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SOFTWARE TESTING
LAB FINAL

SUBMITTED TO: MUKHTYAR ZAMIN

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GROUP: ODD:

PART 1:

EP AND BOUNDARY VALUE ANALYSIS:

5 EFFECTIVE TEST CASES FOR LIBRARY MANAGEMENT SYSTEM:

Equivalence Partitioning (EP) and Boundary Value Analysis (BVA)

Equivalence Partitions:

1. **Valid ISBN:** Properly formatted ISBNs.
2. **Invalid ISBN:** Incorrectly formatted ISBNs.
3. **Valid Title, Author:** Non-empty strings.
4. **Invalid Title, Author:** Empty strings or null values.
5. **Valid Year:** Year within a reasonable range (e.g., 1500 to current year).
6. **Invalid Year:** Year outside the range.
7. **Valid Copies:** Positive integers.
8. **Invalid Copies:** Zero or negative integers.

Boundary Values:

1. **ISBN:** Shortest and longest valid ISBN lengths.
2. **Title, Author:** Minimum length (1 character), empty string.
3. **Year:** Minimum valid year (1500), maximum valid year (current year).
4. **Copies:** Minimum valid copies (1), just above minimum invalid (0).

Test Case 1: Valid Book Addition

Test Case ID	Description	Precondition	Steps	Expected Result
TC-01	Successful addition of a book with valid details.	Library system is initialized and no duplicate ISBN exists.	Call <code>addBook("978-3-16-148410-0", "Effective Java", "Joshua Bloch", 2018, 5)</code> .	The book is added successfully.

				and the method returns <code>true</code> .
TC-02	Attempt to add a book with an invalid ISBN format.	Library system is initialized.	Call <code>addBook("123", "Effective Java", "Joshua Bloch", 2018, 5).</code>	The book is not added, and the method returns <code>false</code> .
TC-03	Attempt to add a book with an empty title.	Library system is initialized.	Call <code>addBook("978-3-16-148410-0", "", "Joshua Bloch", 2018, 5).</code>	The book is not added, and the method returns <code>false</code> .
TC-04	Attempt to add a book with a year below the minimum valid year.	Library system is initialized.	Call <code>addBook("978-3-16-148410-0", "Effective Java", "Joshua Bloch", 1499, 5).</code>	The book is not added, and the method returns <code>false</code> .
TC-05	Attempt to add a book with zero copies.	Library system is initialized.	Call <code>addBook("978-3-16-148410-0", "Effective Java", "Joshua Bloch", 2018, 0).</code>	The book is not added, and the method returns <code>false</code>