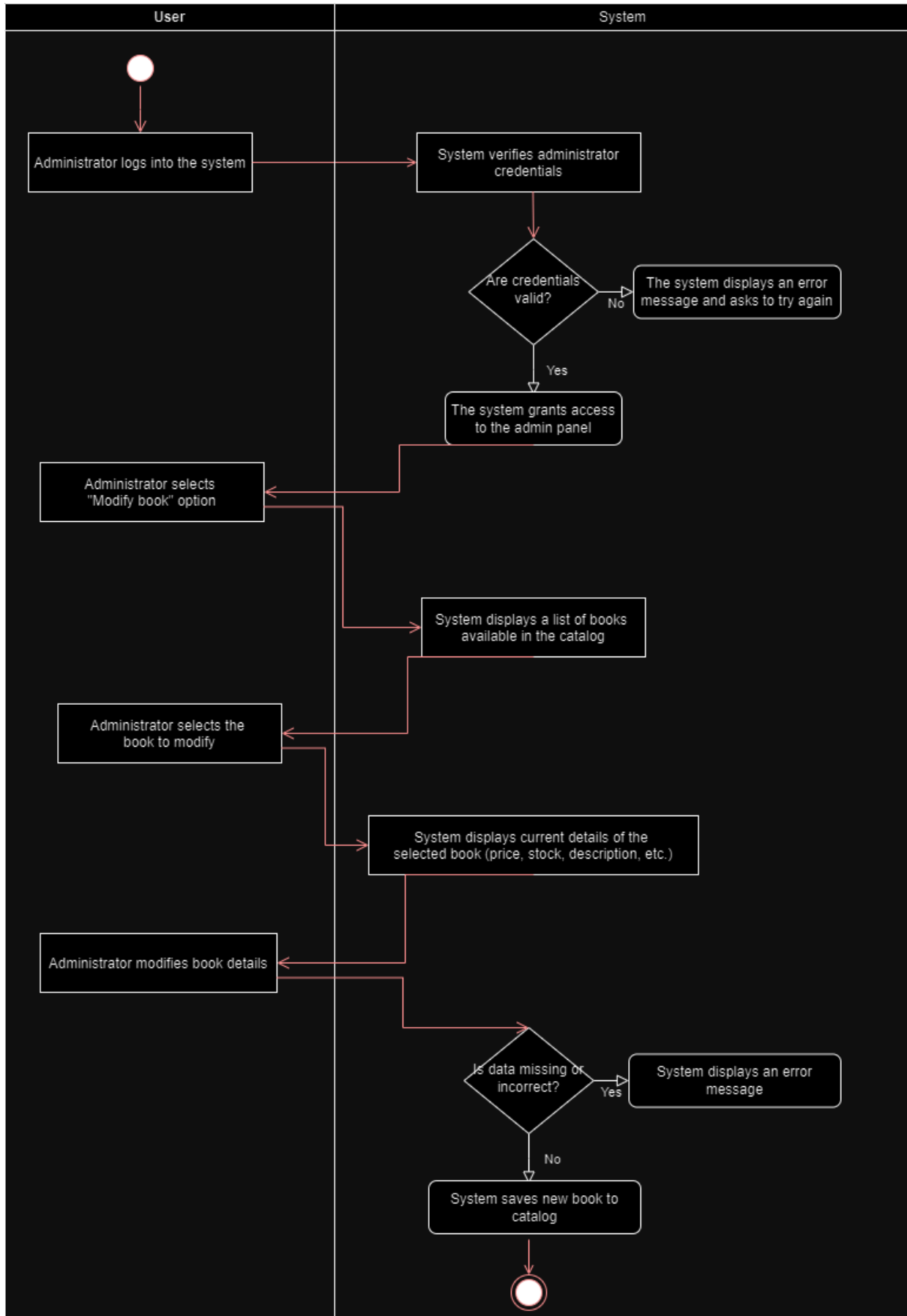
Delete Books Cart:



