**Library Management System**

**Purpose:**

The Library Management System is a program that simulates a library, allowing users to manage a collection of books. Users can borrow books, return books, view the available books, and perform various library-related operations. The system maintains a list of books, each with a title, author, ISBN, and availability status.

**Classes:**

1. **Book** **Class**:
   * Represents a book in the library.
   * Attributes:
     + **String title**: The title of the book.
     + **String author**: The author of the book.
     + **String ISBN**: The ISBN (International Standard Book Number) of the book.
     + **boolean isAvailable**: Indicates whether the book is available for borrowing.
   * Methods:
     + **Book(String title, String author, String ISBN)**: Constructor to initialize a book with title, author, and ISBN.
     + **String getTitle()**: Returns the title of the book.
     + **String getAuthor()**: Returns the author of the book.
     + **String getISBN()**: Returns the ISBN of the book.
     + **boolean isAvailable()**: Returns true if the book is available, false otherwise.
     + **void markBorrowed()**: Marks the book as borrowed (not available).
     + **void markReturned()**: Marks the book as returned (available).
2. **Library** **Class**:
   * Manages the collection of books in the library.
   * Attributes:
     + **ArrayList<Book> booklist**: An ArrayList that stores the books in the library.
   * Methods:
     + **void addBooks(Book book)**: Adds a book to the library's collection.
     + **void displayAvailableBooks()**: Displays information about available books.
     + **Book findBookByISBN(String ISBN)**: Searches for a book by its ISBN and returns the book if found, or null if not found.
3. **LibraryManagementSystem** **Class**:
   * The main class that serves as the entry point for the program.
   * It allows users to interact with the library system, borrowing and returning books, and viewing available books.

**Usage Examples:**

Here are some examples of how to use the Library Management System:

1. Add books to the library:
   * The system is initialized with a list of books when it starts.
2. Borrow a book:
   * Enter the ISBN of the book you want to borrow.
   * If the book is available, it will be marked as borrowed.
3. Return a book:
   * Enter the ISBN of the book you want to return.
   * If the book was borrowed, it will be marked as available.
4. View available books:
   * See a list of books that are currently available for borrowing.
5. Exit the program:
   * Select the option to exit the program when you're done.

The program ensures that the user provides valid input, handles exceptions, and provides user-friendly feedback for library operations. Users can effectively manage their interactions with the library system.

Please note that this is a simplified example, and in a real-world scenario, a library management system may have additional features such as user accounts, due dates, and more extensive book information.