Project Report: Library Book Search

Part 1: Introduction

Overview:

- **Project Topic:** Library Book Search
- **Project Use:** Assist users (library users and librarians) in quickly finding the books they need
- **Project Type:** Website
- **Technologies:** HTML, CSS (frontend); Python, Flask (backend); SQLite (database)

Background:

This project was created to help librarians organize and search for books efficiently. By implementing a simple web-based search system, both library users and librarians can easily access and update information about available books.

Part 2: Project Plan

Below is an overview of the project plan with each part and its status:

Part	Main Content	Tool Type	What's Included	Completion
Part 1	Database Creation and Data Entry	SQLiteStudio	- Database design diagram - Creation of tables: Books, Authors, BorrowRecords, Users - Query views and sample data	Completed

Part 2	Backend Code Production	Python and Flask	- Flask application setup - Database connection and API development - Routing and business logic	Completed
Part 3	Frontend Code Production	HTML	- Web page templates (Home, Search, Details pages) - Using Jinja2 to display data from the backend	In Progress
Part 4	Web Page Styling	CSS	- Overall website styling - Layout, fonts, colors, and responsive design	In Progress
Part 5	Testing and Integration	Manual Testing	- Overall system functionality testing - Bug fixing and performance optimization	Not Started

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Part 3: Feedback & Visual Evidence

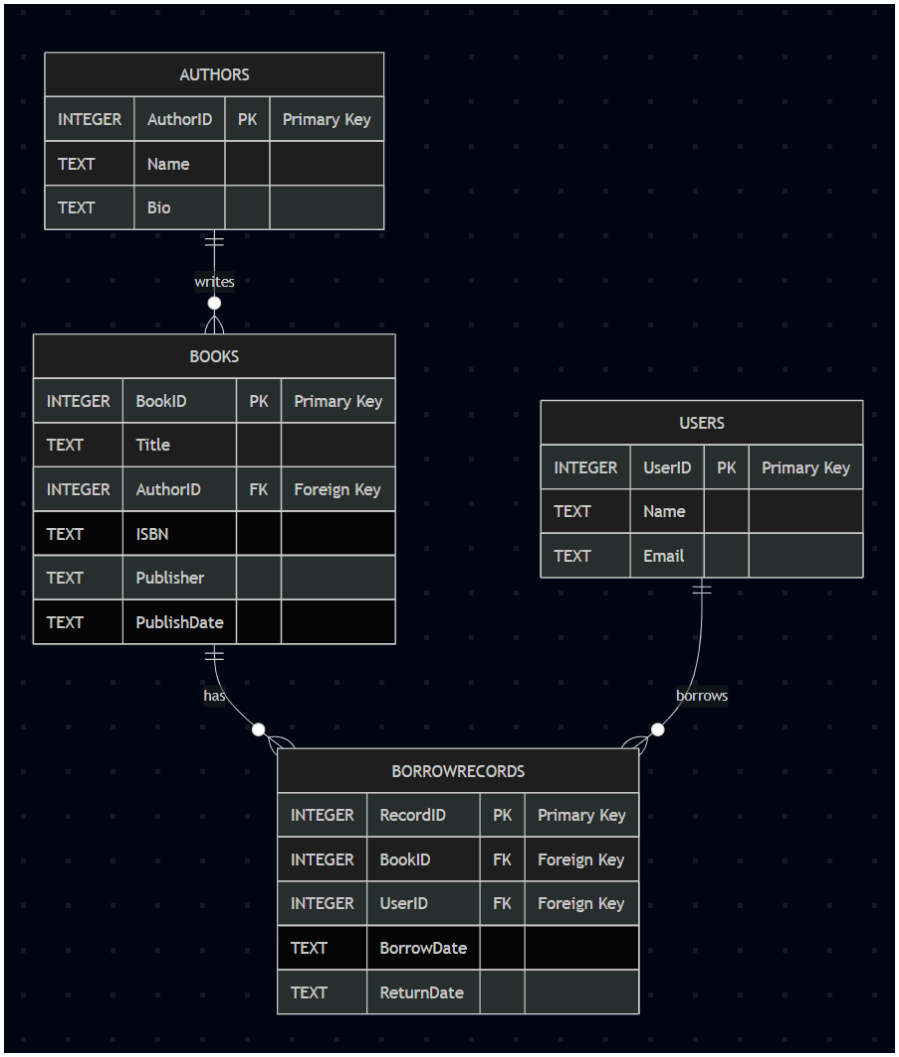
Feedback Summary:

1. New database information in the pictures. (from classmate)
2. The webpage is too monotonous（from myself)
3. Missing footer（from myself)
4. Insufficient search results（from myself)

Screenshots / Photos:
Include visual evidence such as screenshots of your application or error messages. For example:

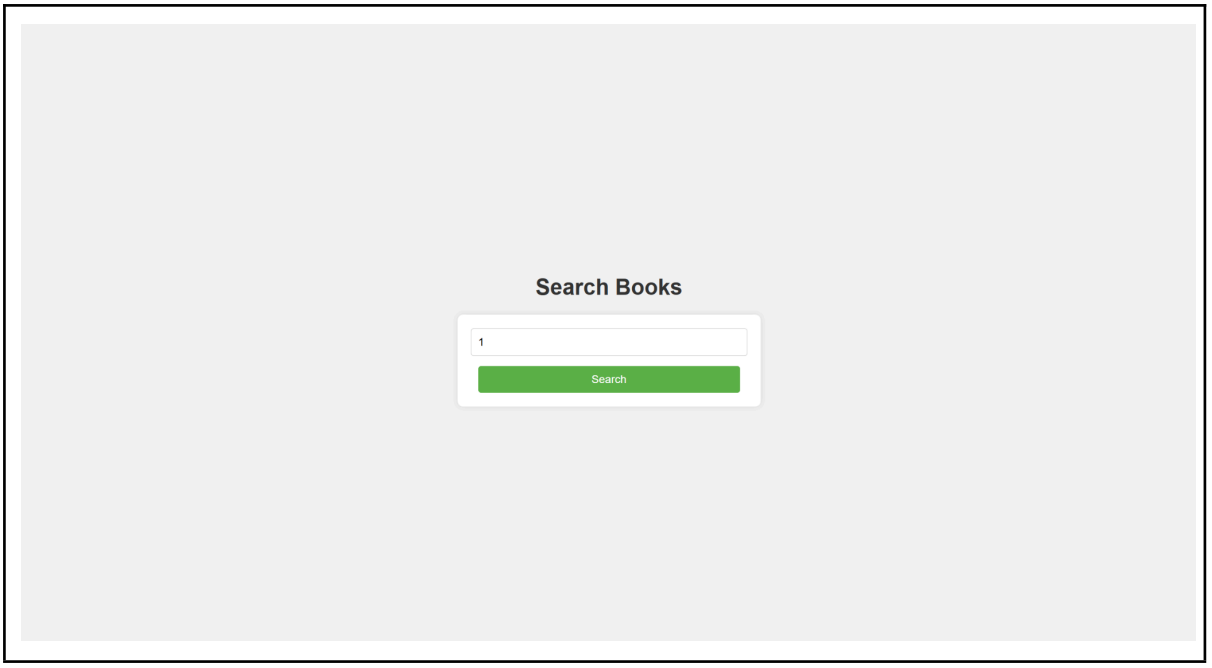
Screenshot 1: Database design diagram

Description: This screenshot shows the library books database design.（Not the final result）



