



# Library Management System

Modern Library Management Made Simple

Java-Based Solution for Academic Libraries

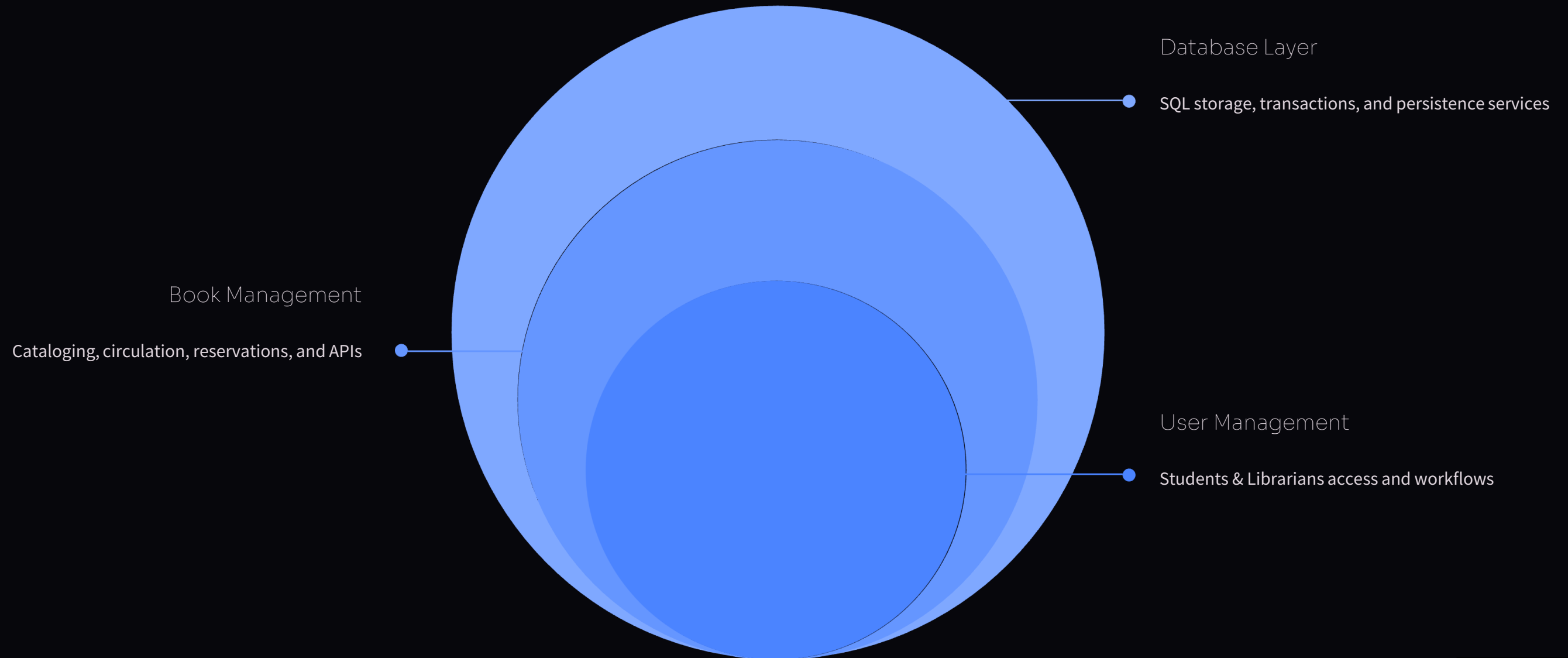
Developed by: Chandra Prakash

GitHub : [Library System](#)

# System Architecture

A three-tier architecture designed for scalability, security, and efficient library operations across student and librarian workflows.

**Core Technologies:** Java | Java FX | SQL Database | Object-Oriented Design



# Key Features

## Book Management

- Add and remove books from inventory
- Real-time stock updates
- Track issue and return status
- Automated fine calculation

## User Management

- Separate student and librarian accounts
- Secure password authentication
- Role-based access control
- Complete user profile management





# Technical Implementation

The system follows object-oriented principles with a modular structure for maintainability and extensibility.