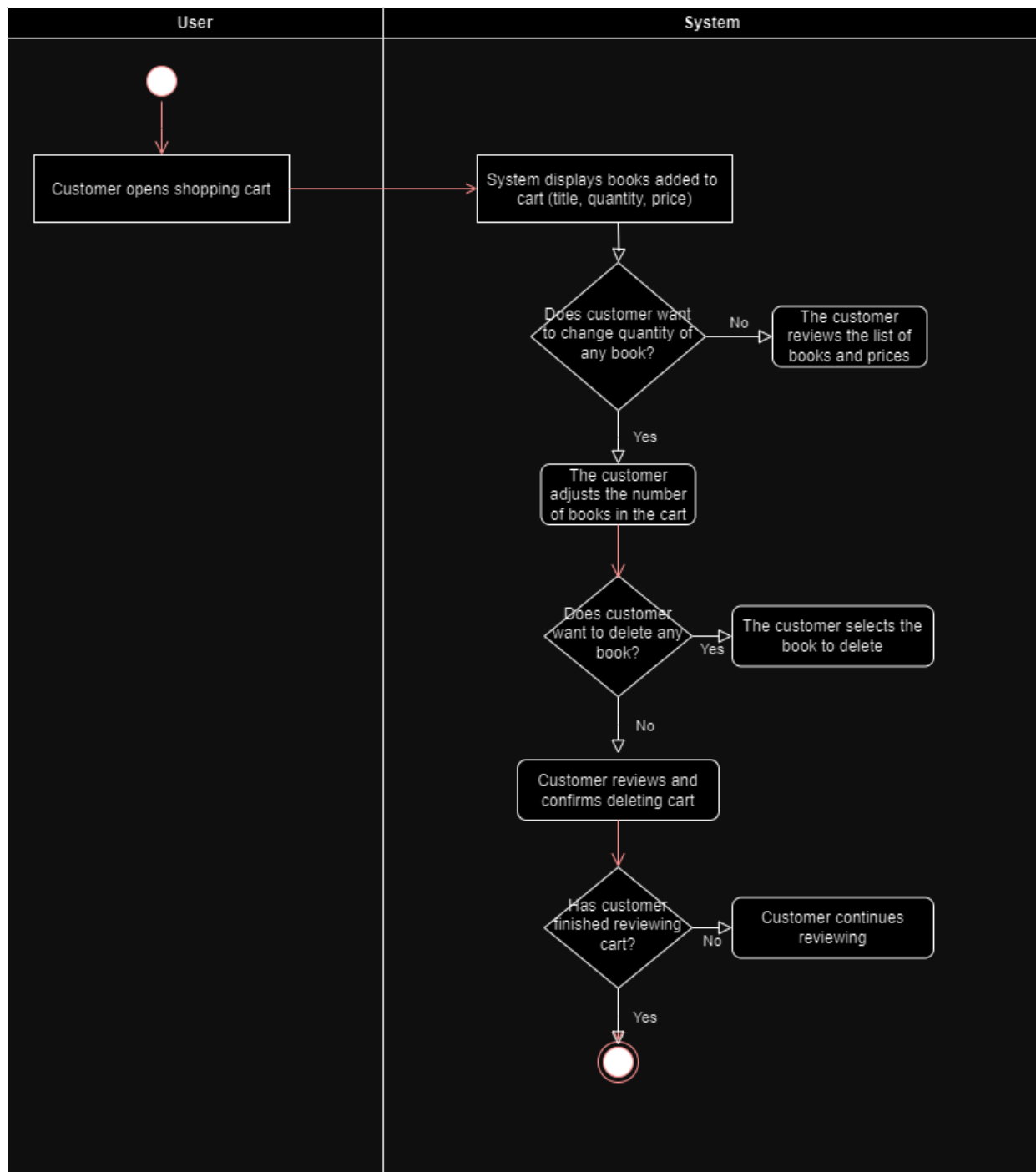
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