

# Project Description

The Library Management System API is a RESTful service designed to manage books, authors, members, and borrowing activities within a library. The system allows administrators to perform CRUD operations on books and members, manage authors, and track borrowing and returning of books. The API ensures accurate tracking of book availability and member transactions while maintaining structured and secure data management.

## Functionalities Provided:

1. Add, update, delete, and retrieve books
2. Manage authors and their books
3. Register and manage library members
4. Borrow and return books
5. Track borrowing history
6. Maintain book availability status

## API Endpoints Definition

### Book Endpoints

Method	Endpoint	Description
GET	/books/	Retrieve all books
POST	/books/	Add new book
GET	/books/{id}/	Retrieve single book
PUT	/books/{id}/	Update book
DELETE	/books/{id}/	Delete book

### Member Endpoints

Method	Endpoint	Description
GET	/members/	Retrieve all members
POST	/members/	Register member
GET	/members/{id}/	Retrieve single member
PUT	/members/{id}/	Update member
DELETE	/members/{id}/	Delete member

## Author Endpoints

Method	Endpoint	Description
GET	/authors/	Retrieve all authors
POST	/authors/	Add new authors
GET	/authors/{id}/	Retrieve single authors
PUT	/authors/{id}/	Update authors
DELETE	/authors/{id}/	Delete authors

## Borrowing Endpoints

Method	Endpoint	Description
POST	/borrow/	Borrow a book
POST	/return/	Return a book
GET	/borrow-records/	View all borrow records

## Database Schema (Models Definition)

### Book Model

Field	Type	Description
id	AutoField	Primary key
title	CharField	Book title
author	ForeignKey(Author)	Book author
ISBN	CharField	Unique book identifier
category	CharField	Book category
availability_status	BooleanField	Available or not

### Relationship:

- Many Books → One Author
- One Book → Many BorrowRecords

## Member Model

Field	Type	Description
id	AutoField	Primary key
name	CharField	Member name
email	EmailField	Member email
membership_date	DateTimeField	Registration date

### Relationship:

- One Member → Many BorrowRecords

## Author Model

Field	Type	Description
id	AutoField	Primary key
name	CharField	Author name
biography	TextField	Author details

### Relationship:

- One Author → Many Books

## BorrowRecord Model

Field	Type	Description
id	AutoField	Primary key
book	ForeignKey(Book)	Borrowed book
member	ForeignKey(Member)	Borrowing member
borrow_date	DateTimeField	Borrow date
return_date	DateTimeField	Return date

### Relationship:

- Many BorrowRecords → One Book
- Many BorrowRecords → One Member