

Project Idea: Library Catalog

<u>Title</u>	<u>Library Catalog System</u>
<u>Description</u>	Library catalog system where users can add books , search for books by title or author , borrow books and check book availability . Each book can be an object.
<u>Deliverables</u>	<ol style="list-style-type: none"> 1. Class diagram for the project (Printed) 2. Java project includes all classes and functions in the description 3. Documentation that contains <ol style="list-style-type: none"> 1. your own system description 2. input and output scenarios
<u>Bonus</u>	GUI
<u>Description</u>	<p>(Data members/attributes)</p> <p>(For Books)</p> <ul style="list-style-type: none"> ● Book id ● Book title ● Author ● Publication year ● Status(available or not) ● Price <p>(For customer)</p> <ul style="list-style-type: none"> ● customer id ● Name ● Orders <p>(For Orders)</p> <ul style="list-style-type: none"> ● Order ID ● Book

- Quantity
- Price

(For Borrower)

- Borrower ID
- Borrower name
- Transactions

(For Transactions)

- Book
- Borrower
- Borrow Date
- Return Date

(For Library)

- Books
- Customers
- Borrowers

Admin Functionalities:

- Add new Books with details
- Update book information(price, availability, etc)
- Remove books from the system
- Manage an inventory of books available for purchase
- Add new borrower
- Update borrower details(name,contact details)
- Remove borrowers from the system

User Functionalities:

- Register for the first time
- Login to access the system
- Logout

	<ul style="list-style-type: none"> ● View item details then add it to shopping cart ● Search for books by title or author ● System should recommend some books if a specific chosen book is not available ● System should maintain a history of customer orders ● System should allow customers to view their order history ● System may apply discounts and promotions to book purchases ● System should allow customers to leave reviews and ratings for books ● System should display book ratings to help users make informed decisions ● Registered users can borrow books ● System should record borrowing transactions ,including the borrower,book and borrow date ● System should Check the availability of a book before allowing a borrower to check it out ● View a list of available books with details ● System should set due date for book returns ● System should maintain a history of borrowing and returning transactions ● Users can view their borrowing history and return dates ● System should provide a way for borrowers to check the availability of a specific book ● System should record book returns and update availability ● The system calculates fines for late returns
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	<ul style="list-style-type: none"> ● Send notifications to users regarding due date, overdue items and reservations confirmations ● System should notify borrowers when reserved books are available for pickup ● View cart details ● Delete items from cart ● Update items quantity ● Optional payment methods: cash on delivery or using credit card
<u>Notes</u>	<ol style="list-style-type: none"> 1. You should implement all concepts of OOP. 2. Each member MUST work on at least one of the required classes besides file processing or GUI. (Individual marks) 3. The evaluation will be mainly based on the student's ability to use and apply OOP concepts and the explanation of the code. 4. You must deliver the Class Diagram for the project. 5. You must apply exception handling 6. Using Files is mandatory (Not Database) 7. Any project must have at least <u>8 classes</u> 8. Regarding <u>files</u>: <ul style="list-style-type: none"> - You must have only two functions for file reading and writing. - You should read data once at the beginning of your run then do your operations and access the code then save in files at the end of your program.