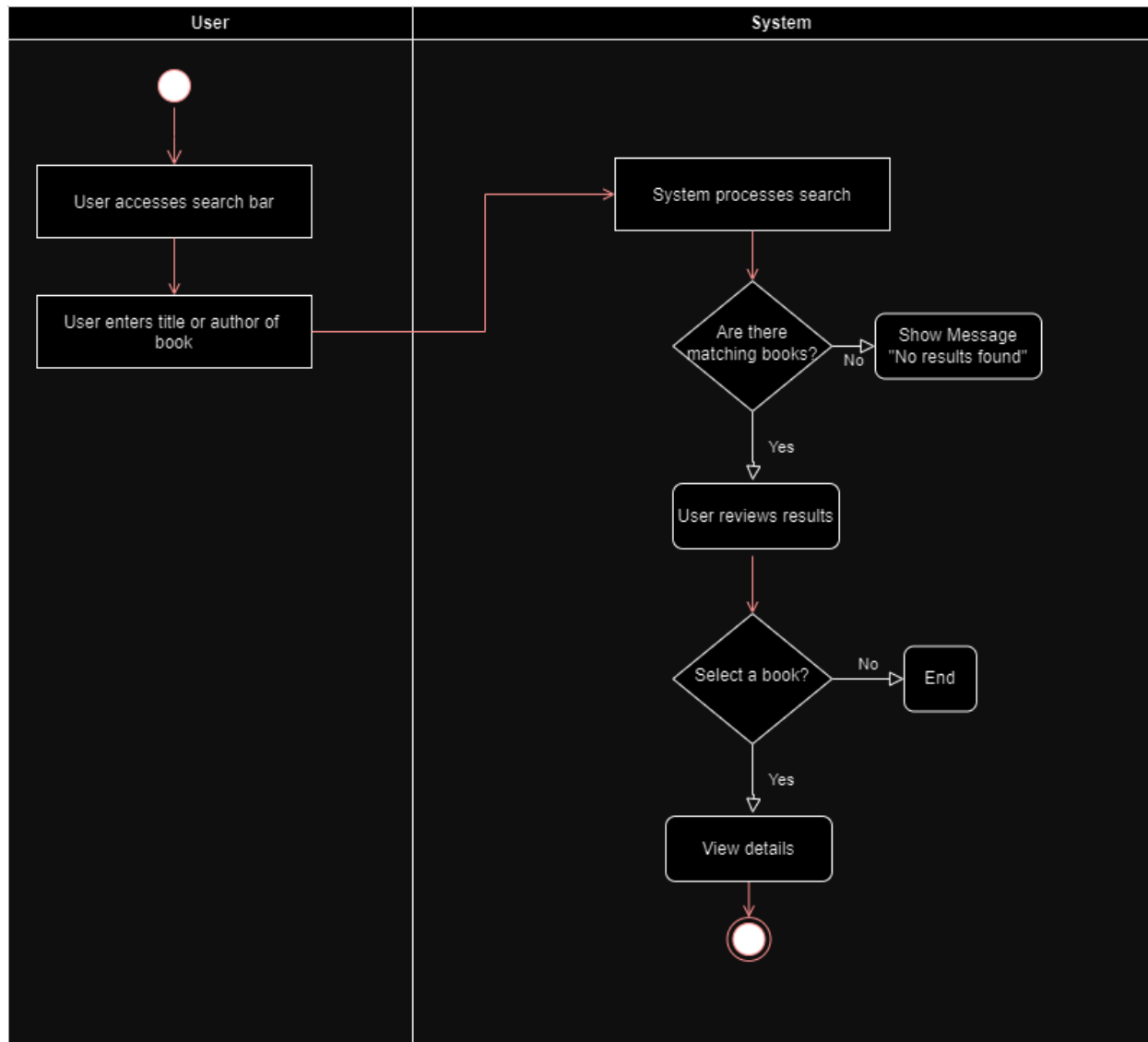
Modify details books:



