Test Case Design Document

Test Case 1: Add Book

- **ID**: TC_01
- **Objective**: Test adding a book to the list.
- **Preconditions**: Accessible books.csv.
- **Test Data**: Title = "Test Book", Author = "Test Author", Year = "2022"
- **Steps**: Call add_book with valid data.
- **Expected Result**: Book added, message "Book added: Test Book".

Test Case 2: Add Book with Invalid Year

- **ID**: TC_02
- **Objective**: Test adding a book with an invalid year.
- **Preconditions**: Accessible books.csv.
- **Test Data**: Title = "Test Book", Author = "Test Author", Year = "invalid_year"
- **Steps**: Call add_book with invalid year.
- **Expected Result**: Error message "Invalid year value. Please enter a valid number."

Test Case 3: Add Book with Missing Title/Author

- **ID**: TC_03
- **Objective**: Test adding a book with missing title/author.
- **Preconditions**: Accessible books.csv.
- **Test Data**: Title = "", Author = "Test Author", Year = "2022"
- **Steps**: Call add_book with empty title.
- **Expected Result**: Error message "Title and Author cannot be empty or just whitespace."

Test Case 4: Delete Book

- **ID**: TC_04
- **Objective**: Test deleting a book.
- **Preconditions**: Book exists in books.csv.
- **Test Data**: Title = "Test Book"
- **Steps**: Call delete_book with existing book.
- **Expected Result**: Message "Book deleted: Test Book".

Test Case 5: Delete Non-Existent Book

- **ID**: TC_05
- **Objective**: Test deleting a non-existent book.
- **Preconditions**: Book does not exist in books.csv.
- **Test Data**: Title = "Non-Existent Book"
- **Steps**: Call delete_book with non-existent book.
- **Expected Result**: Message "Book not found".

Test Case 6: List Books

- **ID**: TC_06
- **Objective**: Test listing all books.
- **Preconditions**: books.csv contains multiple books.
- **Test Data**: N/A
- **Steps**: Call list_books.
- **Expected Result**: Books printed with title, author, and year.

Test Case 7: List Books When File is Empty

- **ID**: TC_07

- **Objective**: Test listing when the file is empty.

- **Preconditions**: Empty books.csv.

- **Test Data**: N/A

- **Steps**: Call list_books.

- **Expected Result**: Message "No books available".

Test case report

Test Case	Result	Reason
test_add_book	Pass	The book was successfully added.
test_add_invalid_year	Fail	The year value was invalid (non-integer).
test_add_missing_fields	Fail	The title or author was empty or whitespace.
test_add_multiple_books	Pass	Multiple books were added successfully.
test_delete_book	Pass	Book was successfully deleted.
test_delete_nonexistent_book	Pass	No book was deleted (expected behavior).
test_list_books_empty	Pass	Correctly handled an empty book list.
test_list_books	Pass	Books were listed correctly.

Test Case	Result	Reason
test_read_empty_file	Pass	Correctly handled an empty CSV file.