1. Functional and Non-Functional Requirements

Functional Requirements:

1. **User Authentication**:
   - The API should require users to authenticate using Laravel Sanctum.
   - Only authenticated users should be able to access CRUD operations on books.
2. **CRUD Operations for Books**:
   - **Create**: Add new books with attributes: title, author, genre, and year of publication.
   - **Read**: Fetch all books or retrieve specific book details by its ID.
   - **Update**: Modify book details such as title, author, genre, or year.
   - **Delete**: Remove a book from the system.
3. **Validation**:
   - Validate request data for creating and updating books to ensure data integrity.
   - Return appropriate error messages for invalid inputs (e.g., missing required fields, invalid data types).
4. **Error Handling**:
   - The API should return relevant error responses (e.g., 404 for not found, 400 for bad requests).
5. **API Documentation**:
   - Provide documentation for all API endpoints with input/output formats, authentication requirements, and response codes.

Non-Functional Requirements:

1. **Performance**:
   - The API should handle multiple simultaneous requests efficiently without significant delay.
   - The system should scale to support a large number of books.
2. **Security**:
   - Ensure secure communication by enforcing HTTPS.
   - Protect the API with authentication and ensure authorized access to CRUD operations.
3. **Maintainability**:
   - Code should be modular, easy to read, and maintain.
   - Use Laravel's architecture for clean separation of concerns.
4. **Scalability**:
   - The system should be able to scale horizontally (e.g., load balancing) or vertically as traffic increases.
5. **Availability**:
   - Ensure the API is available 99.9% of the time, implementing strategies such as replication and failover for high availability.
6. **Reliability**:
   - Ensure that the database maintains consistency and that no data is lost during operations.
7. **Usability**:
   - The API should be easy to use for developers, with clear error messages and comprehensive documentation.