

Library Management System UML Diagram Overview

This diagram models a relational database for managing a library network where readers can borrow books. The entities are structured to efficiently track books, readers, and loan transactions while maintaining data integrity.

Entities and Key Relationships:

- 1. **Reader**: Stores reader details with a unique ReaderID.
- 2. **Library**: Represents each library with LibraryID, name, and contact info.
- 3. **Book**: Contains book information (BookID, title, ISBN, etc.).
- 4. **Author**: Stores author details with AuthorID and links to books via the junction table.
- 5. **BookCopy**: Tracks individual copies of books in libraries (CopyID), linked to LibraryID and BookID, with status (ENUM) indicating availability.
- 6. **Loan**: Manages book borrowing, linking ReaderID and CopyID with loan details like dates and status (ENUM).
- 7. **BookAuthor**: Junction table for the many-to-many relationship between Book and Author, using BookID and AuthorID as composite keys.