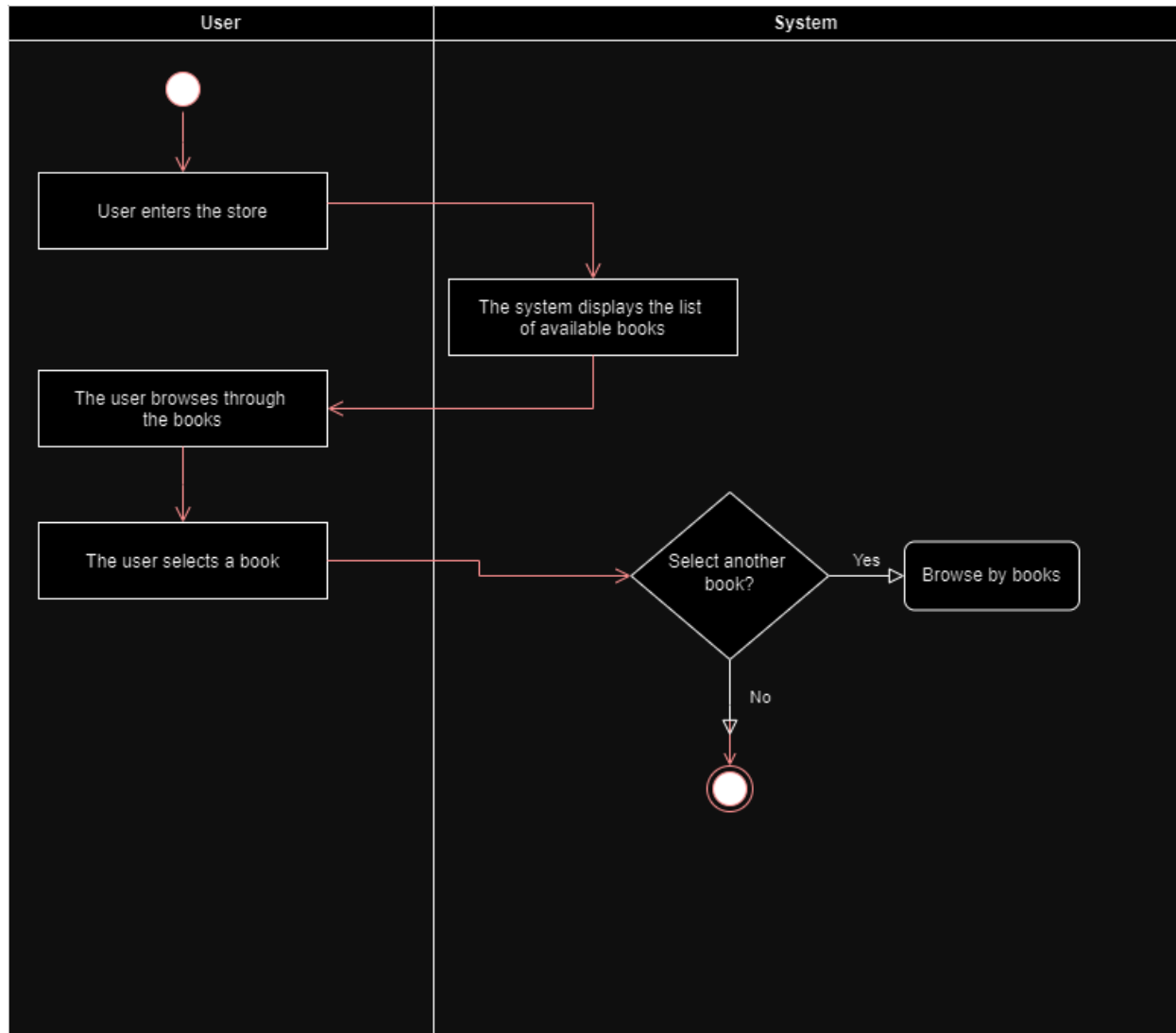
Review books cart



Search books:

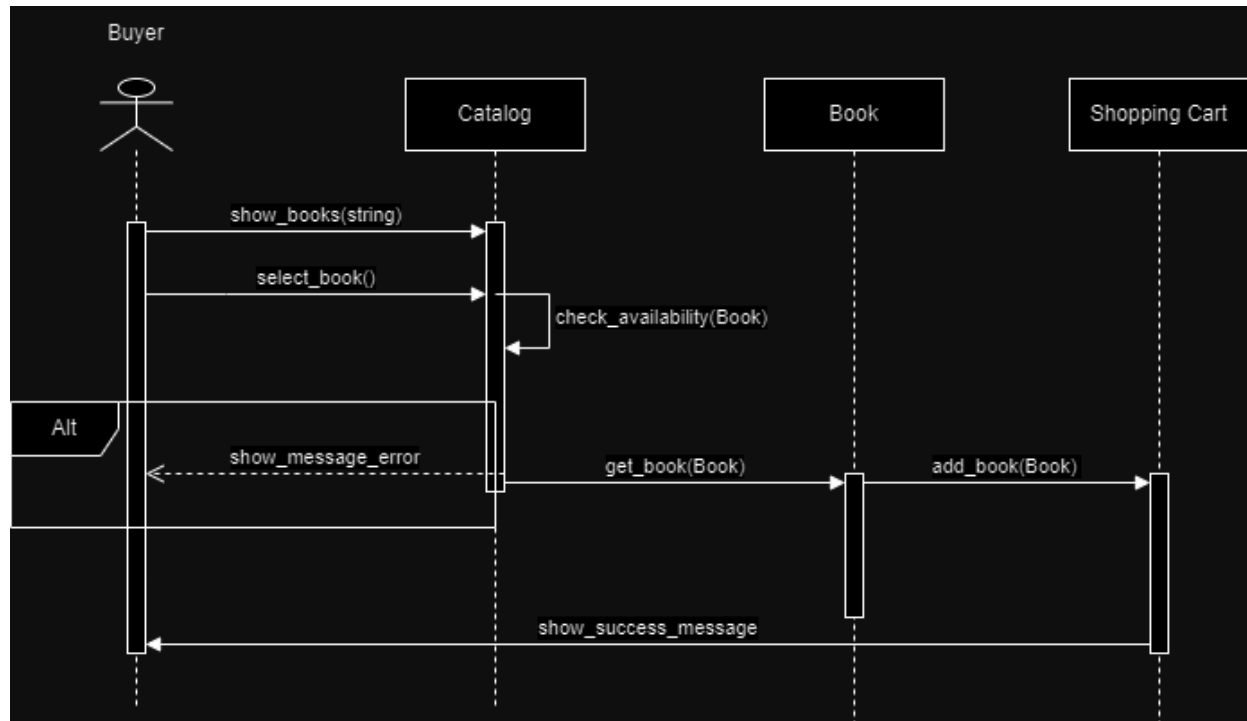


Show books

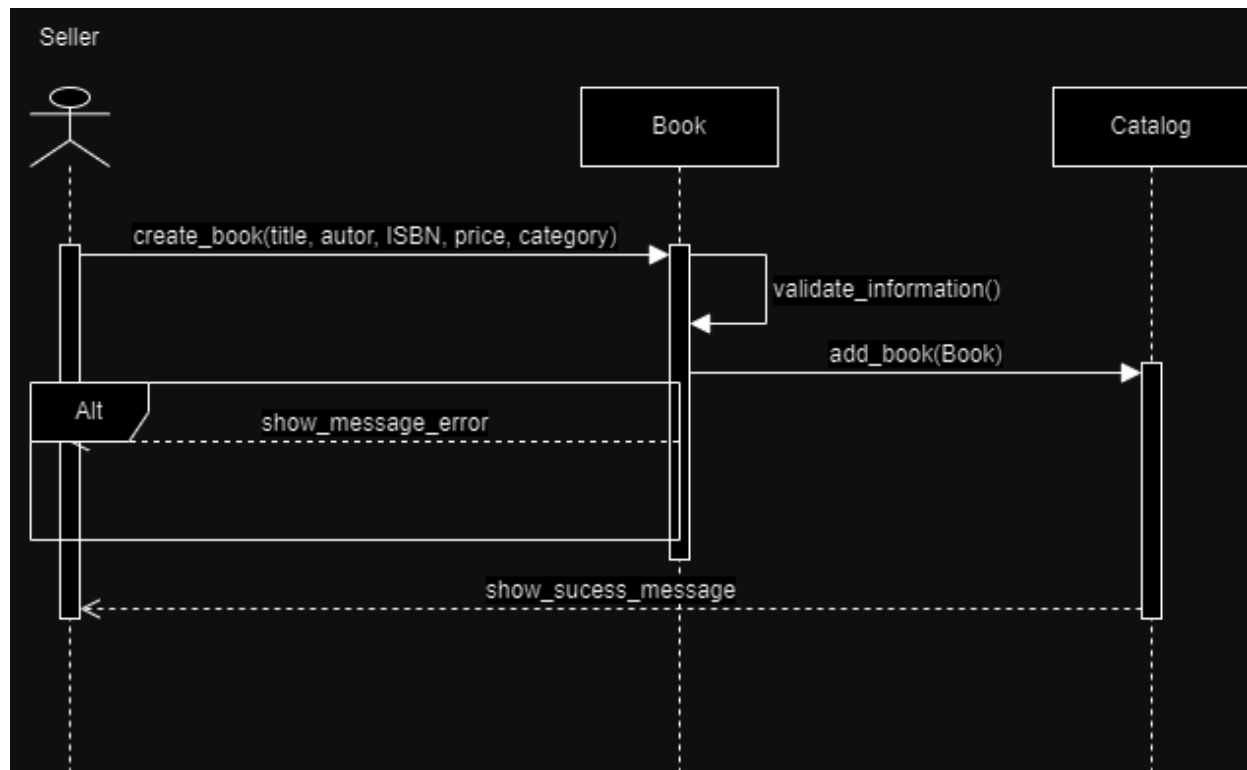


Sequence Diagrams:

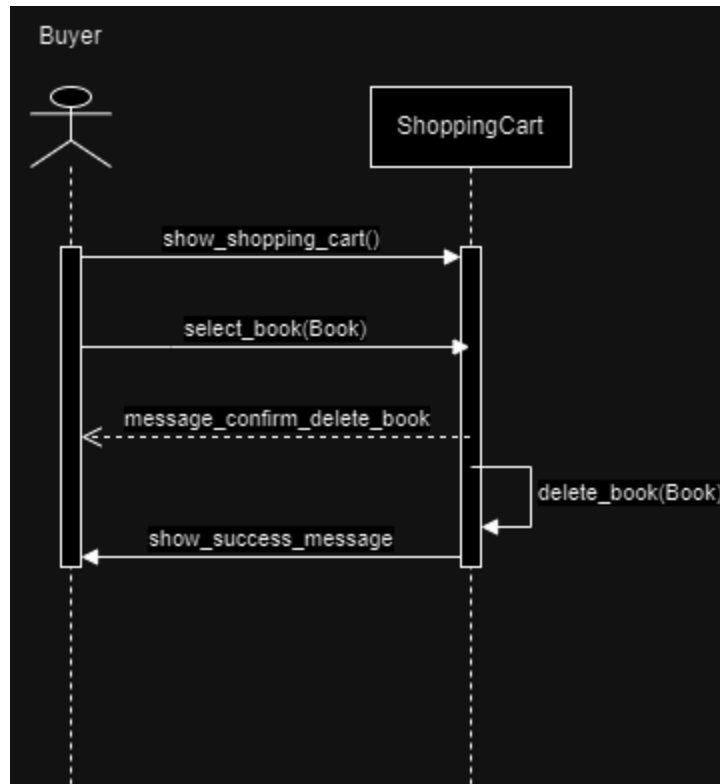
Add books cart:



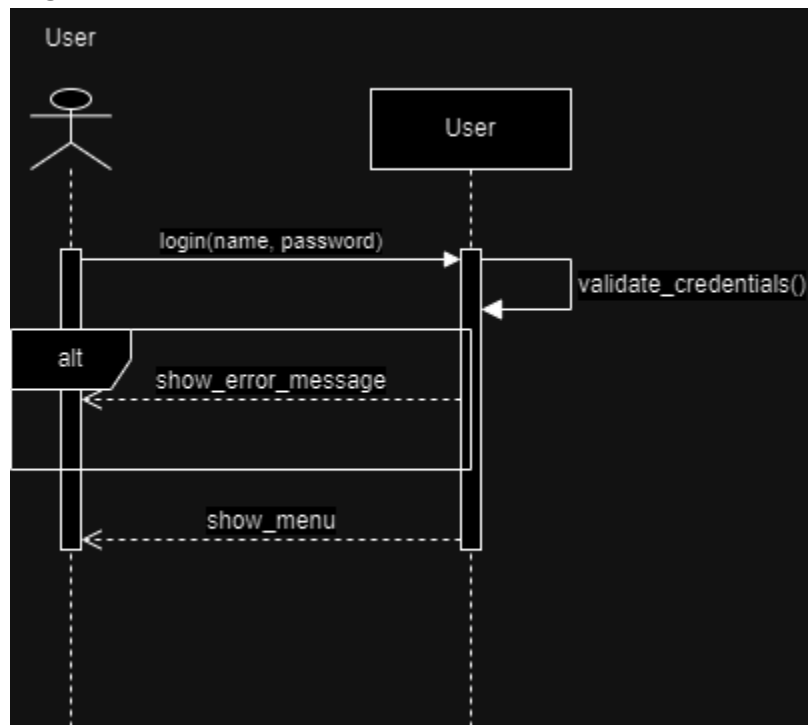
Add new books:



