

TEST SCENARIO TS-02: CORE FUNCTIONALITY & TRANSACTIONS

Project Name: Library Inventory Manager

Document ID: TS-02

Module: Business Logic (CRUD, Loans, Reporting)

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1. TEST OBJECTIVE

To verify that the application correctly handles data operations, specifically **Database Transactions** (saving books with authors), **M:N relationships**, **Loans** (using the 5th table), and **Reporting** (using SQL Views).

2. PREREQUISITES

- The application is running (`python app.py`).
- Database is installed and accessible.
- A valid JSON file named `test_import.json` is ready for import testing.

3. TEST STEPS EXECUTION

STEP 1: Add Book (Transaction Test)

- **Action:** Navigate to "Add Book". Fill in the form:
 - **Title:** Transaction Test Book
 - **Price:** 500
 - **Condition:** New
 - **Category:** Sci-Fi
 - **Authors:** Select **two different authors** (hold CTRL/CMD to select multiple).
 - Click "**Save Book**".
- **Expected Result:** The application redirects to the Dashboard with a green success message ("Book added successfully"). The new book appears in the list showing both selected authors (verifying the M:N relationship).

STEP 2: Borrow Book (Loan Logic)

- **Action:** Locate the Transaction Test Book on the Dashboard. Click the green "**Borrow**" button.

- **Input:** Enter borrower name: John Tester.
 - Click "Confirm Loan".
- **Expected Result:** Redirects to Dashboard. The book's status badge changes to "Borrowed" (Red). The "Borrow" button is replaced by a "Return" button. A record is created in the `loans` table.

STEP 3: Return Book

- **Action:** Click the "Return" button next to the same book.
- **Expected Result:** The book's status changes back to "Available" (Green). The "Borrow" button reappears.

STEP 4: Reporting (SQL View Test)

- **Action:** Navigate to the "Reports" page.
- **Expected Result:** A table is displayed showing statistics (Total Books, Inventory Value, Average Price) grouped by Category. This confirms the database **VIEW** (`view_library_stats`) is working correctly.

STEP 5: Data Import

- **Action:** Navigate to "Import". Click "Choose File", select `test_import.json`, and click "Upload".
- **Expected Result:** A success message appears stating how many books were imported. The new books are visible on the Dashboard.

STEP 6: Edit Book

- **Action:** Click "Edit" on any book. Change the **Price** to 999 and click "Update".
- **Expected Result:** The change is immediately reflected in the Book List.

4. TEST RESULT

(To be filled by the Tester)

Status: [] **PASS** (All functions work as expected) [] **FAIL** (One or more functions failed)

Tester

Name: _____ **Date:** _____