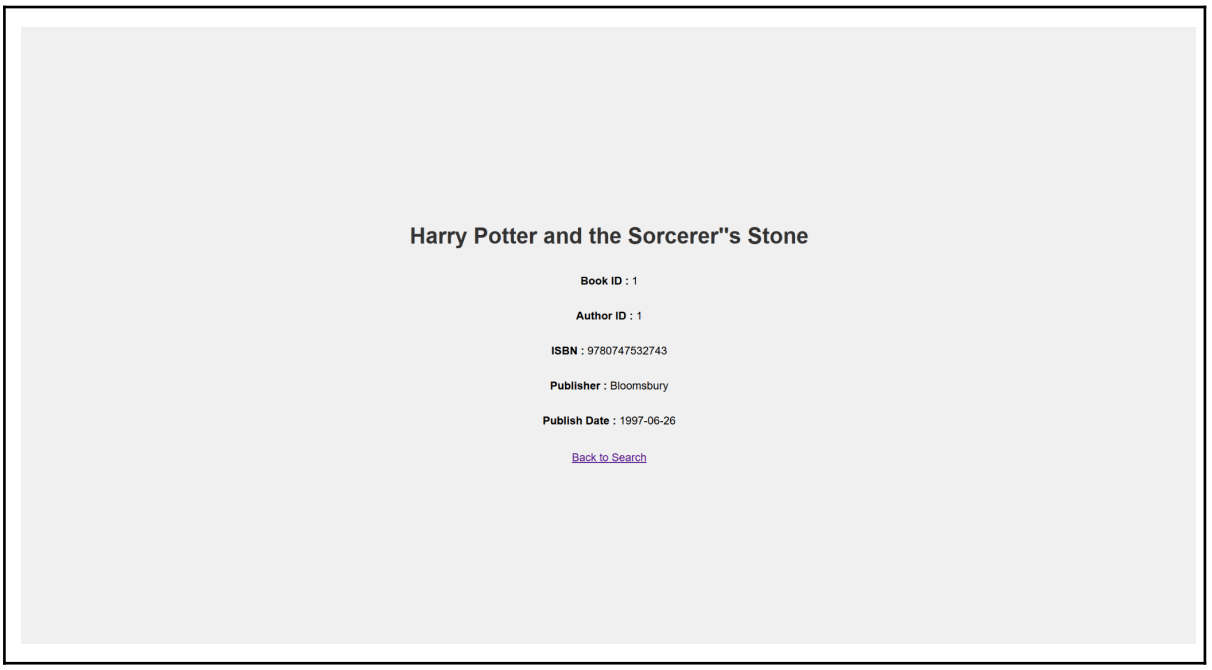
Screenshot 2: Home Page Display

Description: This screenshot shows the homepage of the Library Book Search system.（Not the final result）



Screenshot 3: Search Results

Description: This screenshot shows the search results after querying for a specific book.（Not the final result）



Screenshot 4: Database queries for each route (SQL query/queries)

Description: This screenshot shows database queries for each route (SQL query/queries)（Not the final result）

```sql
SELECT
    Books.BookID,
    Books.Title,
    (
      SELECT Authors.Name
      FROM Authors
      WHERE Authors.AuthorID = Books.AuthorID
    ) AS AuthorName,
    (
      SELECT CASE
                WHEN EXISTS (
                  SELECT 1
                  FROM BorrowRecords
                  WHERE BorrowRecords.BookID = Books.BookID
                    AND BorrowRecords.ReturnDate IS NULL
                )
                THEN 'Borrowed'
                ELSE 'Returned'
             END
    ) AS BorrowStatus
FROM Books
WHERE Books.BookID = 1
```

Additional Comments:
"At this stage, the backend is fully functional. The frontend is under progress, and based on feedback, further improvements in layout and styling are planned for the next phase."

Routes* / function signatures for each page**

```
Home.html :@app.route('/')
           def home():

Search.html   :@app.route('/search', methods=['GET'])
              def search():

Book_details.html :@app.route('/search/result', methods=['POST'])
                   def search_result():
```

Conclusion

- Project Topic : Library Book Search
- Project Use : Assist users to quickly find the books they need
- Project User : Library users and librarians
- Project Type : Website
- Project front-end code : html and css
- Project backend code : python and flask