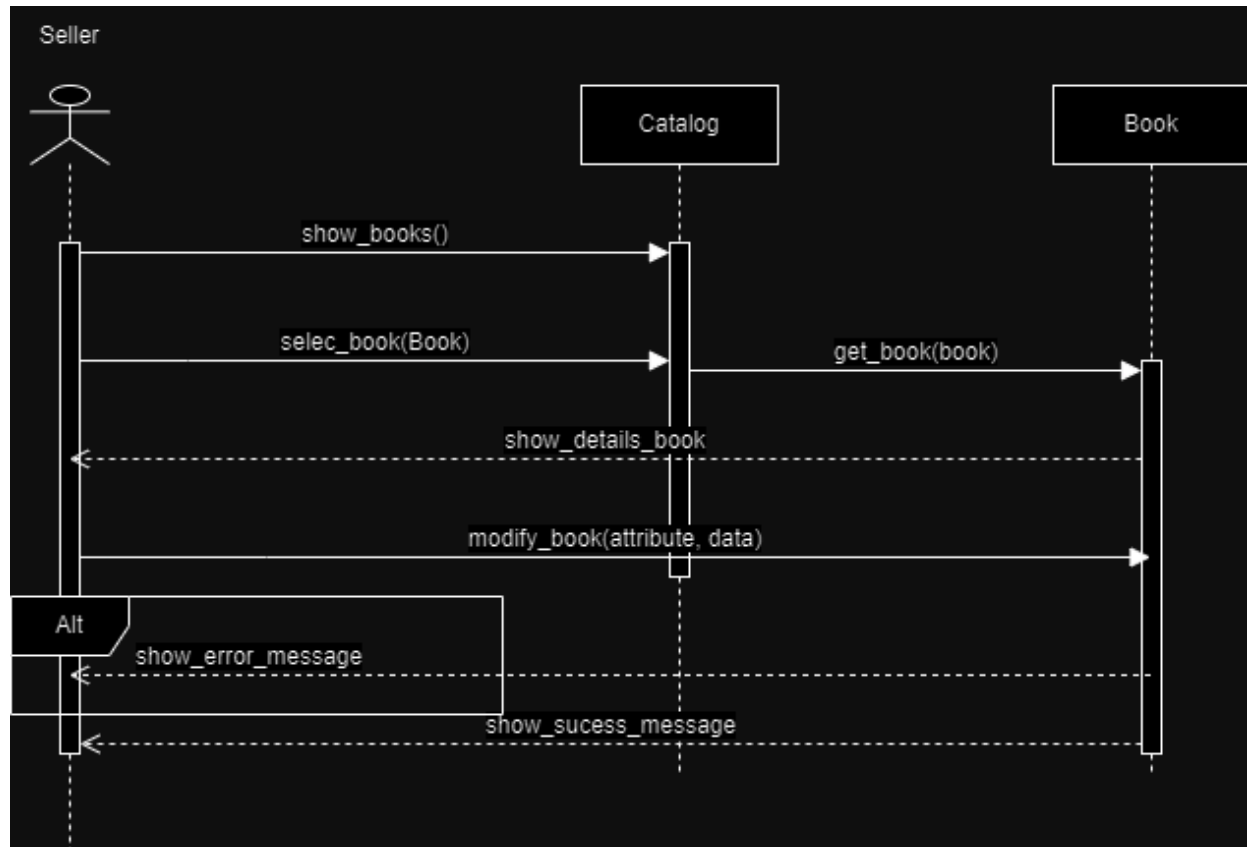
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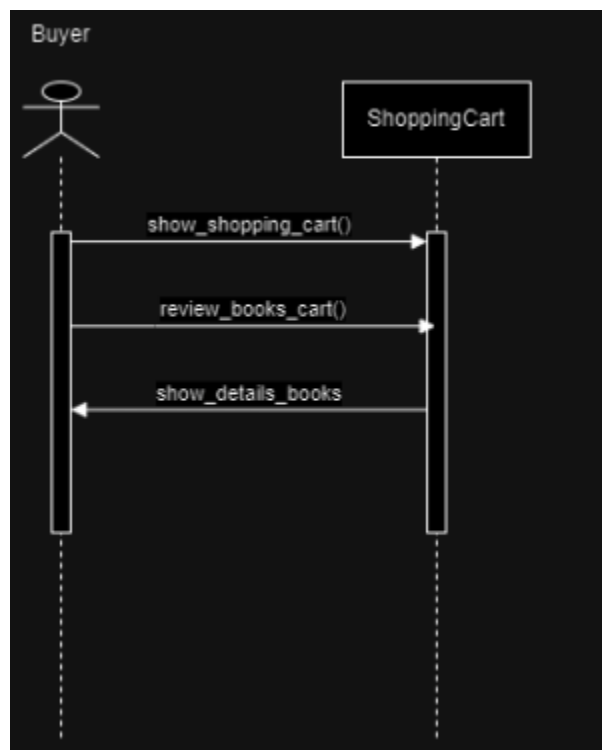
Login



