**Backend API Technical Requirement Document**

**BOOKS MANAGEMENT SYSTEM – BORROW BOOK API**

**1. Overview**

This document outlines the requirements for creating backend API endpoints to handle book borrowing transactions for the Books Management System.

**2. Objective**

* Develop API endpoints to allow users to borrow books.
* Implement validation for borrowing book data.
* Integrate the backend with the database to store borrowing transaction information securely.

**3. Success Criteria**

* API returns a success response upon successful borrowing of a book.
* API returns an error response upon failure to borrow the book.
* Borrowing transaction data is securely stored in the database.

**4. Endpoints**

* **POST /api/borrow**
  + **Purpose:** Borrow a book.
  + **Request Body:**

Json { "userId": "string", "bookId": "string", "borrowDate": "string", // Format: YYYY-MM-DD "dueDate": "string" // Format: YYYY-MM-DD }

* + **Response:**
    - Success (HTTP 201 Created):

Json { "success": true, "message": "Book borrowed successfully", "data": { "transactionId": "string", "userId": "string", "bookId": "string", "borrowDate": "string", "dueDate": "string", "status": "borrowed" } }

* + - Error (HTTP 400 Bad Request):

Json { "success": false, "message": "Validation error: Invalid data provided" }

* + - Error (HTTP 500 Internal Server Error):

Json { "success": false, "message": "Internal server error" }

**5. Validation**

* Validate that all required fields are provided in the request body.
* Validate the format of the dates.
* Ensure the book is available for borrowing.

**6. Error Handling**

* Invalid data provided: Return HTTP 400 Bad Request status code with an appropriate error message.
* Handle server errors and database query errors appropriately, returning an HTTP 500 Internal Server Error status code with an error message.

**7. Data Storage**

* Store the borrowing transaction data securely in the database.
* Ensure data integrity by validating and sanitizing user input before storing it in the database.