1

## Core Components

Book.java | Student.java | Librarian.java | Library.java

2

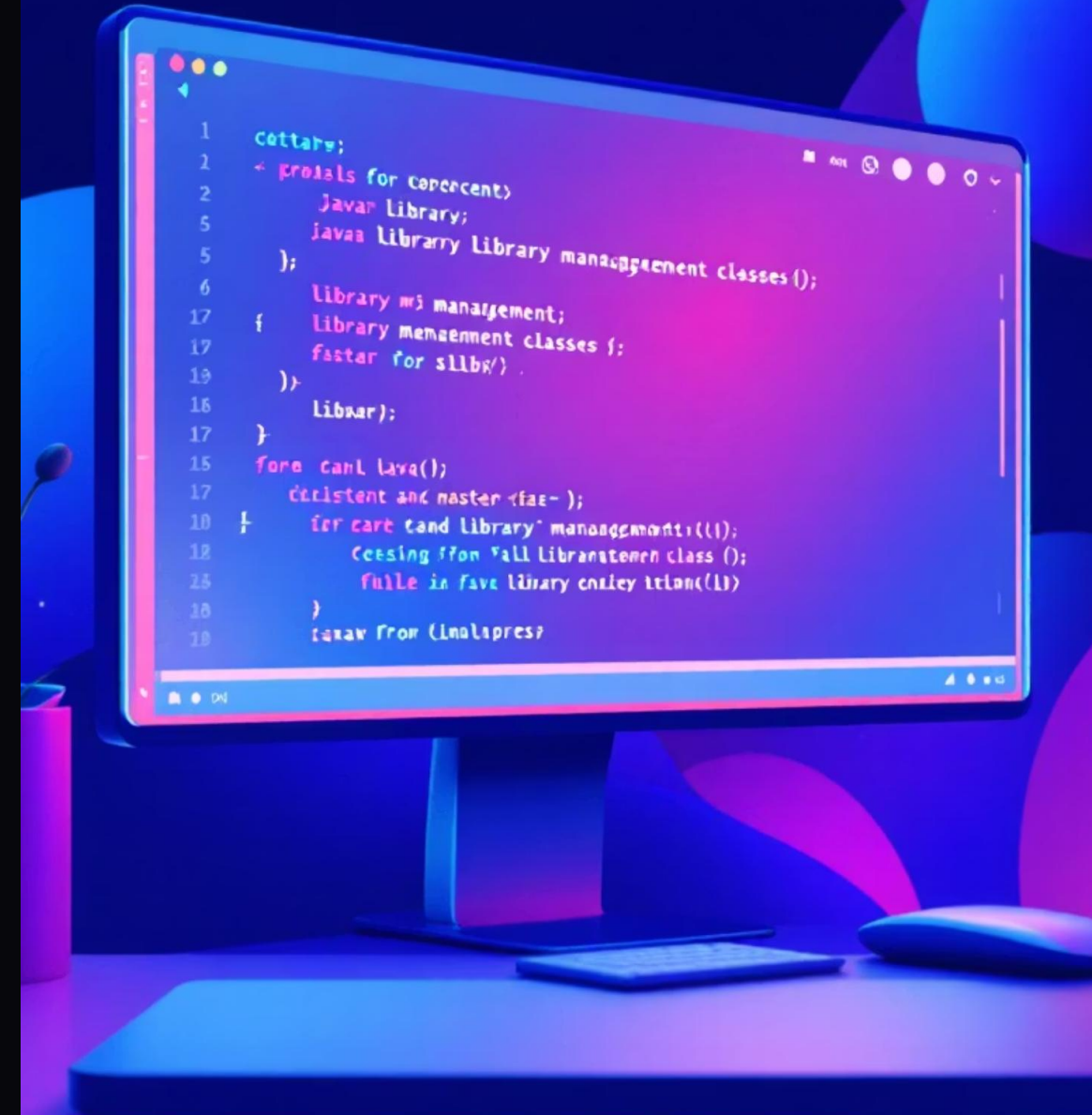
## Data Persistence

DatabaseManager.java handles all SQL operations securely

3

## Business Logic

Enforces 7-day issue period and ₹10/day fine system



# System Workflow & Benefits

Streamlined processes ensure efficient library operations with complete transparency and real-time updates.

01

## Book Issue

Students request books; system validates availability and logs the transaction

02

## Return Management

System records return date and calculates applicable fines if overdue

03

## Fine Settlement

Automated fine calculation at ₹10 per day over 7-day issue period

### Automated Operations

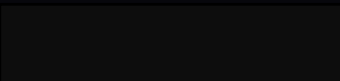
Eliminates manual tracking errors

### Real-Time Updates

Instant visibility into inventory

### Secure Access

Role-based permissions protect data



# Thank You

[NotChandraPrakash/library-management-system](#)

Simplifying library operations through technology

