Library Management System Requirements:

1. Book Management:

 Add, edit, delete, and view book details

 Book information includes: ISBN, title, author, publisher, publication year, page count, genre, number of copies

 Search books by multiple criteria (title, author, ISBN, genre)

 Track book status (available, borrowed, under repair)

1. Patron Management:

 Register new patrons

 Update patron information

 Delete or deactivate patron accounts

 Patron information includes: ID, name, address, email, phone number, date of birth

 Track patron borrowing history

1. Borrowing/Returning Management:

 Allow patrons to borrow books

 Record book returns

 Automatically calculate due dates

 Send notifications to patrons when books are due

 Calculate fines for overdue books

1. Book Reservation:

 Allow patrons to reserve books that are currently borrowed

 Notify patrons when reserved books become available

 Manage reservation queues for each book

 Genre Management:

 Add, edit, delete book genres

 Link books to one or more genres

1. Reporting and Statistics:

 Generate reports on book quantities by genre

 Statistics on most borrowed books

 Report on most frequent borrowers

 Statistics on revenue from overdue fines

1. User Management and Access Control:

 Create accounts for library staff and administrators

 Assign access rights for different functions

 Authenticate and authorize users

1. User Interface:

 Homepage displaying new and popular books

 Advanced search page with filters

 Personal page for patrons to view borrowing history and current loans

1. API:

 Provide RESTful API for all functionalities

 Use JWT for API authentication

1. Integrations:

 Integrate with email system for sending notifications

 Integrate with online payment service for fine payments (optional)

1. Security:

 Encrypt sensitive data

 Handle CORS

 Protect against common attacks (SQL injection, XSS, CSRF)

1. Logging and Monitoring:

 Log all important activities

 Monitor system performance

 Backup and Restore:

 Automatically backup the database periodically