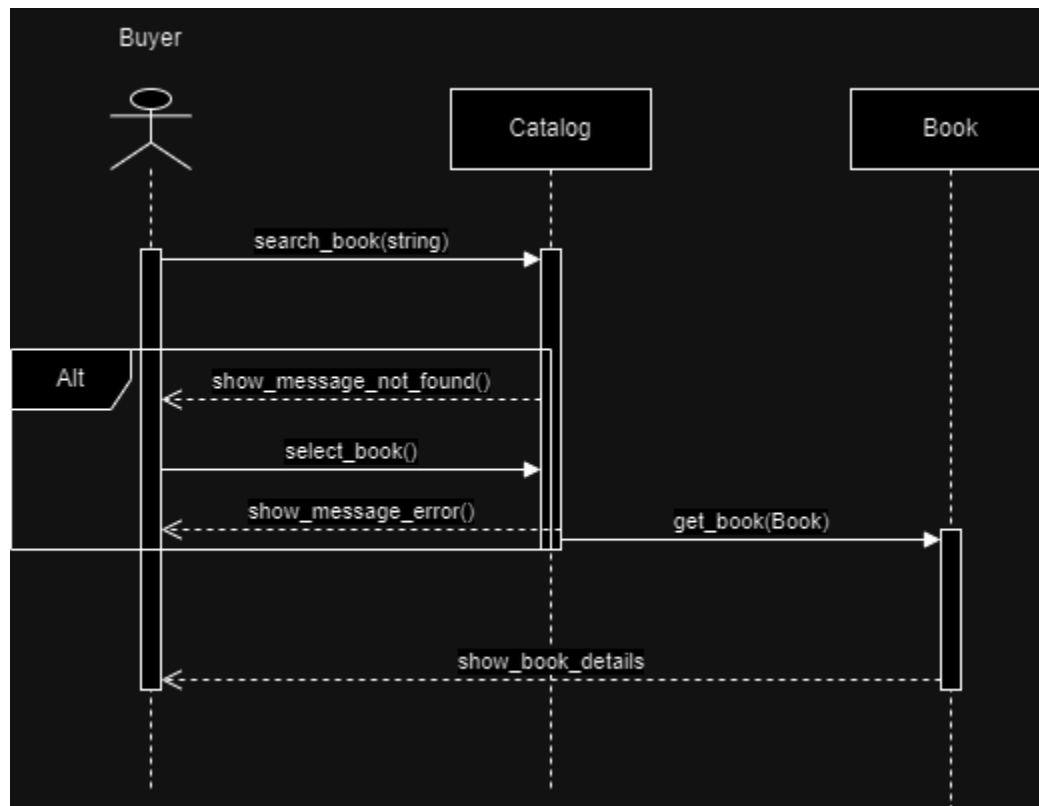
Modify details book:



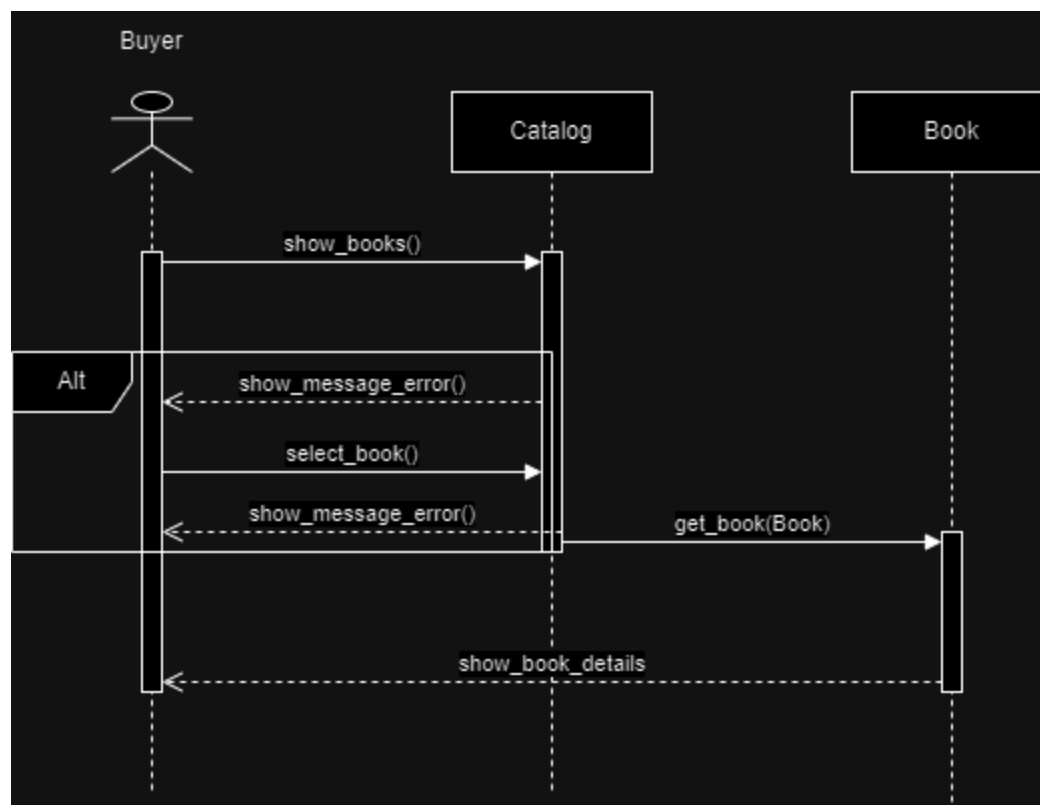
Review books cart:



Search books



Show Books:



Class Diagram:

